

COMPUTING RESEARCH NEWS



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Advance Computing Research and Change the World.

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CRN At-A-Glance

Message from the Board Chair: CRA Launches Strategic Planning Process

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See page 2 for full article.

2019 CRA Grad Cohort URMD Videos Released on Updated CRA YouTube Channel

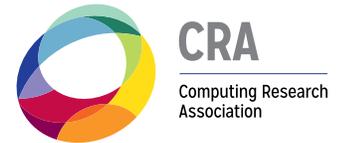
CRA recently published two videos on the 2019 Grad Cohort for URMD - one targeted at *sponsors* and the other targeted at *potential attendees*. In both videos, students, speakers, sponsor representatives, and CRA Director of Programs Erik Russell share their experiences, the impact it has and the benefits it delivers to sponsors.

See page 3 for full article.

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Message from the Board Chair: CRA Launches Strategic Planning Process



By Ellen Zegura, CRA Board Chair, Georgia Tech

To the CRA community—

I am writing to share the timeline and process for the strategic planning effort that CRA is undertaking, as well as to highlight some of the opportunities for you to be involved. The ultimate goal of strategic planning is to determine how CRA can best serve its members and the computing research community. Given the many challenges and opportunities, it is imperative that we clearly understand the needs of our members and focus our activities to address those needs.



Ellen Zegura

We have retained the services of Greenway Strategy Group, an Atlanta-based firm that specializes in providing services to social impact organizations. We have created a Strategic Planning Steering Committee (SPSC) consisting of board members, CRA staff, non-board members, and one former board member, aiming to represent a mix of constituencies. You will find the SPSC membership at the end of this message. We kicked off the effort at the July CRA board meeting with a morning session led by Martha Greenway. The planning process has three phases, Analysis, Strategy Development, and Action Planning. Analysis and Action Planning will run roughly three months each, while Strategy Development will run roughly six months. The process will last until early Fall 2020 to allow us to use the 2020 CRA Conference at Snowbird as an opportunity for substantial in-person discussion and input.

During the Analysis phase, member institutions will be asked to complete a survey designed to help us understand what you find valuable about CRA and what opportunities there may be to change or shift priorities to better serve you and the computing research community. I know we all suffer from survey fatigue, but please respond to this one. The more input we get, the better the outcome will be. You may also be asked to participate in a focus group or an individual interview. As we make progress on Strategy Development, you will have

an opportunity to respond to ideas that are emerging. At the 2020 CRA Conference at Snowbird, we will share priority outcomes, strategic themes, draft initiatives, and create feedback and discussion sessions. The outcome of this process will be a multi-year action plan with concrete steps and monitoring.

If you have questions or comments along the way, please feel free to reach out to me or any members of the SPSC. I can be reached at ewz@cc.gatech.edu.

CRA Strategic Planning Steering Committee:

Ellen Zegura, Chair of the Steering Committee, Georgia Tech

Andy Bernat, Executive Director of CRA

Andrea Danyluk, Williams College

Eric Grimson, MIT

Peter Harsha, CRA

Ayanna Howard, Georgia Tech

Ran Libeskind-Hadas, Harvey Mudd College

Chris Ramming, VMWare

Ben Zorn, Microsoft

2019 CRA Grad Cohort URMD Videos Released on Updated CRA YouTube Channel



On March 22-23, CRA hosted the second annual **Graduate Cohort for Underrepresented Minorities and Persons with Disabilities** (Grad Cohort for URMD) in Waikoloa Village, Hawaii. The location provided beautiful scenery as students spent two days learning how to succeed in graduate school and networking with a diverse group of peers and senior researchers.

CRA recently published two videos on the 2019 Grad Cohort for URMD - one targeted at **sponsors** and the other targeted at **potential attendees**. In both videos, students, speakers, sponsor representatives, and CRA Director of Programs Erik Russell share their experiences, the impact it has and the benefits it delivers to sponsors.

Do you have students interested in applying to the workshop? Check out the video for potential attendees.

Grad Cohort for URMD brings people together to build a sense of belonging, community and a network for graduate students. Through powerful discussions in a supportive environment, students learn that they are not alone and several participants consider it a life changing experience. Students also enjoy planning for their future careers and talking to potential employers in a relaxed atmosphere.

Interested in sponsorship? Check out the video for potential sponsors.

Grad Cohort for URMD encourages graduate students to build their network, and to start planning for their careers after graduation. Sponsoring the workshop supports an inclusive computing community and provides several opportunities to connect with students in a meaningful way.

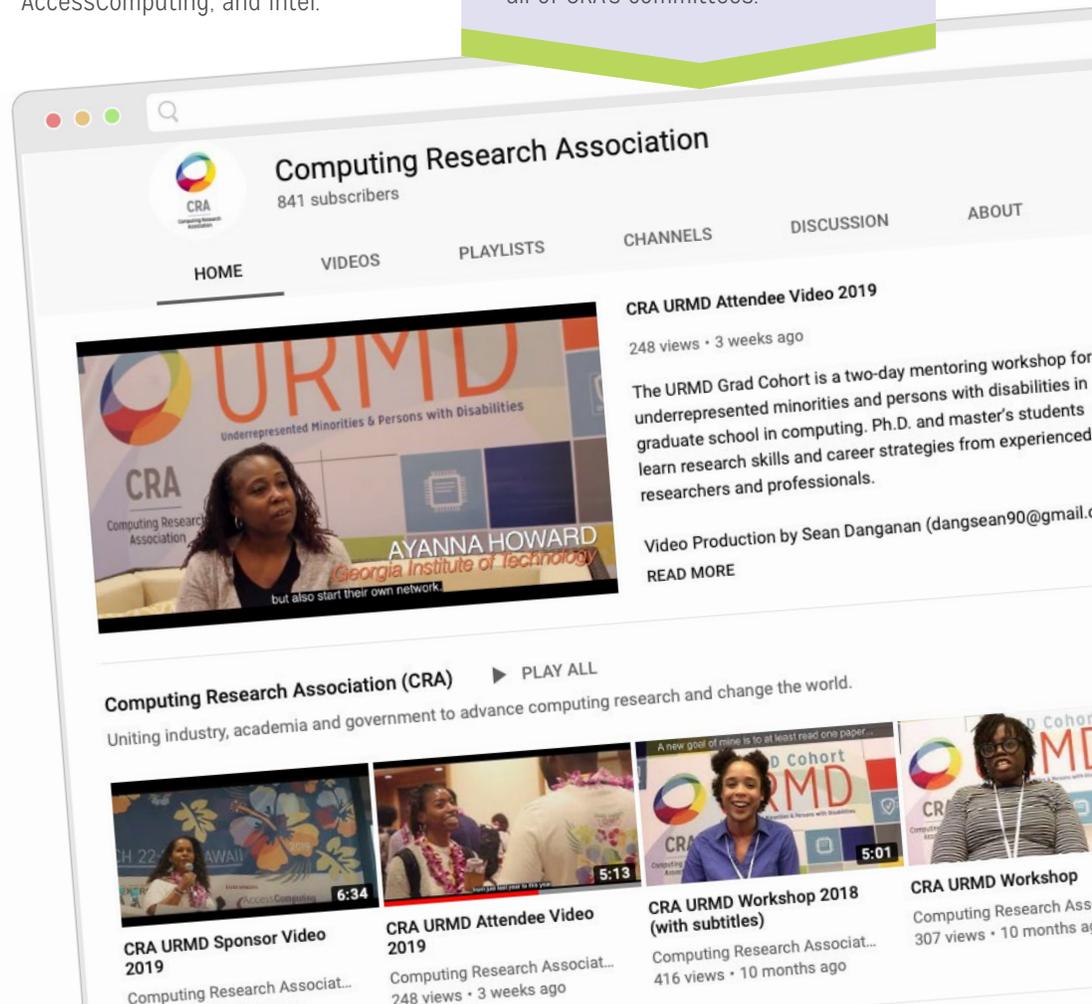
The 2019 workshop was made possible through generous contributions by the Computing Research Association, the National Science Foundation, Facebook, Google, Microsoft Research, the U.S. Department of Energy, AccessComputing, and Intel.

CRA's Updated YouTube Channel

CRA recently refreshed its presence on YouTube. From the dashboard, you can now watch video playlists from CRA and our committees.

- [Computing Community Consortium](#)
- [Catalyzing Computing Podcast](#)
- [Committee on the Status of Women in Computing Research](#)
- [Education](#)

Subscribe to the [CRA YouTube channel](#) for the latest content from all of CRA's committees.



Generation CS, Three Years Later

*Betsy Bizot, CRA Director of Statistics and Evaluation,
and Stu Zweben, CRA Survey Committee Chair, The Ohio State University*

In 2017, CRA published the *Generation CS* report on the surge in undergraduate computer science enrollments, based on data gathered through an Enrollments Survey of doctoral and non-doctoral academic units of computer science in fall 2015.

Since then, enrollments have continued to grow. In fall 2018, as part of the Taulbee Survey of doctoral departments, CRA included some questions to assess the current impact. Are academic units still struggling, or has the increase become the new normal? What changes have occurred in department resources

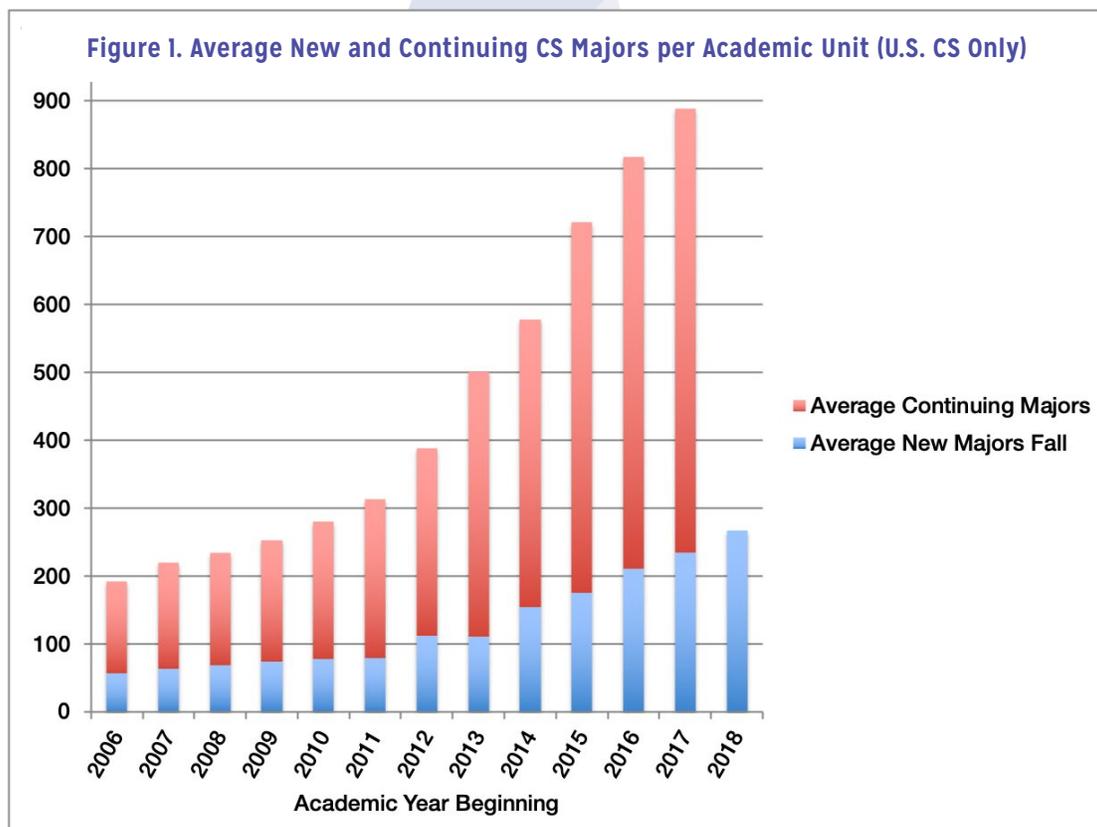
or policies? What is the observed impact on students and faculty, including student diversity?

In 2015, 134 academic units responded to the survey. In 2018, 141 responded to the questions about impact and action, and an additional 20 responded to the course-level enrollment questions. The number responding both years is 114. Because not all units answer all questions, the basis of year-to-year comparisons varies.

Finding 1. Enrollment Increases Continue With Little Sign of Slowing.

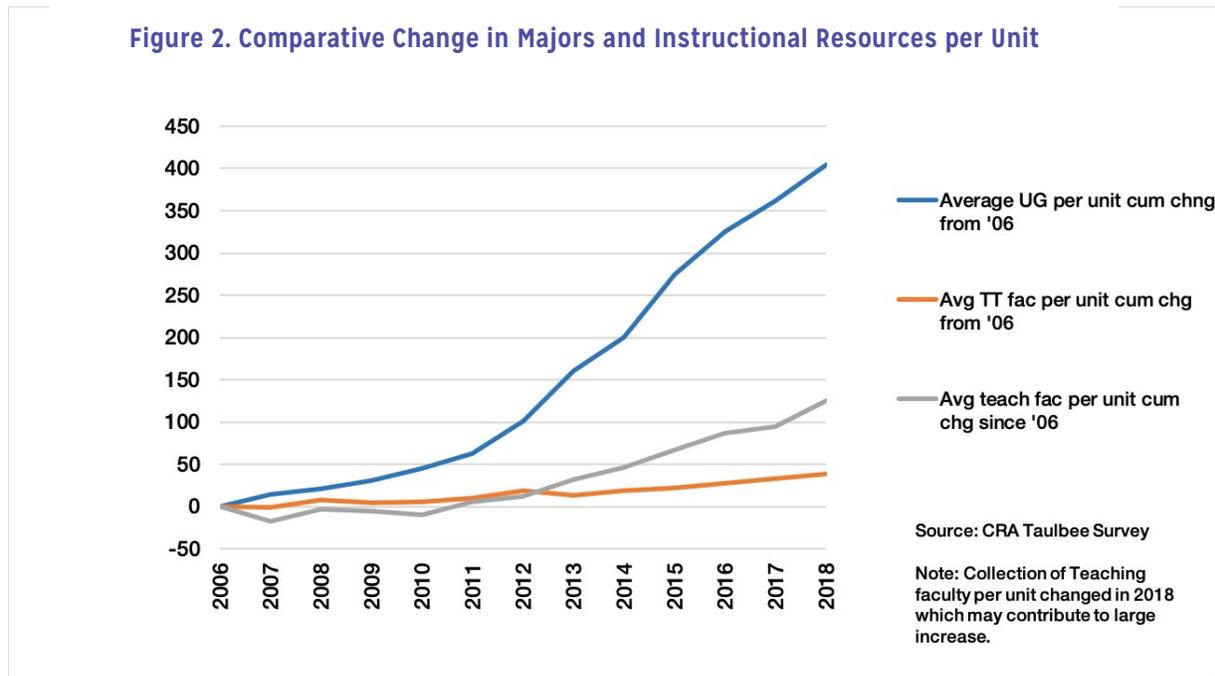
Figure 1 (replicating Figure B5 from the 2018 Taulbee Survey report) shows that the average number of CS majors per reporting department and the average number of new majors have continued to increase since the *Generation CS* report. From 2015 to 2018, average new majors increased 52% and average total majors increased by 35%.

Figure 2 (replicating Figure F1 from the 2018 Taulbee Survey) shows that the growth in average undergraduates per academic unit continues to outstrip growth in tenure-track faculty (increase from 2015 to 2018 of 35% in undergraduate majors/unit and 13% in tenure-



Generation CS (continued)

track faculty). The growth in non-tenure-track teaching faculty is beginning to keep pace with enrollment growth with an increase of 35% from 2015 to 2018, but this is not yet making up for the years in which enrollment growth greatly exceeded faculty growth.



Finding 2. Enrollment growth continues to have an impact on academic units. On average, there is greater impact for public than for private institutions, and greater impact where enrollments increased the most from 2015-2018.

In 2015, doctoral units reported the following levels of impact from enrollment growth:

- Big impact with significant challenges 65%
- Beginning to impact unit 12%
- Have seen increase but manageable so far 19.5%
- No noticeable increase or Other 3.2%

In 2018, units reported the following effects of enrollment growth on management of the unit compared to 3 years ago:

- Much easier 0%
- Somewhat easier 3%
- About the same 14%
- Somewhat more difficult 33%
- Much more difficult 50%

The 2015 survey was sent only to CS departments, including those at Canadian institutions, but not to US CE or Information units. In 2018 respondents included 10 Canadian, 2 US CE, and 7 US Information units as well as 122 US CS. The Canadian and Information units agree with US CS units that enrollment growth has made management of the unit more difficult now than three years ago (60% of Canadian units and 71% of Information units say much more difficult.).

Generation CS (continued)

Among US CS programs, units were more likely to report that management was much more difficult than three years ago if:

- They were public rather than private (52% report much more difficult vs. 39%)
- They experienced a greater increase in CS majors as reported to Taulbee (average 3-year enrollment increase of 39% for those saying management was somewhat more difficult vs. 66% for those saying it was much more difficult; significant by t-test $p < .03$)

Finding 3. In many places there have been institutional changes affecting the context of CS undergraduate education since 2015. However, these changes are not significantly related to either level of impact or to undergraduate enrollment increase between 2015-2018.

The responding academic units reported the following kinds of changes:

- New computing degree programs 45.5%
- Change in resource allocation 44.4%
- Change in responsibility for nonmajors 34.3%
- Change in admission or major declaration 29.3%
- Other change 6.1%
- Location within hierarchy change 4.0%

Finding 4. Nonmajor enrollment in CS courses continues to grow. The percent of nonmajors at different course levels has changed little since 2015. Therefore, as the number of majors continues to expand, the number of nonmajors is growing proportionately.

In the Generation CS report, we said: *In addition to the growth in majors, more nonmajors are taking computing courses past the introductory level, and more students are minoring in CS. Analyses that look only at the number of CS majors understate the demand being placed on academic units.* This continues to be true.

Table 1 shows the median % majors at 4 course levels from 2015-2018 for departments responding all years. Percent nonmajors is, of course, the inverse. Not including the Intro for Nonmajors course, which is hard to interpret because of variations across institutions, the median percent of majors at the introductory level has increased slightly since 2015, while the median percent of majors at the mid-level and upper level has held more or less steady.

Table 1. Median % Majors in Representative Course for Units Responding All Years 2015-2018. (source: Taulbee Table B9)

	Median % Majors	
	2015	2018
Intro for Majors	42.0	48.4
Mid-Level	61.5	58.8
Upper-Level	83.3	86.8

Generation CS (continued)

Finding 5. Women and underrepresented minorities continue to have low representation in CS enrollment, but they have not lost ground as overall enrollments increase and in fact have gained a little ground since 2015.

The Generation CS report said: *Despite concerns that actions to manage the enrollment surge would disproportionately affect women and underrepresented minorities (URM), as occurred in earlier booms, the data so far shows good news in terms of the number of women and underrepresented minorities enrolling in computing classes in aggregate. However, not all units are experiencing this growth.*

In 2015, the percent of women among CS majors was 16.5; in 2018, it was 19.5.

In 2015, the percent of URM among CS majors was 11.3; in 2018, it was 12.6.

Table 2 shows the differences in median course-level enrollment for women and URM between 2015 and 2018 (source: Taulbee Table B9). As with the total enrollment, both groups have made progress since 2015 but only time will tell if this is a sustained trend.

Table 2. Representative Course Enrollments for Departments Responding All Years.

	Median % Women in Representative Course		Median % Underrepresented Minority in Representative Course	
	2015	2018	2015	2018
Intro for Majors	20.6	21.6	12.2	15.2
Mid-Level	18.4	23.3	12.0	14.1
Upper-Level	15.6	17.6	9.4	12.2

Finding 6. More units report considering diversity impacts when choosing actions to respond to enrollment increases, but there is no significant change in the low percentage choosing for or against specific actions because of diversity concerns.

In 2015 we reported: *While many units (46.5%) stated they consider diversity impacts when choosing actions, very few (14.9%) chose actions to reduce impact on diversity and even fewer (11.4%) decided against possible actions out of concern for diversity.*

In 2018, those numbers were 56.5%, 13.0%, and 13.7% respectively. Comparing units who answered the questions both years, the change for considering diversity impacts was significant by t-test ($p < .01$) but the other two differences were not significant.

Finding 7. The four areas showing the most stress in 2015 continue to show the most stress in 2018: Sufficient faculty/instructors relative to demand, demand for classroom space, sufficient TAs, and faculty workload.

In 2015 we said: *Units have experienced stresses in available space, instructional resources, and faculty workload.*

As shown in Table 3, the same areas are continuing to present problems.

Generation CS (continued)

Table 3. Areas Causing Somewhat or Significant Problems in 2015 and 2018.

	2018			2015		
	Somewhat of a problem	Significant problem	Rank Order Somewhat + Signif	Somewhat of a problem	Significant problem	Rank Order Somewhat + Signif
Demand for classroom space	33.3	58.2	2	19.8	77.5	1
Demand for laboratory space	48.1	37	5	30.6	55	6
Demand for office space	34.1	48.9	6	28.8	55	7
Faculty workload	40.3	47.5	4	30.6	61.3	3
Sufficient faculty/instructors relative to need	30.5	62.4	1	26.1	68.5	2
Sufficient TAs relative to need	46	42.4	3	24.5	67.3	4
Sufficient advising or administrative support	51.4	30.4	7	41.8	47.3	5
CS majors having trouble getting access to required CS courses	49.2	21.2	11	47.3	31.8	8
CS majors having trouble getting access to CS courses of interest (e.g. elective requirement)	51.2	27.1	8	42.1	25.2	11
Nonmajors having trouble getting access to required CS courses	41.9	36.3	9	32.4	45.7	9
Nonmajors having trouble getting access to CS courses of interest	35.3	26.9	12	35.6	31.7	11
Time for faculty research/scholarship	47.9	28.9	10	37.7	32.1	10
Student performance and/or student learning declining due to increased enrollments	40.5	7.2	13	34.1	9.1	13

Finding 8. There are no significant differences in the percentage of units taking various actions to manage enrollment between 2015 and 2018. The most popular actions continue to be increasing faculty (tenure-track, teaching, and/or visitors/adjuncts).

In 2015 we reported: *Units are using or are planning to use a wide range of approaches to manage enrollments, manage enrollment related resources, and reduce the demands on faculty while trying to meet the needs of both majors and nonmajors. Many units have increased class sizes and reduced some course offerings and faculty activities.*

Generation CS *(continued)*

The 2018 survey re-asked about many of the possible actions from 2015. There are some fluctuations in the percentage of units having taken or considering each action, but none of the changes are statistically significant (Table 4).

Table 4. Percent of units who have done or are planning/considering each action.

	N both years	% Done or considering	
		2015	2018
Tighten requirements for declaration/admission to major	76	49	50
Restrict upper level courses to majors or majors and minors	84	70	65
Restrict upper level courses some other way	41	42	32
Limit enrollment in high-demand classes	86	58	64
Advise less successful students to other majors	65	55	62
Reduce courses for non-majors	67	34	40
Reduce small enrollment classes	75	64	75
Increase online offerings	65	43	49
Increase blended offerings	59	54	59
Raise the bar for doing well in prerequisite classes	61	20	23
Spin off service classes	48	15	19
Increase tenured/tenure-track faculty	84	85	87
Increase teaching faculty	83	86	92
Increase visiting faculty or adjuncts	77	84	81

Seven Tips for Advertising Your Graduate Program to Undergraduate Programs

By Janet Davis, Whitman College

Four years ago, I left a tenured faculty position at Grinnell, a selective liberal arts college, to found a brand new computer science program at Whitman, another selective liberal arts college. Since establishing this program, I've started to receive mailings not only from my own Ph.D. program, but from a range of graduate programs in computer science and related fields.

If you're reading this, you probably care about attracting graduate student applicants from institutions like mine. If you don't, you should: Baccalaureate colleges are second only to "very high research activity universities" in their institutional-yield ratios for graduates who go on to receive a doctorate in science or engineering.¹

Similarly, I want to share information about graduate programs with my students, for several reasons. First, I want our majors to be successful and happy—and that means helping them to consider the range of opportunities open to them, including graduate study, rather than assuming they will work as programmers their whole career. Second, I want to get prospective students excited about the possibilities of computer science. And finally, I want to help women and students from other underrepresented groups feel like they belong in computer science.

In my first few years as chair, I've seen enough to reflect on what leads me to share information from graduate programs with my students. Here are my top seven recommendations.

1. Make your mailings "post-able."

I've received many alumni magazines and newsletters from programs I have no relationship with. I confess, they go straight into the recycling. I don't have time to read them, and neither do my faculty colleagues. If I'm looking for something to browse, I'm far more likely to pick up the latest *CACM*, which I have a hard enough time keeping up with.

When I was at Grinnell, my department hired a student to organize files of materials from graduate programs. I considered replicating this at Whitman, but quickly concluded it wasn't worth the trouble. Today's students will Google the programs and rankings they are interested in before they even consider cracking open a file cabinet.

What we do have is a tackboard in the hall outside our main lab classroom. Here's a recent photo:



¹ Mark K. Fiegner and Steven L. Proudfoot. Baccalaureate Origins of U.S.-trained S&E Doctorate Recipients. NSF I3-323, April 2013. <https://www.nsf.gov/statistics/infbrief/nsf13323/>

Seven Tips *(continued)*

What's on it? Information about our curriculum. An advertisement for a study abroad program. And several postcards and flyers from graduate programs.

I think this tackboard is really important, since computer science students peruse it while waiting for the class before theirs to empty out of the classroom. By the numbers, these are mainly students in our 100- and 200-level classes, many of whom have not yet declared a major. Students going to their art history, English, foreign language, mathematics, and religion classes pass by as well. When choosing what to post, I consider what will catch students' eyes and what might plant a seed of curiosity about what is possible with an advanced degree in computer science.

So, instead of magazines, send small posters, flyers, or postcards. They will get seen by more undergraduates—and they will be more cost-effective to produce and mail, too.

2. Prominently display faculty research areas - or better yet, research problems.

Consider these two 8.5" x 5.5" postcards, one from the University of Albany and one from the University of Oklahoma:



Which do you see on our departmental tackboard on the previous page? Why?

While I'm impressed by Professor Zheleva's NSF CAREER Award, I had to turn the postcard over to learn it was awarded for her work on "automating the measurement and management of the radio spectrum for future spectrum-sharing applications." By contrast, the postcard from the University of Oklahoma tells me right away that Professor McGovern won awards for her work on "severe weather applications." Some students might be curious enough to turn the postcard over and learn about her work to improve hail forecasts with NOAA's Storm Prediction Center, saving lives and property. Perhaps some of our students from rural areas might even envision themselves following in her footsteps.

The front of a postcard or flyer must include research problems or areas. First, I advise students seeking a Ph.D. that they are not just looking for a good graduate program, they are looking for a program where they will be well-supported in pursuing their

Seven Tips (*continued*)

research interests. How will students decide what programs to learn more about if there is no indication of what they might study in those programs? Second, I'm mindful that women and underrepresented minorities are often motivated to study computer science by a desire to address problems that matter to them. The more such problems I can show to undecided students, the more likely it is that something might click. When a postcard or flyer headlines a concrete, relatable research problem, onto the tackboard it goes. If students won't even see a research area, it's hard to see how it's worth the space.

3. Include photos, especially of faculty and students belonging to underrepresented groups.

What these two postcards share in common, which I really appreciate, are large photos of women faculty. If you look back at the photo of our tackboard, you'll see a lot of faces. Why? Photos are colorful, and faces in particular tend to attract our attention. I prefer to post materials with photos of people because I think they will attract students' attention to the tackboard as a whole. Moreover, you should want to attract students' attention to your own materials, and this is too easy a strategy to pass up.

But more than just attracting attention, I want students from underrepresented groups to see potential role models and mentors in computer science research. If your materials show this, I am all the more likely to post them for my students to see.

4. Share what makes your program special.

What makes your program stand out from the others? What experiences and opportunities do you offer your graduate students that they might not get somewhere else? The [UW Human-Centered Design & Engineering](#) program touts the high proportion of women among its students and faculty. The University of Colorado, Boulder, advertises a new post-baccalaureate program in [Applied Computer Science](#), which might appeal to our students who discover computer science too late in their undergraduate careers to pursue the major. The [University of New Mexico Computer Science](#) program shows students posing with a green alien doll, and asks, "Are you Querque enough?" What other program could do this? While it might be a turn-off to some prospective graduate students, it will strongly appeal to others.

While you're doing this, make sure the name of your university is as visible as the name of your department or program. Look back at the photos above to see why.

5. Contribute to the CRA Member One-Pager Book.

The past two autumns, CRA Executive Director Andrew Bernat has requested our contributions to the CRA Member One-Pager book, released by email in October.

Does anybody look at this? I did! These one-pagers are just about perfect to post on our department tackboard. I printed the pages for our faculty's Ph.D. institutions, as well as a few others I thought might appeal to our students. I would gladly share the whole document with students seeking a quick overview of many programs—it's much easier to browse than a file cabinet.

Seven Tips (*continued*)

So please, plan to contribute this fall. Applying the advice above: Remember that your audience may include not only colleagues and faculty candidates, but also undergraduates applying to graduate programs, or those who might be inspired to do so. With that in mind, highlight concrete research problems or accomplishments, as well as broad research areas. Show us eye-catching photos that illustrate the diversity of your faculty and students. And last but not least, spend some time reflecting on how to communicate what makes your program unique.

6. Offer a personal touch.

Last year I received a letter in the mail from Michelle Strout, Acting Chair of Computer Science at the University of Arizona, in which she outlined her program's interest in receiving applications from students at liberal arts colleges. She pointed out that her program is excellent but small, providing the community and close relationships that liberal arts college students sought out in their undergraduate institutions and might seek in a graduate program as well. You can bet I made a point of talking with Professor Strout when I encountered her at the CRA-W Mid Career Mentoring Workshop last fall in Phoenix. And soon after, I encouraged our strongest senior to consider her program. He ended up deciding to postpone graduate applications for a year or two, but I wouldn't be surprised if the University of Arizona remains on his list.

7. Maintain relationships with alumni working at primarily undergraduate institutions.

As mentioned earlier, I made a point of posting materials advertising our faculty's Ph.D. institutions: the Universities of Illinois, Minnesota, New Mexico, and Washington. While UW CSE has grown and changed since I was a student, I remain justifiably proud of my alma mater. I want to ensure that all our home institutions are represented so that curious students can ask us questions about what our programs were like.

My good feelings about my graduate program persist in part because faculty have respected my career choices and made me continue to feel part of the family—beyond my relationship with my graduate advisor and beyond asking me for money. For instance, I had a good chair-to-chair dinner conversation with Hank Levy when we both mistook the date for my advisor's retirement party. Dan Grossman reached out to me seeking advice for students interested in careers similar to mine, and invited me to stage a departmental colloquium on teaching-oriented career paths. Richard Ladner always has a friendly word for me when we see each other at conferences (both CHI and SIGCSE), and he has also introduced me to his students interested in faculty careers at liberal arts colleges. And I shouldn't forget it was past chair Ed Lazowska who invited me five and a half years ago to share my expertise with Whitman's Computer Science Advisory Board. Considering these examples, department chairs and past chairs, graduate program directors, colloquium organizers, and faculty in nearby research areas can all play a role.

Seven Tips *(continued)*

In this essay I focused on print materials, but similar advice may apply to digital materials such as program websites, and especially emails advertising graduate programs. I rarely receive such emails from U.S. institutions, but when I do I am thrilled to forward them to our well-read CS Announcements email list.

I hesitate a little to call out blunders and share little-known advertising strategies. I don't want to ruffle any feathers.

But I think it benefits everyone when graduate programs present themselves as effectively as they can.

I look forward to receiving your new promotional materials in the academic year to come. Maybe I will need a bigger tackboard to post them all!

Do you have more tips to share? Please send your thoughts to crnonline@cra.org.

Acknowledgements

Thanks to John Stratton and Gillian Frew for their helpful feedback.

About the author

Janet Davis earned her B.S. in computer science at Harvey Mudd College and her M.S. and Ph.D. at the University of Washington. Before joining Whitman College in 2015 to found its new computer science program, she spent nine years at Grinnell College, rising to the rank of Associate Professor and serving as Director of the Wilson Program in Enterprise and Leadership. She is a member of the Liberal Arts Computer Science Consortium and a co-convener of the SIGCSE Committee on Computing Education in Liberal Arts Colleges. Her research in human-computer interaction concerns values and participation in the design of persuasive technology, currently focusing on applications intended to influence language use.

CRA Hosts 2019 Tisdale Fellows

On Tuesday June 25th, the CRA Government Affairs Office welcomed the 2019 class of **Eben Tisdale Science Policy Fellows** to the CRA office. These fellows, undergraduates at universities and colleges from across the United States, spent the summer at high-tech companies, firms, or trade associations in Washington, learning the intricacies of technology policy. Additionally, they took two class credits at George Mason University, and attended briefings at institutions such as the U.S. Capitol, Department of State, World Bank, and Federal Reserve. At the CRA office, the fellows attended a presentation by Brian Mosley, policy analyst in CRA's Office of

Government Affairs, covering the policy concerns and issues that the association works on and attempts to influence at the federal level.

This year's Tisdale Fellow for CRA is **Jesse Anderson** (far right). Jesse is a rising sophomore at the University of Maryland, College Park, pursuing a major in computer science and a double minor in policy and innovation, and entrepreneurship. This summer, Jesse has been tracking key federal appropriation bills and other pieces of legislation, as well as attending a number of Congressional hearings and briefings. We've been thrilled to have her on staff this summer!



From left to right: Evan Sanders, Hewlett Packard Enterprise; Andrea Ocanas, Dell Inc.; Caroline Dudlak, Technology CEO Council; and Jesse Anderson

Annual Reports Now Available!

Learn about the impacts of CRA's activities in our mission areas of leadership, policy, and talent development.

We are pleased to announce CRA's annual reports for the fiscal years **2016-17** and **2017-18** are now available to download as a PDF file. The CRA fiscal year runs from July 1 – June 30 of each year. These reports highlight the activities of CRA and its committees.

CRA would also like to thank our generous volunteers who donate their valuable time and energy to ensure our programs are successful.





CCC Welcomes New Council Members

By CCC Staff

July 1 began the start of a new term at CCC.



The Computing Community Consortium (CCC) Chair **Mark Hill** and Vice Chair **Liz Bradley** are staying in their respective roles for another year. They look forward to continuing the ongoing work, such as the **AI Roadmap** and the report on **Evolving Academia / Industry Relations in Computing Research**.

Seven new CCC Council members have joined us for the start of their three year terms: **Sujata Banerjee** (VMware), **Elisa Bertino** (Purdue University), **Tom Conte** (Georgia Tech), **Maria Gini** (University of Minnesota), **Chad Jenkins** (University of Michigan), **Melanie**

Mitchell (Portland State University), and **Katie Siek** (Indiana University).

The CCC and CRA thank those council members whose terms ended on June 30th for their exceptional dedication and service to the CCC and to the broader computing research community:

- **Kevin Fu**, University of Michigan
- **Sampath Kannan**, University of Pennsylvania
- **Maja Mataric**, The University of Southern California
- **Nina Mishra**, Amazon

- **Beth Mynatt**, Georgia Tech
- **Holly Rushmeier**, Yale University

The CCC Council is comprised of 20 members who have expertise in diverse areas of computing. They are instrumental in leading CCC's visioning programs, which help create and enable visions for future computing research. Members serve staggered three-year terms that rotate every July. New members are added every July following an open nomination process conducted by a subcommittee of the CCC with oversight by CRA and NSF. Learn more about the nomination process and what CCC Council members do [here](#).

Evolving Academia/Industry Relations in Computing Research

By CCC Staff and Ben Zorn, Microsoft Research



Recently, the **Computing Community Consortium (CCC)** released a new industry report called the *Evolving Academia/Industry Relations in Computing Research*, which was organized by **Ben Zorn** from **Microsoft Research** and chair of the **CCC Industry Working Group**.

The working group started in 2018 with a mission to see if the environment described by the 2015 CCC industry round table report called *The Future of Computing Research: Industry-Academic Collaborations* had changed at all. Turns out it has and a lot! Since then several important trends in computing research have emerged. This new report considers how these trends impact the interaction between academia and industry in computing fields.

The working group interviewed individuals including deans, CS department chairs, CS faculty, individuals at start-ups and large companies. They released an interim report and then a **final report to inform the community**. They reached the following conclusions:

- In certain computing disciplines, such as currently artificial intelligence, we observe significant increases in the level of interaction between professors and companies, which take the form of extended joint appointments.
- Increasingly, companies are highly motivated to engage both professors and graduate students working in specific technical areas because companies view computing research and technical talent as a core aspect of their business success.
- There is also the further potential for principles and values from the academy (e.g., ethics, human-centered approaches, etc.) informing products and R&D roadmaps in new ways through these unique joint arrangements.
- This increasing connection between faculty, students, and companies has the potential to change (either positively or negatively) numerous things, including:
 - » The academic culture in computing research universities
 - » The research topics that faculty and students pursue

- » The ability to solve bigger problems with bigger impact than what academia can do alone
- » The ability of universities to train undergraduate and graduate students
- » How companies and universities cooperate, share, and interact

This report is the first step in engaging the broader computing research community, raising awareness of the opportunities, complexities and challenges of this trend but further work is required. We recommend follow-up to measure the degree and impact of this trend and to establish best practices that are shared widely among computing research institutions.

Ben Zorn presented the report to the Computing Research Association (CRA) board of directors and received a strong positive response. Ben recommended that follow-up is required by an organization like the CRA so that:

- Trends are more systematically documented and understood
- Best practices and experiences are documented and shared between universities for greater leverage
- Students, professors, university administrators, and company officials are made aware of these changes so that they can plan accordingly

The board was excited about the work and the potential next steps as they begin to look into this area.

Why Do Undergraduate and Graduate Students Choose Computing?



CERP

Computing Research Association
Evaluation

By *Burçin Tamer, Director of CERP*

I chose a degree program in computing because ...

Undergraduate Students



Graduate Students



Note: Students were given the list of reasons shown above and asked to select up to 3. Graduate students had 2 additional options. As a result, the percentage values cannot be compared between the two groups.

Source: Data Buddies Survey (DBS) 2018, Center for Evaluating the Research Pipeline, Computing Research Association

This graphic shows the percentage of undergraduate and graduate students who selected each of the reasons for enrolling in a computing degree program. The most frequently selected reason for both undergraduate (79%) and graduate students (74%) is their interest in learning about the field of computing. Interestingly, the relative rankings of reasons that both groups selected are similar overall. A promising job market was in the top three most frequently selected reasons for choosing a computing degree program for both groups. Similarly, making an impact on society was also ranked highly by both undergraduate and graduate students. On the other hand, influence of friends and family were the least frequently selected reasons for both groups. One notable exception to the similarities in the ranking of the reasons is the relative importance of faculty on graduate students' interest in a computing degree program compared to that on undergraduate students.

These data indicate that interest in the field, job prospects, and a desire to make an impact on the society are the most common reasons for why students choose to enroll in a computing degree program at both undergraduate and graduate level. An understanding of these factors can not only help departments' recruitment efforts but also guide strategies for student retention. Further, despite being selected by only 13% of all graduate students, the higher ranking of the influence of faculty by graduate students compared undergraduates suggest that role models and mentorship may play an important role in recruiting students to graduate degree programs in computing.

Notes:

The survey data used in this chart were collected during fall 2018 by CERP via the [Data Buddies Project](#). The sample includes 8,035 undergraduate and 3,058 graduate students in a computing degree program. Students were asked to select up to three reasons for why they chose to enroll in a computing major/degree program. Graduate students had two additional options. As a result, the percentage values cannot be compared between the two groups.

This analysis is brought to you by the CRA's Center for Evaluating the Research Pipeline (CERP). CERP provides social science research and comparative evaluation for the computing community. Subscribe to the CERP newsletter [here](#).

This material is based upon work supported by the National Science Foundation under grant numbers (CNS-1246649, CNS 1840724, DUE-1431112, and DUE 1821136). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Volunteer for the Annual Data Buddies Survey!



CERP

Computing Research Association
Evaluation

By CERP Staff

The annual CRA [Data Buddies Survey](#), managed by the Center for Evaluating the Research Pipeline (CERP), will be sent to more than 120 academic departments across the United States and Canada this coming October. Through this survey, CERP collects data from undergraduate and graduate students in computing-related degree programs (e.g., computer science, computer/software engineering, information technology, etc.).

Data collected through Data Buddies helps (a) inform the computing community about patterns related to academic persistence and retention and (b) bolster efforts to broaden participation in the field. One way CERP fulfills this goal is by publishing [monthly infographics in CRN](#).

Considerations for the level of effort from your department:

1. A person (faculty or administrative staff) from the department will need to send out approximately three emails over the course of 2-3 months: first to distribute the survey and two additional emails as reminders. No additional effort for recruitment is required but is encouraged to increase your students' response rates.
2. CERP prepares all materials for you (e.g., text for emails, survey links, outreach to IRB, etc.).
3. Data collection occurs on an annual basis, typically between October and January.

JOIN DATA BUDDIES

- ▶ Participation in the Data Buddies project is **FREE** and **EASY**!
- ▶ Data Buddies departments distribute a survey link to their students affiliated with their computing programs and classes. CERP does the rest!
- ▶ After each survey, departments receive a customized report comparing their students to students in similar institutions.

In exchange for your time, CERP provides you with a report that summarizes your students' data compared to similar institutions. Check out a [sample report here!](#)

Is your department a Data Buddy? If not, [sign-up by completing CERP's short form](#). Your department does not need to be a CRA member to join the project.

This message is brought to you by the CRA Center for Evaluating the Research Pipeline (CERP). CERP provides social science research and comparative evaluation for the computing community. Subscribe to the CERP newsletter [here](#) to keep up with the latest news from CERP.

Data Buddies Survey is supported by the National Science Foundation under grant numbers CNS-1246649, DUE-1431112, and DUE 1821136. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Expanding the Pipeline: Gender and Ethnic Differences in PhD Specialty Areas



CRA-W

Computing Research Association
Women

By Betsy Bizot, CRA Director of Statistics and Evaluation

This article examines gender and residency/ethnicity differences in PhD specialty areas as reported to the CRA Taulbee Survey from 2012-2018. The Taulbee Survey is conducted each fall and, among other questions, asks doctoral departments of Computer Science, Computer Engineering, and Information for data about each PhD they awarded in the previous academic year. The data on each new PhD includes gender, residency/race/ethnicity, and PhD specialty area. A total of 12,968 PhDs were awarded by Taulbee respondents during the 7 year period from 2012-2018. Of those, the specialty area was listed as Other or Unknown for 3,328. Those individuals are omitted from the analyses described

here; individuals where gender was not provided or where residency/ethnicity was listed as Unknown are not included in the analysis by that category.

Table I shows the list of specialty areas by gender. Each row lists the number and percent of women in that specialty area (that is, of all women PhD recipients, what percentage specialized in that area), the number and percent of men in the specialty area, and the total number and percent in that area. Proportion differences were tested for significance by z test; the table flags the areas where women are more likely to specialize and where men are.

Table I. Gender Differences in PhD Specialty Areas from Taulbee Survey 2012-2018.

Specialty Area	Female		Male		Total	
	N	%	N	%	N	%
Artificial Intelligence / Machine Learning	265	13.4	1211	14.6	1476	14.4
Computing Education	14	0.7	35	0.4	49	0.5
Databases / Information Retrieval	185	9.4*	620	7.5	805	7.8
Graphics / Visualization	96	4.9	567	6.8*	663	6.5
Hardware / Architecture	64	3.2	468	5.6*	532	5.2
High Performance Computing	50	2.5	293	3.5	343	3.3
Human-Computer Interaction	173	8.8*	312	3.8	485	4.7
Informatics: Biomedical/Other Science	109	5.5	374	4.5	483	4.7
Information Science	165	8.4*	163	2.0	328	3.2
Information Systems	49	2.5	183	2.2	232	2.3
Networks	145	7.3	748	9.0	893	8.7
Operating Systems	52	2.6	330	4.0*	382	3.7
Programming Languages / Compilers	42	2.1	375	4.5*	417	4.1
Robotics / Vision	79	4.0	462	5.6*	541	5.3
Scientific / Numerical Computing	27	1.4	131	1.6	158	1.5
Security / Information Assurance	99	5.0	537	6.5	636	6.2
Social Computing / CSCW	72	3.6*	149	1.8	221	2.2
Software Engineering	183	9.3	790	9.5	973	9.5
Theory and Algorithms	106	5.4	551	6.6	657	6.4
Total	1975	19.2	8299	80.8	10274	

* Proportion of this gender is significantly higher by z-test, $p < .01$



Expanding the Pipeline *(continued)*

Women are significantly more likely to specialize in Databases/ Information Retrieval, Human-Computer Interaction, Information Science, and Social Computing/Computer Supported Cooperative Work. Note that this does not necessarily mean that there are high numbers of women in these areas, just that the proportion

is relatively high compared to women's overall representation. The highest number of women is in Artificial Intelligence/ Machine Learning, but their representation in that area is not significantly different from men's.

Table 2. Residency/Ethnic Differences in PhD Specialty Areas, from Taulbee Survey 2012-2018.

Specialty Area	International		Domestic URM		Domestic Majority		Total	
	N	%	N	%	N	%	N	%
Artificial Intelligence / Machine Learning	754	13.3	27	8.4+	574	15.9**	1355	14.1
Computing Education	18	0.3	3	0.9	26	0.7**	47	0.5
Databases / Information Retrieval	491	8.7	24	7.5	215	5.9**	730	7.6
Graphics / Visualization	378	6.7	12	3.8	226	6.2	616	6.4
Hardware / Architecture	305	5.4	18	5.6	185	5.1	508	5.3
High Performance Computing	219	3.9	11	3.4	103	2.8**	333	3.5
Human-Computer Interaction	183	3.2	40	12.5*+	225	6.2**	448	4.7
Informatics: Biomedical/Other Science	272	4.8	19	5.9	171	4.7	462	4.8
Information Science	109	1.9	30	9.4*+	172	4.8**	311	3.2
Information Systems	135	2.4	7	2.2	69	1.9	211	2.2
Networks	617	10.9	12	3.8*	209	5.8**	838	8.7
Operating Systems	251	4.4	10	3.1	111	3.1**	372	3.9
Programming Languages / Compilers	202	3.6	9	2.8	173	4.8**	384	4.0
Robotics / Vision	298	5.3	11	3.4	210	5.8	519	5.4
Scientific / Numerical Computing	68	1.2	6	1.9	65	1.8	139	1.4
Security / Information Assurance	334	5.9	24	7.5	246	6.8	604	6.3
Social Computing / CSCW	108	1.9	10	3.1	93	2.6	211	2.2
Software Engineering	527	9.3	40	12.5	325	9.0	892	9.3
Theory and Algorithms	387	6.8	7	2.2*+	221	6.1	615	6.4
Total	5656	58.9	320	3.3	3619	37.7	9595	

Significance tests, all by pairwise z-test, p<.01

* Domestic URM significantly different from International

+ Domestic URM significantly different from Domestic Majority

** Domestic Majority significantly different from International



Expanding the Pipeline *(continued)*

Men are significantly more likely to specialize in Graphics/Visualization, Hardware/Architecture, Operating Systems, Programming Languages/Compilers, and Robotics/Vision.

For Table 2, which shows specialty areas by residency/ethnicity, new PhDs are divided into three categories: International students (those on temporary visas), Domestic Underrepresented Minority students (URM; includes citizens and permanent residents of race/ethnicity Native American or Alaskan Native, Black/African American, Hispanic, and Native Hawaiian or Pacific Islander), and Domestic Majority students (citizens and permanent residents who are Asian or white).

The significance of difference in proportions was tested pairwise three ways: Domestic URM vs. International, Domestic URM vs. Domestic Majority, and International vs. Domestic Majority. Entries in the table are flagged for significant differences. Domestic URMs are:

- Less likely than Domestic Majority to specialize in Artificial Intelligence

- More likely than either International or Domestic Majority to specialize in Human-Computer Interaction
- More likely than either International or Domestic Majority to specialize in Information Science
- Less likely than International to specialize in Networks
- Less likely than either International or Domestic Majority to specialize in Theory and Algorithms

Compared to International PhD recipients, Domestic Majority students were more likely to specialize in Artificial Intelligence/Machine Learning, Computing Education, Human-Computer Interaction, Information Science, and Programming Languages/Compilers; they were less likely to specialize in Databases/Information Retrieval, High Performance Computing, Networks, and Operating Systems.

The highest numbers of Domestic URM students were in the specialty areas of Human-Computer Interaction and Software Engineering. The highest numbers of Domestic Majority students were in Artificial Intelligence/Machine Learning and Software Engineering.

Encourage Early-Career Computing Professionals to Apply to Join the ACM Future of Computing Academy



By Bruce Shriver, ACM

ACM created the ACM Future of Computing Academy to engage and empower the next generation of computing professionals. The ACM FCA enables early-career researchers, practitioners, educators, and entrepreneurs of computing to develop a strong and influential voice towards addressing challenging issues facing ACM, the discipline, and the world at large. The FCA aspires to harness collective action to define and launch new ACM initiatives that will carry the world of computing into the future.



The ACM FCA presents its members with a unique opportunity to expand their networks beyond their immediate professional environments and work alongside other incredibly accomplished individuals from diverse domains of computing towards the shared goal of shaping the future.

We invite you to encourage outstanding and energetic early-career computing professionals to apply to join the FCA. More information, including a link to the online application, can be found at <https://www.acm.org/fca>. **The application deadline is August 23, 2019.**

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Column Editor

Expanding the Pipeline
Patty Lopez, Intel

Aarhus University

Call for Assistant Professors (tenure-track) or Associate Professors in Computer Science

The Department of Computer Science (www.cs.au.dk) at Aarhus University is looking for excellent and visionary tenure track Assistant Professors or Associate Professors to push the frontiers of Computer Science research.

Aarhus University - an international top-100 University - has made an ambitious strategic investment in a 5-year recruitment plan to radically expand the Department of Computer Science. Therefore, we seek researchers in all areas of computer science that are driven by excellence in research and have visions for the future digitization agenda.

If you want to join the department and collaborate with our world-class researchers please read more about the positions available and apply for the positions here:

<https://au.career.emply.com/en/ad/call-for-assistant-professors-tenure-track-or-associate-professors-in-computer-science/cbvy8s/en>

The position is open from December 1st 2019.

Deadline

2 September 2019

Arizona State University

Director and Professor

The School of Mathematical and Natural Sciences (SMNS) in the New College of Interdisciplinary Arts & Sciences at Arizona State University (ASU) invites applications for Director. This is an opportunity to take a leadership role in a rapidly growing School; one embedded in the truly interdisciplinary and innovative environment of New College.

A full description of the position and details on the application process may be found here: <https://newcollege.asu.edu/jobs>.

Deadline: August 16, 2019; if not filled, every two weeks thereafter until search is closed.

Arizona State University is a VEVRAA Federal Contractor and an Equal Opportunity / Affirmative Action Employer. All qualified applicants will be considered without regard to race, color, sex, religion, national origin, disability, protected veteran status, or any other basis protected by law. ASU's full non-discrimination statement (ACD 401) and Title IX policy are located at <https://www.asu.edu/aad/manuals/acd/acd401.html> and <https://www.asu.edu/titleIX>.

Boston University

Assistant Professor of Computational Linguistics

The Boston University Linguistics Department seeks a tenure-track

Assistant Professor of Computational Linguistics (for primary appointment in Linguistics, secondary appointment in or affiliation with Computer Science), beginning July 1, 2020, pending budgetary approval; to conduct research, teach courses in Computational Linguistics at introductory and advanced levels and in related areas (Linguistics, Computer Science), and advise at graduate and undergraduate levels. Should have excellent programming skills and experience in computational linguistic research. Experience in application of computational methods to field linguistics or analysis of understudied languages would be a plus.

Requirements include PhD in Linguistics (preferred) or Computer Science in hand by start date, with strong background in both fields, and demonstrated excellence in teaching, advising, and research. For further information: <http://ling.bu.edu/> and <http://www.bu.edu/cs>.

Application should be uploaded as individual PDF files through <https://academicjobsonline.org/ajo/jobs/14064>. Include 2-page cover letter plus separate statements about research, teaching, and diversity (describing past experience with and/or future plans for contributing to diversity and inclusion through research, teaching, and/or service), of not more than 2 pages each. Please also upload a CV, documentation of success in teaching (e.g., complete sets of teaching evaluations), and three selected publications. Three reference letters are to be uploaded by recommenders. For

full consideration, applications should be complete by October 20, 2019.

Boston University is an AAU institution with a rich tradition of inclusion and social justice. We are proud that we were the first American university to award a PhD to a woman (1877) and that Martin Luther King Jr. received his PhD here (1955). The Linguistics Program is committed to the College of Arts & Sciences Diversity and Inclusion Strategic Plan (<https://www.bu.edu/cas/about/diversity-inclusion/>) for building a diverse, inclusive, and accessible environment for all. Applications from women, minorities, and candidates from other underrepresented groups are strongly encouraged. Recognizing that diversity of experience deepens the intellectual endeavor, we are dedicated to increasing the participation of all talented students, including those from underrepresented groups, in the study of language and are particularly interested in scholars who can contribute to the diversity and inclusiveness of the academic community, at BU and beyond, through their research, teaching, and service.

We are an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability status, protected veteran status, or any other characteristic protected by law. We are a VEVRAA Federal Contractor.

Bowdoin College

2 Assistant Professor Positions in Computer Science

Bowdoin College's Computer Science Department invites applications for two tenure-track positions at the rank of Assistant Professor to begin fall 2020. We seek applications from all areas of computer science, including interdisciplinary fields that intersect computer science, such as work in any of the computational sciences, computational social sciences, or digital humanities. Areas such as Computer Science Education that complement faculty members' current research are encouraged, along with research that crosses disciplinary boundaries.

Computer Science at Bowdoin is a dynamic and highly regarded department that has seen significant growth over the last decade; it is the fifth largest major overall and second among the sciences. We have developed innovative courses that explore, for example, social networks in politics, ethical issues in computing, and access to cultural institutions for the visually impaired. In collaboration with the new Digital and Computational Studies Program, we have expanded the scope of what computation at Bowdoin comprises. In addition, the College has invested significant and on-going resources to increase the participation of women and persons of color in both the major and at national conferences. These efforts are being further strengthened by external grants, student initiatives, and alumni donations.

Bowdoin is a learning community that warmly welcomes people of all backgrounds. We encourage applications from candidates committed to the instruction and support of a diverse student population and from those who will enrich and contribute to the College's multifaceted diversity. We especially encourage women to apply. In your application materials, please address how your teaching, scholarship, and/or mentoring would support our commitment to diversity and inclusion.

Bowdoin is seeking a colleague with a strong commitment to research and a promise of long-term successful scholarly engagement as well as a dedication to teaching excellence in a liberal arts environment. The College offers opportunities for professional development, startup funding for research, and a fully-funded, year-long junior sabbatical leave (after three years of teaching and successful reappointment), and regular, generously funded, post-tenure sabbaticals. The teaching load is two courses per semester. The successful candidate will share with all members of the department responsibility for instructing introductory and intermediate level courses and teach advanced courses in their area of specialization. Department faculty are committed to providing research opportunities for undergraduate students; the successful candidate will be expected to mentor independent projects and to actively encourage student involvement in their research. A Ph.D. in computer science is expected by the time of appointment.

We recognize that recruiting and retaining faculty may involve considerations of spouses and domestic partners. To that end, where possible, the College will attempt to accommodate and respond creatively to the needs of partners and spouses of members of the faculty.

Bowdoin College accepts only electronic submissions. Please visit <https://careers.bowdoin.edu> to submit: 1) cover letter; 2) curriculum vitae; 3) statement of research plans; 4) statement describing teaching philosophy/experience; 5) statement describing contributions to diversity and inclusion; 6) names and contact information for three references who have agreed to provide letters of recommendation upon request. Review of applications will begin October 11, 2019.

Founded in 1794 on the Maine coast, Bowdoin is one of the oldest and most selective coeducational, residential liberal arts colleges in the country. Located in Brunswick, a 30-minute drive north of Portland, the College is in an area rich with natural beauty and year-round outdoor activities. Bowdoin's reputation rests on the excellence of its faculty and students, intimate size, strong sense of community, and commitment to diversity (32.7% students of color, 6% international students and approximately 15% first generation college students). Bowdoin College complies with applicable provisions of federal and state laws that prohibit unlawful discrimination in employment, admission, or access to its educational or extracurricular programs, activities, or

facilities based on race, color, ethnicity, ancestry and national origin, religion, sex, sexual orientation, gender identity and/or expression, age, marital status, place of birth, genetic predisposition, veteran status, or against qualified individuals with physical or mental disabilities on the basis of disability, or any other legally protected statuses. For further information about the College and our department, please visit our website: <http://www.bowdoin.edu>.

Brown University

Visiting Assistant Professor In Data Science

The Data Science Initiative (DSI) at Brown University invites applications for a visiting assistant professor position. The appointment will be for three years (subject to satisfactory performance) with the potential of switching to a renewable 3-year lecturer position afterwards. This position involves teaching two courses per year for our professional Master's program in Data Science: this program enrolls 35-45 students per year, and our courses are supported by teaching assistants (see our website [<https://www.brown.edu/initiatives/data-science/masters-degree>] for an overview of this program and a description of the relevant courses). Successful candidates will be expected to start in the fall of 2019. In selecting candidates, we will consider quality of teaching, evidence of effective teaching, and compatibility with at least two of

the courses DATA 1030, 1050, 2040, and 2080 offered in our Data Science Master's program. We will also consider potential for impact within and beyond Brown through teaching, research, outreach, or other professional activities, including engagement and inclusion of culturally diverse students and audiences, as appropriate for the candidate. Brown offers a vibrant community for both teaching and research, with data science research represented in many departments and centers.

Brown's Data Science Initiative sits at the intersection of these units and provides unique opportunities to engage with scholars across campus in data-science research and teaching. Our mission emphasizes the importance of understanding the societal impacts of data science. The DSI values diversity and inclusion as essential to achieving excellence.

Brown University is located in Providence, RI, close to Narragansett Bay, an hour from Boston and about three hours from New York City. Providence has been consistently rated among the Northeast's most livable cities and is home to diverse intellectual, artistic, and business communities.

Applications received by **June 14, 2019** will be guaranteed full consideration.

Applications and supporting documents should be submitted through Interfolio (<https://apply.interfolio.com/63166>). Please include: a cover letter, CV, 2 Letters of Recommendation (with one addressing teaching), and any additional supporting evidence of teaching effectiveness.

Carnegie Mellon University School of Computer Science

Faculty Hiring

The School of Computer Science consists of seven departments, spanning a wide range of topics in computer science and the application of computers to real-world systems. Faculty positions are specific to each department, though in certain cases, joint positions are also possible.

We are seeking tenure, research, and systems track faculty candidates with a strong interest in research, an earned Ph.D., and outstanding academic credentials. Candidates for tenure track appointments should also have a strong interest in graduate and undergraduate education.

We are also seeking teaching track faculty candidates. You should have a Ph.D. in Computer Science or a related computing discipline, a background of demonstrated excellence and dedication to teaching, the ability to collaborate with other faculty in a fast-paced environment, and must be prepared to teach in a wide variety of settings, including large undergraduate lecture courses and classes delivered in non-traditional formats.

Candidates with a commitment toward building an equitable and diverse scholarly community are particularly encouraged to apply. We are very interested in applications from candidates who have a demonstrated track record in mentoring and nurturing women and students from groups traditionally underrepresented in computer science.

We will begin accepting applications beginning September 3, 2019. To ensure full consideration of your application, please submit all materials no later than December 10, 2019. In your cover letter, please indicate clearly the department(s) you are applying to. You can learn more about our hiring plans and application instructions by visiting <http://www.cs.cmu.edu/employment-scs>.

For more information about the hiring priorities in a particular department, please visit a department site below:

Computational Biology Department:
<http://www.cbd.cmu.edu/tenure-track-faculty-positions/>

Computer Science Department:
<https://www.csd.cs.cmu.edu/careers/faculty-hiring>

Human-Computer Interaction Institute:
<https://hcii.cmu.edu/careers/list>

Institute for Software Research:
<http://www.isri.cmu.edu/jobs/index.html>

Language Technologies Institute:
<http://lti.cs.cmu.edu/news/lti-hiring>

Machine Learning Department: http://www.ml.cmu.edu/Faculty_Hiring.html

Robotics Institute: <http://ri.cmu.edu/about/hiring-faculty-positions/>

Please send email to faculty-search@cs.cmu.edu with any questions.

Carnegie Mellon University shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These

regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

Cleveland State University

*Multiple Tenure-Track Assistant
Professor Positions*

*Department of Electrical Engineering
and Computer Science
Washkewicz College of Engineering*

The Department of Electrical Engineering and Computer Science at Cleveland State University invites applications for multiple tenure-track assistant professor positions in Computer Science, to begin in January 2020 or August 2020. Applicants in all areas of Computer Science will be considered; applicants in the following areas are particularly encouraged: Machine Learning, Data Science, Robotics, Artificial Intelligence, Security, Programming Languages, High-performance Computing, and Parallel Computing. The department is particularly interested in candidates with demonstrated cross-disciplinary and collaborative research. Successful candidates should have completed their PhD in Computer Science, Computer

Engineering, or a closely related field by fall 2019.

Responsibility: The faculty hired in these positions will be expected to develop a strong, externally funded research program, supervise students, and actively participate in teaching at both the graduate and undergraduate levels.

Minimum Qualifications: Earned Ph. D in Computer Science, Computer Engineering, or a closely related engineering field.

Preferred Qualifications:

1. Excellent teaching and communication skills.
2. Established research experience related to a preferred area in Computer Science
3. Demonstration of inter-disciplinary research.
4. Ability to contribute through teaching and/or service to the diversity, cultural sensitivity, and excellence of the academic community.

For full consideration, applicants must submit a cover letter, curriculum vitae (including names of at least three professional references), teaching statement, and research statement through the Human Resources website: <http://hrjobs.csuohio.edu/postings/9726>. Review of applications will begin immediately. Applications completed by September 21, 2019 will receive full consideration for Spring 2020 and Fall 2020 hiring, respectively. Questions about the Computer Science program should be directed to search committee chair: Dr. Haodong Wang at hwang@eecs.csuohio.edu.

Hiring Range: Commensurate with education and experience; Competitive with market rates.

The Cleveland State University is a state-assisted metropolitan university in the city of Cleveland with approximately 17,000 students. The university is well-known for its interdisciplinary programs, enjoying partnerships with several industrial corporations and the NASA Glenn Research Center. The EECS Department provides a rigorous education in the principles of electrical engineering, computer engineering, and computer science, and is supplemented by practical experience and communication skills to transform students into well-rounded and competent, ready to go engineers. The department offers doctoral, master's and ABET-accredited bachelor's degrees, with over 500 bachelor's students, over 400 master's and doctoral students, 25 full-time faculty members, and over \$8 million in research funding. Additional information about the department is available at <http://www.csuohio.edu/eecs>.

Offer of employment is contingent on satisfactory completion of the University's verification of credentials and other information required by law and/or University policies or practices, including but not limited to a criminal background check. Hiring is contingent on maintaining existing levels of funding from the state of Ohio.

It is the policy of Cleveland State University to provide equal opportunity to all qualified applicants and employees without regard to

race, color, religion, sex, sexual orientation, gender identity and/or expression, national origin, age, protected veteran or disable status, or genetic information.

Columbia University

Lecturer - Computer and Data Systems

The Department of Computer Science at Columbia University in the City of New York invites applications for faculty at the rank of Lecturer in Discipline beginning in the 2019-20 or 2020-21 academic year. Lecturers in Discipline are full-time non-tenure-track faculty members whose primary responsibility is teaching. The Department of Computer Science is committed to hiring outstanding teachers to support the growing needs of its exceptionally strong undergraduate and graduate programs. Teaching responsibilities for lecturers include courses throughout the computer science curriculum, from introductory to graduate level courses, with a typical teaching load of two courses per semester.

This particular opportunity is to hire a lecturer with a broad expertise in computer and data systems. Priority for candidates with experience teaching courses such as database systems (data models, relational algebra, SQL, query execution), distributed systems (distributed programming models, failure remediation, consensus protocols), and/or operating systems. Ideal candidates should also have experience with scalable data processing and management systems, such as BigQuery/Redshift, Hadoop, Spark,

Tensorflow, as well as familiarity with fault tolerant system design, such as Google's Spanner, HDFS, Hbase, Cassandra, etc. Industry and/or private sector experience is welcomed but not required.

Applications should be submitted electronically at: <http://pa334.peopleadmin.com/postings/3340> and include the following: a cover letter, current CV, teaching statement, brief summary of research, and three letters of recommendation. At least two of the letters of recommendation must address teaching ability. Reviews of applications will begin on July 1st, 2019, and will continue until the positions are filled. Candidates must have a PhD or its professional equivalent by the starting date of the appointment. Part-time adjunct opportunities in this area of expertise may also be available.

Columbia University is an Equal Opportunity/Affirmative Action employer -- Disability/Veteran

Columbia University

Lecturer

The Department of Computer Science at Columbia University in the City of New York invites applications for faculty at the rank of Lecturer in Discipline beginning in the 2019-20 academic year. Lecturers in Discipline are full-time non-tenure-track faculty members whose primary responsibility is teaching. The Department of Computer Science is committed to hiring outstanding teachers

to support the growing needs of its exceptionally strong undergraduate and graduate programs. Teaching responsibilities for lecturers include courses throughout the computer science curriculum, from introductory to graduate level courses, with a typical teaching load of two courses per semester.

Applications should be submitted electronically at: <http://pa334.peopleadmin.com/postings/1713> and include the following: a cover letter, current CV, teaching statement, brief summary of research, and three letters of recommendation. At least two of the letters of recommendation must address teaching ability. Reviews of applications are ongoing until the positions are filled. Candidates must have a PhD or its professional equivalent by the starting date of the appointment.

Columbia University is an Equal Opportunity/Affirmative Action employer -- Disability/Veteran

Cornell University

Assistant/Associate Professor, Cornell University/Computational Biology

Position description: The Department of Computational Biology at Cornell University invites applications for a tenure-track position at the Assistant or Associate Professor level in the area of Computational Biology, with an emphasis in population genomics, comparative genomics and/or functional genomics. The position will have responsibilities 70% in

research and 30% in teaching on a 9-month academic year basis. Applicants will be expected to focus on developing and applying rigorous computational methods to large-scale data analysis in population, comparative, or functional genomics and will play a central role in the department's program in research and teaching.

Qualifications: A PhD in computational biology, computer science, computational statistics, or a related field and a primary interest in understanding biological phenomena through the development and use of computational and statistical methods. Postdoctoral experience with a demonstrated record of productivity is required. Outstanding applicants in all areas of computational biology will be considered, but research areas of special interest include comparative and population genomics; functional genomics; gene regulation; modeling dynamic cellular processes; and networks in biological systems.

Applications and Starting Date:

Anticipated starting date is August 15, 2020 or as negotiated. Candidates should submit a cover letter, curriculum vitae, research and teaching statements, statement of diversity, equity, and inclusion and arrange to have three reference letters submitted to Academic Jobs Online at <https://academicjobsonline.org/ajo/jobs/14054>. Inquiries may be sent to Andrew Clark, Search Committee Chair, ac347@cornell.edu. Initial screening of applications will begin September 1, 2019 and continue until the position is filled.

Opportunity: The new faculty member will join a collaborative, interdisciplinary community on the main campus in Ithaca, New York. Cornell University is an innovative Ivy League university and a great place to work. Our inclusive community of scholars, students and staff impart an uncommon sense of larger purpose and contribute creative ideas to further the university's mission of teaching, discovery and engagement.

Cornell University seeks to meet the needs of dual career couples, has a Dual Career program and is a member of the Upstate New York Higher Education Recruitment Consortium to assist with dual career searches. Visit <http://www.unyherc.org> to see positions available in higher education in the upstate New York area.

The Cornell community embraces diversity and inclusion. We value AA/EEO, Protected Veterans and Individuals with Disabilities, and seek candidates who will create a climate that attracts persons of all races, ethnicities and genders.

Dartmouth College

Postdoctoral Research Associate

The machine learning lab in the department of computer science in collaboration with the department of government at Dartmouth College are looking for a talented and independent postdoctoral associate to work on a sponsored research project in the area of computational political science. Background in applied machine learning

and natural language processing is required. Expertise in collecting and working with noisy data from social media is preferred. Interest in politics is preferred but not required. The candidate must have a strong track record of publication.

The position can be either full-time for one year or half-time for two years. The position is fully-funded and comes with attractive benefits. The postdoc will have considerable autonomy and can be based either at Dartmouth College or can work remotely with occasional funded visits to the campus. The preferred start date for the position is September 1, 2019, but this is negotiable.

To apply (or other inquiries regarding the position) please email your CV to dartmouthcompolsci@gmail.com

DePaul University

Postdoctoral Research Associate

The Data Systems and Optimization Lab (DSL) in the School of Computing, College of Computing and Digital Media at DePaul University are looking for talented and motivated postdoctoral fellows. Researchers in data-intensive computing, high-performance computing or any relevant data and computational science discipline, and who have received



INDIANA UNIVERSITY
**SCHOOL OF
INFORMATICS, COMPUTING,
AND ENGINEERING**

**Postdoctoral Fellow
Center for Complex Networks and Systems Research
Indiana University, Bloomington**

The School of Informatics, Computing, & Engineering has one open Postdoctoral position to conduct an investigation of the structure and evolution of scientific enterprise using network science and machine learning (e.g. graph embedding). This non-tenure track appointment starts in September 2019 for one year, with the possibility of additional years of extension, subject to funding and performance. The salary is competitive and benefits are generous.

The postdoc will join a dynamic and interdisciplinary team and tackle fundamental questions at the intersection of Science of Science, Machine Learning, and Network Science. The postdoc will work with Profs. Yong-Yeol Ahn, Staša Milojević, Alessandro Flammini, and Filippo Menczer at Indiana University, in collaboration with the IU Network Science Institute.

Qualifications: A PhD in relevant discipline is required (Computer Science, Physics, Mathematics, or a related field). The ideal candidate will have strong computational and statistical skills, a strong track record of publication and collaboration, and experience and competence in managing and analyzing large datasets. Expertise in Machine Learning and/or Network Science will be particularly valued. Domain expertise in Science of Science will also be highly valued, but not strictly required. We strongly encourage applications from minorities.

Rank: Postdoctoral Fellow (RSP)

Apply Online at: <https://indiana.peopleadmin.com/postings/7833>

Special Instructions: Interested applicants should upload a letter of interest, CV, writing sample and contact information for three professional references using above application link.

Questions may be sent to: Dr. YY Ahn at yahn+job@iu.edu. Information about the Center for Complex Networks and Systems Research (cnets.indiana.edu), IUNI (iuni.iu.edu), and the School of Informatics, Computing, and Engineering (sice.indiana.edu) can be found online.

For Best Consideration Apply By: July 28, 2019

Ideal Start Date for position: September 1, 2019 (negotiable)

Indiana University is an equal employment and affirmative action employer and a provider of ADA services. All qualified applicants will receive consideration for employment without regard to age, ethnicity, color, race, religion, sex, sexual orientation, gender identity or expression, genetic information, marital status, national origin, disability status or protected veteran status.

their Ph.D. within the last three years are encouraged to apply. The successful applicant will receive a competitive salary, commensurate with the Chicago area, and excellent benefits.

This post-doctoral position will be in the broad areas of graph data management, data provenance/lineage, and scientific data management. The objective will be to create new ways of capturing, tracking and making understandable large-scale, distributed scientific experiments. The focus will be on scientific experiments that employ finite-element models, large-scale distributed/high-performance computing infrastructure, and are in general challenging to reproduce. Seeking candidates with strong experience in C/C++ and operating system internals. A multi-disciplinary advisory team will guide the project, offering advice, facilities, and potential opportunities for travel, teacher training, and research dissemination.

To apply please email your CV and a Research Statement to scidataspace@gmail.com.

The Jackson Laboratory

Research Assistant III / Computational Scientist / Postdoctoral Associate

The Ucar laboratory at The Jackson Laboratory for Genomic Medicine in Farmington, CT is seeking outstanding individuals to join our team to work at the intersection of Computational Biology and Immunology to perform analyses and develop methods to drive forward our understanding of how immune system

and immune responses are changing with age in human and mice. For this, we generate state-of-the-art genomics data (ATAC-seq, CITE-seq) from primary human cells and develop computational methods to analyze and integrate these data. More information can be found at: <https://www.ucarlab.com/>

You will work closely with an interdisciplinary team of scientists including clinical and immunologist collaborators as we continue to build systems immunology pipelines and use them in exciting and novel ways. Your work will focus on age and sex-related variation in the immune system and in immune responses. We are currently seeking scientists of all levels.

Please visit <https://careers-jax.icims.com/jobs/search?ss=I&searchKeyword=ucar> to see a complete listing of all positions available within The Ucar Laboratory.

Lawrence Berkeley National Laboratory

Associate Laboratory Director for Computing Sciences Area

Berkeley Lab has an exceptional opportunity for a visionary leader to serve as the Associate Laboratory Director (ALD) for our Computing Sciences Area, which is comprised of two national user facilities - the National Energy Research Scientific Computing Center (NERSC) and the Energy Sciences Network (ESnet) - and the Computational Research Division. The ALD is responsible for providing leadership, stewardship and strategic vision for the

Area, which receives over \$200 million of funding to support world-class research programs in applied mathematics, data science, computational science, and the operations and upgrades of the ESnet and NERSC. They are the primary contact for DOE Office of Advanced Scientific Computing Research, act as a liaison to external agencies and national laboratories, promote partnerships with academia and industry, and guide the development of externally sponsored research projects. The ALD is also a key member of the Laboratory's Senior Leadership Team, providing advice, counsel, and insight on the formulation and execution of Berkeley Lab's strategic priorities and initiatives.

For more information, please visit: <http://50.73.55.13/counter.php?id=162739>

Massachusetts Institute of Technology (MIT)

Alliance Program Manager

Cambridge, MA

The MIT Quest for Intelligence seeks a program manager to facilitate and manage engagement with current and prospective Quest research sponsors, including the pre- and post-award process, full cycle relationship management, working with the MIT Technology Licensing Office to track intellectual property (IP) rights granted under all of the Quest programs, and providing advice and guidance to Quest leadership on matters related to funding portfolio.

Requirements: Bachelor's degree in related technical field or management; five years' experience in science and/or a technical industry; experience developing and tracking large, complex projects; and cultural sensitivity when dealing with international counterparts.

For additional information about and/or to apply for the position, please visit <https://hr.mit.edu/careers> and search using job ID number **17333**.

MIT is an equal employment opportunity employer. All qualified applicants will receive consideration for employment and will not be discriminated against on the basis of race, color, sex, sexual orientation, gender identity, religion, disability, age, genetic information, veteran status, ancestry, or national or ethnic origin.

McGill University

Faculty Lecturer Position

The School of Computer Science at McGill University invites applications for an appointment as Faculty Lecturer. Candidates must have at least a graduate degree in Computer Science or related discipline, and demonstrated excellence in teaching computer science at the university level. Candidates with a PhD will be prioritized. Salary will be commensurate with qualifications. The initial appointment is for 3 years with the possibility of re-appointment. Reappointment is conditional on performance. Reappointment after 6

years of continuous employment in the same Faculty is for an indefinite term.

The School is looking for candidates who are able to teach a wide range of 1st and 2nd year computer science courses, and ideally have expertise in one of our priority areas. These cover the larger area of systems (e.g., operating systems, database systems, networks), algorithms and programming languages.

The successful candidate must be committed to excellence in undergraduate teaching, and is expected to actively participate in the School's activities around undergraduate teaching, such as, e.g., academic program development, innovation in teaching, course administration, engagement and liaison with our very active undergraduate student body, advising, mentoring or others.

Montreal is a historic and cosmopolitan city, and considered one of the best cities for students. The School of Computer Science offers a collegial environment with opportunities for interaction with world-class researchers that take their teaching responsibilities very seriously. The School teaches to a very diverse student body and embraces inclusiveness. The percentage of women in our programs is one of the highest in Canada. Introductory courses are open to students across campus, and the School offers a wide set of different programs, including majors, specializations, honours and several joint programs, both in the Faculty of Science and the Faculty of Arts.

For more information and to submit your application, see: <https://www.cs.mcgill.ca/about/careers/> The selection process will begin by July 1, 2019, but we accept applications until the position is filled.

COMMITMENT TO EQUITY AND DIVERSITY
McGill University hires on the basis of merit and is strongly committed to equity and diversity within its community. We welcome and encourage applications from racialized persons/visible minorities, women, Indigenous persons, persons with disabilities, ethnic minorities, and persons of minority sexual orientations and gender identities, as well as from all qualified candidates with the skills and knowledge to productively engage with diverse communities.

McGill further recognizes and fairly considers the impact of leaves (e.g., family care or health-related) that may contribute to career interruptions or slowdowns. Candidates are encouraged to signal any leave that affected productivity, may have had an effect on their career path. This information will be considered to ensure the equitable assessment of the candidate's record.

McGill implements an employment equity program and encourages members of designated equity groups to self-identify. It further seeks to ensure the equitable treatment and full inclusion of persons with disabilities by striving for the implementation of universal design principles transversally, across all facets of the University community, and through accommodation policies and procedures. Persons with disabilities who anticipate

needing accommodations for any part of the application process may contact, in confidence, Professor Angela Campbell, Associate Provost (Equity and Academic Policies) by email or phone at 514-398-1660.

All qualified applicants are encouraged to apply; however, in accordance with Canadian immigration requirements, Canadians and permanent residents will be given priority.

McMaster University

Tenure-Track Faculty Positions, Computing and Software

The Faculty of Engineering at McMaster University invites applications from outstanding scholars for multiple tenure-track faculty positions at the rank of Assistant Professor in the Department of Computing and Software; however, exceptional candidates may be considered at the rank of Associate Professor. The appointment will begin on July 1, 2020, or shortly thereafter.

McMaster University is committed to building an inclusive community dedicated to teaching and learning within a diverse environment. The Faculty of Engineering seeks to attract active, culturally and academically diverse faculty members of the highest caliber and welcomes applications from highly qualified candidates with skills and abilities that will contribute to the values of equity, diversity and inclusion in research, teaching, and the workplace.

The Department of Computing and Software is one of the top departments

for computing in Canada. We have 25 faculty members with expertise in computer systems, software engineering, theoretical computer science, security, privacy, data analytics, scientific computing, and bioinformatics. The department mentors over 900 undergraduate students in three programs: software engineering, computer science, and mechatronics engineering. It also mentors more than 120 graduate students in masters and doctoral programs in computer science and software engineering.

Qualified candidates in the following areas are strongly encouraged to apply: machine learning and its applications, smart systems, data analytics, security and privacy, and software engineering. Exceptional candidates in related areas will also be considered. Applicants will hold a doctorate in computer science, software engineering, or a related discipline, and must demonstrate a successful record of research, reflected in extramural grant acquisition and publication in high quality peer-reviewed venues. The successful candidate will teach both undergraduate and graduate level courses. They will also be expected to establish a strong externally-funded research program, supervise graduate students, and foster existing or new collaborations with other departments and faculties. Evidence of leadership skills, excellence in service, and a demonstrated ability to work effectively with individuals from diverse communities and cultures is also required. Registration, or eligibility for registration, by the Professional Engineers of Ontario is required

The successful candidates will have the opportunity to engage with faculty members and research staff associated with McMaster's world-class research and teaching laboratory facilities in software and data intensive systems and data analytics areas, including: the McMaster Centre for Software Certification (McSCert), the McMaster Automotive Resource Centre (MARC), the Shared Hierarchical Academic Research Computing Network (SharcNet), Advanced Optimization Laboratory (AdvOL), Computing Infrastructure Research Centre (CIRC), and the MacData Institute.

McMaster's large, attractive campus, the interior of which is open only to pedestrians and cyclists, is at the western end of Lake Ontario. The University is minutes from downtown Hamilton, a city rich in history and culture with a vibrant arts community. Nearby recreational and conservation attractions include Cootes Paradise, the Bruce Trail, the Niagara Escarpment, the Waterfront Trail, and the Royal Botanical Gardens. Surrounded by spectacular nature and unique neighbourhoods, Hamilton is ideally located halfway between Toronto and Niagara Falls.

The Faculty of Engineering at McMaster University has a reputation for innovative programs, cutting-edge research, leading faculty, and aspiring students. It has earned a strong reputation as a centre for academic excellence and innovation. The Faculty has over 180 faculty members, along with approximately 5,000 undergraduate and 1,000 graduate students. The Faculty of Engineering

promotes a nurturing and inclusive environment where supportive resources are made accessible to assist with onboarding and opportunities are made available for continuous personal and professional growth.

Interested applicants should submit a letter of interest, curriculum vitae, a research dossier that includes a statement of research interests and plans, a selection of research publications, a teaching dossier that includes a teaching philosophy, as well as evidence of teaching experience and effectiveness, along with the names of at least four references that speak to academic and research performance (with postal and email addresses). In both your research and teaching statements, please also describe how you will further equity and inclusion to advance McMaster University's commitment to fostering a culture that embraces and promotes the rich diversity of our campus community. Some current examples of activities include diversity-related programming, contributions to student success, committee work, and appropriate mentoring of individuals, especially those from groups that have been historically marginalized or disadvantaged.

Complete applications must be made online at www.workingatmcmaster.ca/careers (Faculty Postings, Job # 26584) to the attention of:

Chair
Department of Computing and Software
1280 Main Street West
McMaster University,
Hamilton, ON Canada L8S 4L7

Complete applications that are received by September 1, 2019 will receive full consideration. Review of applications will continue until the positions are filled. The effective date of appointment is negotiable, but July 1, 2020 is preferred. All applicants will receive an on-line confirmation of receipt of their application; however, only short-listed applicants will be contacted for interviews.

All qualified candidates are encouraged to apply; however, Canadian and Permanent Residents will be given priority. If you require any form of accommodation throughout the recruitment and selection procedure, please contact the Human Resources Service Centre at 905 525 9140 ext. 222 HR (22247).

To comply with the Government of Canada's reporting requirements, the University is obliged to gather information about applicants' status as either Permanent Residents of Canada or Canadian citizens. Applicants need not identify their country of origin or current citizenship; however, all applications must include one of the following statements:

Yes, I am a citizen or permanent resident of Canada

No, I am not a citizen or permanent resident of Canada

In keeping with its Statement on Building an Inclusive Community with a Shared Purpose, McMaster University strives to embody the values of respect, collaboration and diversity, and has a strong commitment to employment

equity. The diversity of our workforce is at the core of our innovation and creativity and strengthens our research and teaching excellence. The University seeks qualified candidates who share our commitment to equity, diversity, and inclusion. While all qualified candidates are invited to apply, we particularly welcome applications from women, persons with disabilities, First Nations, Métis and Inuit peoples, members of visible minorities, and LGBTQ+ persons. Job applicants requiring accommodations to participate in the hiring process should contact the Human Resources Service Centre at 905-525-9140 ext. 222-HR (22247) to communicate accommodation needs.

National University of Singapore

Sung Kah Kay Assistant Professor in All Areas of Computer Science

The Department of Computer Science at the National University of Singapore (NUS) invites applications for the Sung Kah Kay Assistant Professorship. Applicants can be in any area of computer science. This prestigious chair position was set up by the family and friends of the late Assistant Professor Sung Kah Kay after his untimely demise early in his career at NUS. Candidates should be early in their academic careers and yet demonstrate outstanding research potential, and a strong commitment to teaching.

The Department enjoys ample research funding, moderate teaching loads, excellent

facilities, and extensive international collaborations. We have a full range of faculty covering all major research areas in computer science and boasts a thriving PhD program that attracts the brightest students from the region and beyond. More information is available at

www.comp.nus.edu.sg/careers

NUS is an equal opportunity employer that offers highly competitive salaries, and is situated in Singapore, an English-speaking cosmopolitan city that is a melting pot of many cultures, both the east and the west. Singapore offers high-quality education and healthcare at all levels, as well as very low tax rates.

Application Details:

- Submit the following documents (in a single PDF) online via: <https://faces.comp.nus.edu.sg>
 - » A cover letter that indicates the position applied for and the main research interests
 - » Curriculum Vitae
 - » A teaching statement
 - » A research statement
- Provide the contact information of 3 referees when submitting your online application, or, arrange for at least 3 references to be sent directly to csrec@comp.nus.edu.sg
- Application reviews will commence immediately. We hope to fill the position by January 2020
- If you have further enquiries, please contact the Search Committee

Chair, Weng-Fai Wong, at csrec@comp.nus.edu.sg

NEC Labs America

Researcher - Computer Vision and Machine Learning

The Media Analytics Department of **NEC Laboratories America, Inc.** is seeking outstanding researchers with backgrounds in computer vision, machine learning or robotics. Candidates must possess an exceptional track record of original research and passion to create high impact products. Our researchers are expected to establish worldwide leadership in their communities.

NEC Labs provides a vibrant research environment to produce strong research results. We extensively publish high-impact papers at top-tier venues such as CVPR or NIPS. Our two key research directions are visual recognition and 3D scene understanding, with applications such as face recognition or self-driving. We provide ample opportunities to demonstrate applications of our research and express your vision, for example, by building a self-driving platform from scratch.

We are located in San Jose, with very competitive pay and benefits. We have a strong internship program and active collaborations with academia. To check out our latest work, please visit:

<http://bit.ly/2o5gSJ4>.

Required Skills or Experiences:

- PhD in Computer Science (or equivalent)

- Strong publication record at top-tier computer vision or machine learning venues
- Solid foundations in applied mathematics, optimization and statistical inference
- Motivation to conduct independent research from conception to implementation
- Programming skills in Python, C or C++

For more information about NEC Labs, please access www.nec-labs.com. Submit your CV and research statement through our career center at https://www.appone.com/MainInfoReq.asp?R_ID=2454961.

Equal Opportunity Employer

New College of Florida

Professor of Computer Science

New College of Florida invites applications for a tenure-track Professor of Computer Science (rank open) starting potentially as soon as August 2019. We seek an individual to contribute to an innovative and growing computer science program in a liberal arts context. We welcome applications in all specialties, especially Artificial Intelligence, Systems, or Graphics. The teaching load is two classes per semester, plus supervision of tutorials, independent study projects, and senior theses.

Review of completed applications will begin immediately and continue until the position is filled.

NCF is an EEO employer.

www.ncf.edu/employment

Occidental College

*Department of Computer Science
Tenure-line Computational Scientist*

Come join a growing computer science department! Occidental College, located in Los Angeles, is a four-year liberal arts college that emphasizes interdisciplinary connections and community engagement. In our two-year-old computer science department, our majors are over 50% women, over 20% students of color, and over 35% Pell-eligible students, demonstrating our commitment to access and excellence.

Applicants should have a Ph.D. in Computer Science or a related computational field and a strong commitment to educating undergraduates through teaching and research. The successful candidate is expected to:

1. teach introductory and advanced courses in computer science;
2. offer additional courses in computer science to enhance our current offerings;
3. develop a rigorous research program involving undergraduates;
4. advise students across the College who may be interested in computing;
5. teach in the freshman cultural studies program;
6. participate in regular service to the community, department, and the College.

See the full job posting here: www.oxy.edu/computer-science-faculty-position

Santa Clara University

Tenure-Track Assistant Professors

The Department of Computer Science & Engineering at Santa Clara University invites applications for two tenure-track Assistant Professor positions starting in the 2020-2021 academic year. To complement expertise of current faculty, address areas of strong interest to students, and enhance collaboration opportunities with local industries, the department is particularly interested in candidates with specializations in software engineering, programming languages, HCI, machine learning, visualization (AR/VR), and database systems. However, Silicon Valley is an area of broad and ever-changing technical interests and needs, and strong candidates will be seriously considered regardless of area of specialization.

Santa Clara University (<https://www.scu.edu>) is a comprehensive Jesuit, Catholic university, located in the heart of Silicon Valley. Distinguished by the highest retention rate and has been ranked first among all master's universities in the West by U.S. News and World Report, Santa Clara University is now elevated to a new category in national rankings, "Doctoral/Professional Universities." Santa Clara University is California's oldest operating institution of higher-education. The School of Engineering is committed to improving the human condition through engineering education, practice, and scholarship, promoting the University's mission

to 'fashion a more humane, just and sustainable world.'

SCU maintains small class sizes and promotes close faculty/student interaction. The University enrollment is approximately 5,500 undergraduate and 3,700 graduate students. The Department (<http://www.scu.edu/engineering/cse/>) offers B.S., M.S. and Ph.D. degrees, with 22 full-time faculty, and a strong pool of approximately 25 part-time adjunct faculty who instruct about 400 undergraduate majors, and about 500 part-time and full-time graduate (M.S. and Ph.D.) majors. The School of Engineering maintains strong ties to local industry.

Applicants must hold a doctorate in computer science, computer engineering, or in a closely related field; have demonstrated a strong potential for high-quality research in computing; and have a strong commitment and ability to teach at both the undergraduate and graduate levels. The full-time teaching load is nominally seven quarter-level courses per academic year (each quarter is 10 weeks excluding the final exams week), but a one course release is given to faculty actively involved in research and course credit is also given for project, thesis, and laboratory supervision. Limited course buyout may be approved using external grant funds.

The proposed start date is September 1, 2020.

Applicants should submit detailed CVs, statements of research interests, statements of teaching interests, and

names and contact information of three professional references. All materials should be submitted online at <https://jobs.scu.edu/postings/8936>.

Review of applications will begin upon receipt and complete application packets received by November 1, 2019 will receive full consideration. However, the search will remain open until the position is filled.

EEO / AA Policy:

Santa Clara University is an Equal Opportunity/Affirmative Action employer, committed to excellence through diversity and inclusion, and, in this spirit, particularly welcomes applications from women, persons of color, and members of historically underrepresented groups. All qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, sex, sexual orientation, gender identity or expression, age, status as a protected veteran, status as a qualified individual with a disability, or other protected category in accordance with applicable law. The University will provide reasonable accommodations to individuals with a disability.

Santa Clara University annually collects information about campus crimes and other reportable incidents in accordance with the federal Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act. To view the Santa Clara University report, please go to the Campus Safety Services website at <https://university-operations.scu.edu/campus-safety/crime-reporting>.

To request a paper copy please call Campus Safety at (408) 554-4441. The report includes the type of crime, venue, and number of occurrences.

Seton Hall University

Data Scientist Contract Faculty

The Department of Mathematics and Computer Science at Seton Hall University invites applications for a full-time term faculty position in data science/machine learning to start in August 2019, with an annual term and renewable up to three years. The Department offers a new online M.S. program in Data Science, undergraduate majors in Computer Science and in Mathematics, minors in both fields, an undergraduate and graduate certificate program (with the Department of Psychology) in Data Visualization and Analysis, and a certificate program in Cybersecurity.

Duties and Responsibilities:

- Teaching responsibilities will include M.S.-level and undergraduate data science courses (online and in-person). Specifically teaching Machine Learning and its applications, Data Mining and Data Visualization. The usual teaching load is eight courses per year (four courses per semester). Since the M.S. program runs year-long, one course will be scheduled during the summer sessions. During the first year, the teaching load is reduced to five courses to allow for online course development.

- Online course development responsibilities will include developing an M.S.-level course in Machine Learning (ML), an undergraduate version of the ML course, and a special topics course in Data Science/ML.
- Participate in University, College of Arts & Science, and Departmental activities including the departmental seminar.
- Applicants must understand and be willing to support the Seton Hall University Catholic mission.

Required Qualifications:

- Ph.D. in Data Science, Computer Science or related fields.

Desired Qualifications:

- Teaching experience in machine learning is highly desired.
- Experience in teaching and/or developing online courses is desired, but not required.

Apply at:

<http://jobs.shu.edu/cw/en-us/job/493804/contract-faculty-department-of-mathematics-and-computer-science>

Simon Fraser University

Tier 2 Canada Research Chair (CRC) - Computer Security

Date Posted: May 8, 2019.

Simon Fraser University(SFU), located on unceded Coast Salish Territory - the traditional territories of the Squamish (Skw̓w̓ú7mesh Úxwumixw), Tsleil-Waututh, Musqueam (xʷməθkʷəy̓əm), and

Kwikwetlem First Nations, is actively building a diverse, inclusive community and invites applications for an NSERC Tier 2 Canada Research Chair (CRC) in Computer Security within the School of Computing Science. This CRC appointment opportunity is intended for emerging scholars at the rank of assistant or associate professor (or those who possess the necessary qualifications to be appointed to these levels).

We are seeking a candidate with a prominent international profile in the practical and/or theoretical aspects of computer and communications security and privacy. Areas of interest include but are not limited to, network security, blockchains and cryptocurrencies, forensics, vulnerability analysis, intrusion detection, privacy-preserving protocols, cloud security, and trust management. Candidates are expected to have an excellent research program with a strong publication record. Candidates with practical and interdisciplinary experience will be given a priority. Candidates with a commitment to the advancement of women and other underrepresented groups in computer science will be given priority. SFU requires a Ph.D. in computer science or related area.

This position is contingent upon the applicant receiving a Tier 2 Canada Research Chair. The position is subject to the availability of funding and to final approval by the University Board of Governors and the CRC Secretariat. The Canada Research Chair is tenable for five years and may be renewed once.

Tier 2 Chairs are intended for exceptional emerging scholars (i.e., candidate must have been an active researcher in their field for fewer than 10 years at the time of nomination). Applicants who are more than 10 years from their highest degree (and where career breaks exist, including maternity leave, extended sick leave, clinical training, etc.) may have their eligibility for a Tier 2 CRC assessed through the program's Tier 2 justification process. Please see the CRC website for eligibility, initial appointment, and chair renewal details at:

http://www.chairs-chaire.gc.ca/program-programme/nomination-mise_en_candidature-eng.aspx#s2

SFU is located in metropolitan Vancouver, one of the most livable cities in the world. The School of Computing Science has been consistently ranked among the top computer science departments in Canada and internationally. The School currently has 57 faculty members, 350 Ph.D. and M.Sc. students, and 2,000 undergraduate majors.

To apply, please submit your curriculum vitae, research and teaching statements, and the names and email addresses of four referees. Your research and teaching statements should include an outline of the proposed CRC research program over five years, an explanation of how the proposed research aligns with and advances *SFU's 2016-2020 Strategic Research Plan*, and a discussion of how this Chair would strengthen graduate training at SFU. Our online application system can be found at:

<http://www.sfu.ca/computing/about/job-opportunities.html>

The deadline for receiving the completed application is **October 1, 2019**. Any general inquiries regarding this posting or the Tier 2 justification process may be directed to Dr. Mohamed Hefeeda, the Director of the School of Computing Science mhefeeda@sfu.ca.

SFU recognizes that alternative career paths and/or career interruptions (e.g., maternity leave, leave due to illness) can impact research achievements and commits to ensuring that leaves are taken into careful consideration. Candidates are encouraged to highlight how alternative paths and/or interruptions have impacted them in their application. SFU also recognizes the value of mentoring and research training, outreach, professional service, and nontraditional areas of research and/or research outputs; demonstrated experience in increasing diversity in the previous institutional environment, and in the curriculum, is also an asset.

SFU is an institution whose strength is based on our shared commitments to diversity, equity, and inclusion. Diversity is an underlying principle of our Strategic Vision, which pledges SFU to "foster a culture of inclusion and mutual respect, celebrating the diversity reflected among its students, faculty, staff, and our community." SFU is committed to ensuring that no individual is denied access to employment opportunities for reasons unrelated to ability or qualifications. Consistent with this

principle, SFU will advance the interests of underrepresented members of the workforce, specifically Indigenous peoples, persons with disabilities, racialized persons, and women; embrace gender and sexual diversity; ensure that equal opportunity is afforded to all who seek employment at the University; and treat all employees equitably. Candidates that belong to underrepresented groups are particularly encouraged to apply.

SFU offers several benefits and services aimed at creating a more inclusive and accessible campus community for faculty, please see the Faculty Relations, Benefits and Service page for more details at:

<https://www.sfu.ca/faculty-relations/benefits-services.html>

SFU is also committed to ensuring that the application and interview process is accessible to all applicants; if you require accommodations or have questions about SFU benefits, services, accommodations policies, or equity considerations please contact the Director of Equity, Diversity, and Inclusion in Faculty Relations:

<https://www.sfu.ca/faculty-relations/contact.html>

Under the authority of the University Act, personal information that is required by the University Academic Appointment Competitions will be collected. For further details see the Collection Notice at:

http://www.sfu.ca/vpacademic/Faculty_Openings/Collection_Notice.html

Smith School of Business at Queen's University

Tenure-track Faculty Position in Management Analytics

Smith School of Business at Queen's University (Kingston, Ontario, Canada) invites applications for a tenure-stream position in Management Analytics (formerly, Management Science and Operations), with preference for entry (Assistant Professor) level, and with a preferred starting date of July 1, 2020. The position is flexible in focus, and can be oriented either toward more "classical" Operations Management and Management Science, or toward Machine Learning and Artificial Intelligence; scholars with all methodological and conceptual interests in the topics (e.g., Ethics in AI) are invited to apply.

Qualifications

Candidates must have a PhD, or be near completion. The successful candidate will exhibit strong potential for innovative and high quality scholarly research leading to top-tier peer-assessed publications, as well as for outstanding teaching contributions and an ongoing commitment to academic and pedagogical excellence, in support of the School's various public and private programs. The successful candidate will also be expected to make contributions through service to the School, the University, and/or the broader academic community.

Compensation

Salary will be commensurate with qualifications and experience. Appointees have access to substantial internal funds both for research and course development through Smith School of Business Research Program and our Faculty Development Fund. The School also provides faculty members with support in their applications to external research granting agencies such as the Social Sciences and Humanities (and/or Natural Sciences and Engineering) Research Councils of Canada, among others. Smith School of Business faculty members, including those in Management Analytics, have been quite successful with external research grant competitions.

Institution

Queen's University has a long and rich tradition of academic excellence, dating back to a royal charter granted by Queen Victoria in 1841. Smith School of Business is one of the world's premier business schools, with an outstanding reputation for innovation and quality. Our MSc and PhD programs in Management attract highly qualified research-oriented students in many fields of study. Our undergraduate Commerce program has among the highest entrance standards in Canada and is widely viewed as the country's best undergraduate business program. Queen's has gained international recognition for its MBA and executive education programs and is fully accredited by AACSB and EQUIS. Smith School of Business is also home to

centres focused on analytics, corporate governance, entrepreneurship and innovation, and social impact. The learning environment at Queen's is supported by outstanding library and computing facilities (e.g., <https://cac.queensu.ca/>) More information can be found at: <https://smith.queensu.ca/index.php>, and general information about our faculty members is here: https://smith.queensu.ca/faculty_and_research/index.php

Management Analytics group

The Management Analytics group (formerly, Management Science and Operations Management) is comprised of strong researchers with particular expertise in revenue management and pricing, sustainability, energy markets, supply chain management and the interface of operations and marketing. Group members hold top editorial board memberships and have won multiple prizes and awards.

The Management Analytics group is at the forefront of the Analytics/Big Data/AI revolution with a portfolio of highly successful programs delivered out of the Smith location in downtown Toronto. These include the highly regarded Masters in Management Analytics (MMA, https://smith.queensu.ca/grad_studies/mma/index.php), North America's first Masters in Management of Artificial Intelligence (MAI, https://smith.queensu.ca/grad_studies/mmai/index.php), delivered jointly with Geoffrey Hinton's Vector Institute for Artificial Intelligence (<https://vectorinstitute.ai>), and multiple Executive Education programs in Analytics.

The group is also actively involved in industry collaborations, primarily in financial services, through the Scotiabank Center for Customer Analytics, <https://smith.queensu.ca/centres/scotiabank/index.php>, and is otherwise tightly embedded in Toronto's booming Analytics/AI scene.

The Cit(ies)

Smith School of Business operates in two locations:

Our main campus is in Kingston, Ontario – a unique Canadian city of 125,000 with a distinct blend of history, recreation, industry and learning. Situated on the shores of Lake Ontario, Kingston offers unique waterfront living with many recreational and cultural opportunities. It is within a 2h train ride (~2.5-3h drive) to the commercial, industrial and political hubs of Toronto, Montreal, and the nation's capital, Ottawa, and a thirty-minute drive from the international bridge linking Ontario and upstate New York. The city is also the origin of the historic Rideau Canal system – a UNESCO International Heritage site. For more information please see: <https://www.cityofkingston.ca/explore/about-kingston>

Our second location is in downtown Toronto, where much of the Management Analytics group's activities take place. As demonstrated by various international rankings and reports, Toronto is one of the best cities in the world to live and work. For more information please see: <https://www.toronto.ca/city-government/data-research-maps/toronto-progress-portal/world-rankings-for-toronto/>

How to Apply

The effective date of the appointment will be July 01, 2020, but is flexible.

The University invites applications from all qualified individuals. Queen's is committed to employment equity and diversity in the workplace and welcomes applications from women, visible minorities, Aboriginal peoples, persons with disabilities, and LGBTQ persons. All qualified candidates are encouraged to apply; however, in accordance with Canadian immigration requirements, Canadian citizens and permanent residents of Canada will be given priority.

The University will provide support in its recruitment processes to applicants with disabilities, including accommodation that takes into account an applicant's accessibility needs. If you require accommodation during the interview process, please contact: Roshan Udit at rgu@queensu.ca. Academic staff at Queen's University are governed by a Collective Agreement between the University and the Queen's University Faculty Association (QUFA), which is posted at <http://queensu.ca/facultyrelations/faculty-librarians-and-archivists/collective-agreement> and at <http://www.qufa.ca>.

To comply with Federal laws, the University is obliged to gather statistical information about how many applicants for each job vacancy are Canadian citizens / permanent residents of Canada. Applicants need not identify their country of origin or

citizenship; however, all applications must include one of the following statements: "I am a Canadian citizen / permanent resident of Canada"; OR, "I am not a Canadian citizen / permanent resident of Canada". Applications that do not include this information will be deemed incomplete. Your application cover letter must include one of these two citizenship statements.

Applicants should submit:

- A cover letter, including one of the two statements regarding Canadian citizenship/permanent resident status specified in the previous paragraph

- A current Curriculum Vitae, including a list of publications
- A statement of current and prospective research interests
- Evidence of research, such as copies of sample publications, working papers, or a dissertation proposal
- A statement of teaching interests and experience, including course outlines and evaluations, if available
- Three letters of reference

Deadline for applications:
September 4, 2019

Note: only selected candidates will be contacted for interviews.

Submitting your application

Please submit your application package via Interfolio Faculty Search through the following link: <https://apply.interfolio.com/64506>

Stevens Institute of Technology

Adjunct Professor in Machine Learning, Computer Science

The Schaeffer School of Engineering & Science's Department of Computer Science is seeking candidates to serve as adjunct professors to support graduate-level courses, with special consideration related to Machine Learning.

Head, Department of Statistics

Texas A&M University, College Station, Texas



TEXAS A&M UNIVERSITY

Statistics

A national search is underway to identify outstanding candidates for Head of the Department and holder of an endowed chair of Statistics at Texas A&M University, the fourth largest university in the nation with an enrollment of over 50,000 students. The position will be hired at the rank of Full Professor. The Department has a strong tradition of theoretical and interdisciplinary research. Faculty members have extensive research collaborations with faculty in all ten colleges on campus.

The Department has 70 graduate students on campus with an additional 300 distance-learning M.S. graduate students, 150 undergraduate students, 26 research faculty members, and 13 academic professional track faculty. Further information about the Department, its faculty, and its facilities can be found at our website: www.stat.tamu.edu.

The Department seeks an individual with a dynamic and internationally recognized research program, a sincere commitment to undergraduate and graduate teaching, and proven leadership skills to be the Head. The Head reports to the Dean of the College of Science and is responsible for the Department's administrative, budgetary, and personnel matters. Candidates for Head must demonstrate a vision for supporting, directing, and enhancing the goals of the Department. The position requires a Ph.D. in Statistics or a related field and a record of scholarship and teaching consistent with the level of professor at a major research university.

Any questions regarding this position may be directed to the Chair of the Search Committee, Dr. Bani Mallick at headsearch@stat.tamu.edu. Interested applicants should apply at academicjobsonline.org/ajo/jobs/13998. Applications will continue to be accepted until the positions are filled. The Search Advisory Committee will review applications as they are received, and the review will continue until the position is filled.

Texas A&M University is committed to enriching the learning and working environment for all visitors, students, faculty, and staff by promoting a culture that embraces inclusion, diversity, equity, and accountability. Diverse perspectives, talents, and identities are vital to accomplishing our mission and living our core values.

The Texas A&M System is an Equal Opportunity/Affirmative Action/Veterans/Disability Employer committed to diversity. The College of Science and the Department of Statistics are dedicated to the goal of building an inclusive and culturally diverse faculty and staff who are committed to teaching and working in an environment of academic freedom and equality of opportunity.

Courses will be taught to a mix of full-time/part-time upper level undergraduate students and graduate students. Course delivery may be on-campus, in a hybrid mode to include campus and online students, or completely online. Primary responsibilities will be teaching course in the area of machine learning, artificial intelligence, deep learning, or natural language processing.

We are looking for teaching during the Fall 2019, Spring 2020, and Summer 2020 semesters. Salary is competitive and additional teaching opportunities in the department are available. To learn more about Computer Science at Stevens and the Machine Learning graduate program, please visit ([website](#)).

Qualifications: Ph.D. in Computer Science or related fields required. Previous teaching experience or 3-5 years industry experience in the subject area is required. Course development or authoring experience is strongly preferred.

Responsibilities: Include preparing and maintaining course syllabus, teaching assigned classes, attending all class sessions, grading and providing appropriate feedback to students, scheduling office hours (on-campus or online), completing all assessments requirements, perform course assessment, and attending at least one orientation meeting. You will also be required to provide your students and the department with a comprehensive syllabus before the start of the semester. The syllabus should include all course requirements,

grading policy, assignments, expected exams and required reading. You will provide any textbook orders or other course material requirements well in advance of the first week of classes. Finally, you will be required to adhere to the policies as stated in the School of Engineering & Science and/or the WebCampus faculty handbook.

Applicants should be sure to include a cover letter, CV or resume, and names/contact information for three professional references.

Apply at https://stevens.wd5.myworkdayjobs.com/en-US/External/job/Hoboken-NJ---Main-Campus/Adjunct-Professor-in-Machine-Learning-Computer-Science_RQ22676

University of Alabama at Birmingham

Open Rank Tenured Faculty Position

The Department of Computer Science (CS) at the University of Alabama at Birmingham (UAB) is seeking candidates for a tenure-track/tenured faculty position. While preference is given to candidates at the Assistant Professor rank, highly qualified candidates at Associate Professor and Professor rank will also be considered. For additional information about the Department, please visit: <http://www.cs.uab.edu/>.

Candidates with expertise in all core CS areas are sought, with preference given to Software Engineering, Computing Systems, and Data Science areas. UAB

has made a significant commitment to both research and teaching in Computer Science. Candidates must consequently have strong research and teaching credentials. Experience and success in funded research is desirable for junior-level candidates, and required for senior-level candidates. UAB is a Carnegie "Very High Research Activity" University.

The CS Department at UAB offers PhD, MS, BS, and BA programs. The Department has a strong research focus, and a strong commitment to teaching, service, and outreach. The goal is to grow the PhD, MS, and BS significantly over the next several years. Research funding is expanding significantly, and the Department has a leadership role in a Center focusing on Cyber Security. Collaborations with UAB's medical enterprise are strong and growing, with many opportunities for faculty to participate in interdisciplinary work.

A Ph.D. in Computer Science or a closely related field is required. Applications should include a curriculum vitae, a list of publications and scholarly achievements, a statement of future research plans, a statement of teaching experience and philosophy, and at least three reference letters. Applications and all other materials (including reference letters) should be submitted through UAB's portal at People Admin: <http://uab.peopleadmin.com/postings/5119>.

UAB is an Equal Opportunity/Affirmative Action Employer committed to fostering a diverse, equitable and family-friendly

environment in which all faculty and staff can excel and achieve work/life balance irrespective of ethnicity, gender, faith, gender identity and expression as well as sexual orientation. UAH also encourages applications from individuals with disabilities and veterans. A pre-employment background investigation is performed on candidates selected for employment.

The University of Alabama in Huntsville

Assistant Professor

The Department of Computer Science at The University of Alabama in Huntsville (UAH) invites applicants for a tenure-track faculty position at the Assistant Professor level beginning January 2020. All applicants with a background in traditional areas of computer science will be considered; however, special emphasis will be given to applicants with expertise in cybersecurity, gaming, software engineering, cloud computing, and systems related areas.

A Ph.D. in computer science or a closely related area is required. The successful candidate will have a strong academic background and be able to secure and perform funded research in areas typical for publication in well-regarded academic conference and journal venues. In addition, the candidate should embrace the opportunity to provide undergraduate education.

The department has a strong commitment to excellence in teaching, research, and service; the candidate should have good

communication skills, strong teaching potential, and research accomplishments.

UAH is located in an expanding, high technology area, in close proximity to Cummings Research Park, the second largest research park in the nation and the fourth largest in the world. Nearby are the NASA Marshall Space Flight Center, the Army's Redstone Arsenal, numerous Fortune 500 and high tech companies. UAH also has an array of research centers, including information technology and cybersecurity. In short, collaborative research opportunities are abundant, and many well-educated and highly technically skilled people are in the area. There is also access to excellent public schools and inexpensive housing.

UAH has an enrollment of approximately 9,500 students. The Computer Science department offers BS, MS, and PhD

degrees in Computer Science and contributes to interdisciplinary degrees. Faculty research interests are varied and include cybersecurity, mobile computing, data science, software engineering, visualization, graphics and game computing, multimedia, AI, image processing, pattern recognition, and distributed systems. Recent NSF figures indicate the university ranks 30th in the nation in overall federal research funding in computer science.

Interested parties must submit a detailed resume with references to info@cs.uah.edu or Chair, Search Committee, Dept. of Computer Science The University of Alabama in Huntsville, Huntsville, AL 35899. Qualified female and minority candidates are encouraged to apply. Initial review of applicants will begin as they are received and continue until a suitable candidate is found.



Tenured Professor and Senior Scientist Simons Institute for the Theory of Computing

The University of California, Berkeley invites applications for an approved tenured professorship the Associate or Full Professor rank in one of several possible departments associated with the Simons Institute for the Theory of Computing. Rank will be determined based on qualifications and experience. The appointee will also hold the title of Senior Scientist in the Simons Institute and will play an active leadership role in the conception and realization of Institute programs. The candidate's designated home department is open but should be in a field closely related to the theory of computing. The expected start date for this position is July 1, 2020. For more information about the position, including required qualifications and application materials, please go to: <https://aptrkr.com/1497175>

All materials for applicants should be received by July 10, 2019, for full consideration. For questions, please contact the Search Committee Chair at eeecs-faculty-recruiting@eeecs.berkeley.edu.

UC Berkeley is an AA/EEO employer.

The University of Alabama in Huntsville is an affirmative action/equal opportunity employer/minorities/ females/ veterans/ disabled.

Please refer to log number: 19/20-545

University of California, Merced

Faculty positions in Computer Science and Engineering

The Department of Computer Science and Engineering (CSE) at UC Merced seeks applicants for two (2) tenure-track positions at the Assistant Professor level beginning on Jan 1, 2020. Exceptional candidates in all areas of computer science will be considered.

We are particularly interested in attracting academically and culturally diverse candidates, especially those who can contribute to the growing diversity and excellence of the community through their teaching, scholarship, and service.

Please see <https://aprecruit.ucmerced.edu/JPF00834> for complete details and contact information.

EEO/AA employer.

University of California, Merced

Assistant Professor in Mechanical Engineering

The Department of Mechanical Engineering at the UC Merced invites applications for a full-time tenure-track faculty position at the Assistant Professor level beginning on

July 1, 2020. A Ph.D. degree in Mechanical Engineering or a closely related field at the time of appointment is required.

Applications must be submitted via the website: <https://aprecruit.ucmerced.edu/JPF00822>.

The University of California, Merced, is the newest of the University of California system's 10 campuses. With more than 8,500 undergraduate and graduate students (<https://www.ucmerced.edu/fast-facts>), UC Merced is strongly committed to interdisciplinary excellence in research and teaching as well as to diversity, equity and inclusion. The University of California, Merced is an equal opportunity/affirmative action employer with a strong institutional commitment to the achievement of diversity among its faculty, students and staff. The University is supportive of dual career couples.

University of Cincinnati

Assistant/Associate Professor of Computer Science & Engineering (Final Rank/Title commensurate with credentials) Department of Electrical Engineering and Computer Science

The University of Cincinnati (UC) Department of Electrical Engineering & Computer Science in the College of Engineering and Applied Science (CEAS) seeks to recruit for a tenure-track position at the Assistant or Associate Professor level in the area of databases and data and information management. Rank, salary, and startup funding will

be negotiated commensurate with the candidate's credentials.

Primary Responsibilities: Teach graduate and undergraduate engineering courses (related to databases and data and information management) online and in a traditional classroom setting; participate in service related activities; develop an externally funded research program in the applicable engineering field of expertise; advise graduate and undergraduate students; and publish research results in professional journals. In addition, the chosen candidate will participate in curriculum and course development.

Minimum Qualifications: A Ph.D. in Computer Science, Computer Engineering or a closely related field and a successful background in both research and teaching in the area of databases and data and information management. A successful background may be demonstrated by a record of quality publications (2 peer reviewed journals and conference proceedings total per year), a well thought out research plan (to include a short-term plan of 3-5 years and a long-term plan of 6-10 years), and a statement of teaching philosophy and experience [*per "Application Process" paragraph*] that highlights a commitment to teaching and builds on previous accomplishments made during a minimum of 2 academic years of teaching experience in the area of databases or data and information management.

For the full job description and application requirements,

Please visit <https://jobs.uc.edu> and search keyword: 37501

The University of Hong Kong

Tenure-Track Faculty Position - Big Data

Applications are invited for Associate Professor / Assistant Professor, full-time positions tenable from 1 January 2020. Applicants should have a Ph.D. degree in Computer Science, Computer Engineering, Statistics, or a related field, with research areas related to big data. He/She should have a strong commitment to research and teaching. A solid track record in research is essential. Preference will be given to applicants who have applied research experience in big data, especially big data system development or big data analytics experience in domains such as internet data, financial data, market customer data, health data, smart city data, public services data and social science and humanities research data.

More information can be found at: <https://jobs.hku.hk/cw/en/job/495775/tenuretrack-associate-professorassistant-professor-in-the-department-of-computer-science-and-the-department-of-statistics-and-actuarial-science>

University of Manitoba

*Departments of Biological Sciences and Computer Science
Faculty of Science
Winnipeg, Manitoba, Canada
Assistant or Associate Professor
in Neuroscience
Position #: 26017*

The Departments of Biological Sciences and Computer Science invite applications for a full-time tenure-track or tenure position, commencing 1 July 2020, or on a date mutually agreed upon. The Departments seek an emerging scholar as an assistant professor with a commitment to excellence in teaching and research. Excellent candidates at any level will be considered. The ideal candidate will be an energetic, interdisciplinary, and visionary early career scholar committed to the study of Neuroscience and Cognition preferably with a research program that uses computational methods and theory. The successful candidate will hold a Ph.D. and preferably post-doctoral experience or other distinguishing attributes in Biology, Computer Science, Psychology, Neuroscience or Neurobiology or a related field. The successful candidate will carry out research and develop a competitive research program that emphasizes mechanistic, comparative, or evolutionary aspects of the neurophysiology, molecular, or cognitive processes underlying behaviour. Candidates working with a range of experimental systems, including model organisms are welcome to apply. Preference will be given to candidates with a bioinformatics, computational or “big

data” focus on neurobiology. The successful candidate will have their home department in either Biological Sciences or Computer Science. Duties will include meaningful contributions to the research, teaching and service activities of both Departments. The successful candidate will have a track record of high quality scholarly research leading to peer assessed publications; will either have, or demonstrate the potential to establish, an independent, innovative, scholarly, externally fundable research program; will have demonstrated strength in or strong potential for outstanding teaching contributions; and will exhibit evidence of the ability to work in a collaborative environment. Salary and rank will be commensurate with experience and qualifications.

For more details and how to apply, please visit:

https://viprecprod.ad.umanitoba.ca/default.aspx?req_id=06961

University of Manitoba

*Department of Computer Science
Faculty of Science
Winnipeg, Manitoba, Canada
Assistant or Associate Professor in
Computer Science
Position #: 27780*

The Department of Computer Science invites applications for a full-time tenure-track or tenure position commencing July 1, 2020, or on a date mutually agreed upon. The Department seeks an emerging scholar as an Assistant or

Associate Professor with a commitment to excellence in teaching and research. Outstanding candidates in any area of Computer Science will be considered, with particular emphasis on candidates who will complement or extend the department's strengths. The successful candidate will have a Ph.D. and preferably post-doctoral experience or other distinguishing attributes in Computer Science or a related field. Duties will include undergraduate teaching, graduate teaching and supervision, research, including the establishment of an externally funded research program, and service-related activities. The successful candidate will have a track record of high quality scholarly research leading to peer assessed publications; will either have, or demonstrate the potential to establish, an independent, innovative, scholarly, externally fundable research program; will have demonstrated strength in or strong potential for outstanding teaching contributions; and will exhibit evidence of the ability to work in a collaborative environment. Salary will be commensurate with experience and qualifications.

To enhance our department and create role models for a diverse population of students, we particularly invite application from those who can support and enhance our diversity, including women, Indigenous peoples, other visible minorities, and those committed to a diverse environment.

The Department currently has twenty-seven full time tenured and tenure track faculty members and seven Instructors, and offers a full range of both

undergraduate and graduate programs in Computer Science. The Department has a well-established and equipped research facility, and is supported by strong research links with other University of Manitoba departments. Further information about the Department can be obtained from cs.umanitoba.ca. Winnipeg is the largest city in the Province of Manitoba. The city has a rich cultural environment, including symphony, opera, dance, theatre, and ethnic festivals. The region provides ample opportunities for outdoor recreation in all seasons. Learn more about Winnipeg at winnipeg.ca.

The University of Manitoba is strongly committed to equity and diversity within its community and especially welcomes applications from women, racialized persons, Indigenous Peoples, persons with disabilities, persons of all sexual orientations and genders, and others who may contribute to the further diversification of ideas. If you require accommodation supports during the recruitment process, please contact U of M's Equity, Diversity and Inclusion Facilitator, Valerie Williams at Valerie.Williams@umanitoba.ca or 204-474-8371. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority.

Applications including a curriculum vitae, a description of teaching philosophy, a summary of research interests, a three page research plan and contact information for three references should be sent to search@cs.umanitoba.ca (PDF files preferred). Please ensure to specify

position number 27780 in the application. For further information contact the Search Committee Chair at search@cs.umanitoba.ca. The closing date for receipt of applications is September 15, 2019. Application materials, including letters of reference, will be handled in accordance with the Freedom of Information and Protection of Privacy Act. Please note that curricula vitae may be provided to participating members of the search process.

University of Massachusetts Amherst-

Assistant Dean of Research Business Development (Director of Research Business Development)

The College of Information and Computer Sciences (CICS) at the University of Massachusetts Amherst invites applications for an Assistant Dean of Research Business Development (Director of Research Business Development).

For a complete position announcement including minimum qualifications and application instructions, please visit <http://careers.umass.edu/amherst/en-us/job/501350/assistant-dean-of-research-business-development-director-of-research-business-development>

The University of Massachusetts Amherst is an Affirmative Action/Equal Opportunity Employer of women, minorities, protected veterans and individuals with disabilities and encourages applications from these and other protected group members.

University of Missouri St. Louis

Faculty Position in Computer Science

The Department of Mathematics and Computer Science at the University of Missouri-St. Louis invites applications for a non-tenure-track assistant teaching professor, or a one-year visiting faculty position, in Computer Science to begin Fall 2019. For more details and application information, please see <http://www.umsl.edu/mathcs/files/pdfs/CS2019.pdf>

An Affirmative Action, Equal
Opportunity Employer

UTHealth School of Biomedical Informatics

Tenure-Track, Open Rank Faculty Position in Medical AI

JOB SUMMARY: The School of Biomedical Informatics (SBMI) at the University of Texas Health Science Center at Houston (UTHealth) is recruiting one full-time, tenure-track faculty member, open rank, in applications of artificial intelligence (AI) and machine learning (ML) to medicine and healthcare.

The successful applicant will join a dynamic faculty at SBMI who are active in research, education, and applying informatics to medicine and healthcare. SBMI is one of the largest programs of biomedical informatics in the nation with about fifty regular faculty and additional fifty adjunct faculty. SBMI's Vision is "Transforming Data to Power Human Health". The Mission of SBMI is



Faculty Position in Computer Science

The Department of Computer Science at The University of Texas at San Antonio (UTSA) invites applications for three open rank and two non-tenure track Assistant Professor in Practice positions, starting in Fall 2019. Depending on the qualifications and experience, the successful candidates may be considered at the level of Lecturer I, II, III, or Senior Lecturer.

Three non-tenure track faculty positions focused on teaching computer programming, discrete mathematics, systems programming, operating systems, artificial intelligence, and related courses.

One non-tenure track Assistant Professor in Practice position focused on teaching computer programming, discrete mathematics, systems programming, operating systems, artificial intelligence, and related courses.

One non-tenure track Assistant Professor in Practice position focused on game development, computer graphics, user interfaces and human-computer interaction, virtual/augmented reality, image processing, and related courses.

See <https://aptrkr.com/1481892> for more information on the Department and application instructions. Screening of applications will begin immediately. Application received by June 30, 2019 will be given full consideration. The search will continue until the positions are filled or the search is closed.

The University of Texas at San Antonio is an Affirmative Action/Equal Opportunity Employer. Women, minorities, veterans, and individuals with disabilities are encouraged to apply.

Department of Computer Science
RE: Faculty Search
The University of Texas at San Antonio
One UTSA Circle
San Antonio, TX 78249-0667
Phone: 210-458-4436

to collect, process, and convert data - ranging from molecules to populations - into actionable information, knowledge, and intelligence; educate current and

future leaders, innovators, and problem solvers across Texas, the nation, and the world; disrupt, transform, and innovate to elicit biomedical discoveries.

improve healthcare delivery, and aid in disease prevention by conducting outstanding basic and applied research and developing impactful information technology products and solutions.

SBMI offers one master's degree with two tracks (research and applied) and two doctoral degrees (research-focused Doctor of Philosophy or PhD and practice-focused Doctor in Health Informatics or DHI), along with several graduate certificate programs, in the unique environment of the Texas Medical Center, the most concentrated area of biomedical and healthcare expertise, knowledge and skills in the world with more than fifty health-related institutions, 100k employees, 9,200 patient beds, and 10 million patient encounters, 180k surgeries, and 750k ER visits per year.

QUALIFICATIONS: Applicants should possess a PhD in computer science, engineering, biostatistics, cognitive science, biomedical informatics, or related disciplines. Candidates possessing MD-PhD are highly encouraged to apply. MDs with a strong quantitative background will also be considered. We are especially interested in applicants with strong background in AI and ML and an interest in integrating multiple sources of data (clinical, behavioral, temporal, environmental, etc.) to understand human behavior (both patients and providers) and its implications for health quality, safety, and efficiency.

Applicants at the associate or full professor levels should have a strong

track record of teaching at the graduate level, extramural funding, and published research. Applicants at assistant professor level should have demonstrated potentials in extramural funding and published research and a strong commitment to graduate level teaching. Candidates who are likely to develop collaborative research with other SBMI faculty and faculty at UTHealth and the Texas Medical Center are preferred.

RESPONSIBILITIES: The successful candidate will be expected to conduct funded research, participate in teaching activities at the graduate level, and provide service at the school, university, national, and international levels. Collaborative research with other faculty in the school and across UTHealth and the Texas Medical Center is expected.

SALARY: Competitive and dependent upon qualifications and experience.

APPOINTMENT/BENEFITS: This position is a 12-month full-time appointment on the tenure-track. All interested parties should go to the link below to provide their curriculum vitae, research and teaching statement, names of three references, and a letter describing the applicant's qualifications and career goals.

Link to job: <http://p.rfer.us/UTH4Nd4s5>

UTHealth is an EEO/AA employer. UTHealth does not discriminate on the basis of race, color, religion, gender, sexual orientation, national origin, genetics, disability, age, or any other basis prohibited by law. EOE/M/D/F/V.

West Chester University

Tenure-Track Assistant, Associate, or Full Professor of Computer Science

West Chester University's Department of Computer Science invites applicants for open rank, tenure-track faculty to begin Spring 2020 and Fall 2020. This position teaches undergraduate and graduate level courses. The teaching load is four classes per semester. Applicants must have a Ph.D. in computer science or a related field at the time of appointment. The Search Committee will accept confidential applications and nominations until the position is filled. Screening of candidates will begin immediately. For best consideration, applications and nominations should be provided before August 26, 2019. Candidates should submit an application letter indicating your interests and suitability, curriculum vitae, a statement of research interests, a statement of teaching philosophy, unofficial academic transcripts (official graduate transcripts would be required later for finalists) and **three letters of recommendation when applying**. Confidential inquiries, nominations, and application materials should be directed to:

Ashley Hice, Senior Executive Search Consultant ashleyhice@greenwoodsearch.com.

Yahoo Research

Research Scientist

Yahoo! Research is looking for a top research scientist in Data Mining, Applied Machine Learning, NLP, Visualization, and

related areas. For further details, see
<https://bit.ly/2XCoQsq>.

To apply, please complete
<https://bit.ly/315xTnV>

Yale School of Management

*Assistant Professor of Marketing
(Quantitative)*

The Yale School of Management seeks applicants in the field of quantitative marketing for a tenure-track faculty position at the rank of Assistant Professor. Applicants must have a Ph.D. or equivalent degree (or will earn the degree within one semester from the start of the appointment) in Quantitative Marketing or a related field such as Economics, Computer Science or Statistics.

For more information and to apply please visit <http://apply.interfolio.com/64445>