

COMPUTING RESEARCH NEWS



Computing Research Association
Uniting Industry, Academia and Government to
Advance Computing Research and Change the World.

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CRN At-A-Glance

Expanding the Pipeline: CRA URMD Grad Cohort Fosters a Diverse and Inclusive Generation of Computing Researchers

Approximately 100 graduate students in computing and more than 20 speakers assembled on March 16-17 in San Diego, CA, to convene the inaugural **CRA Graduate Cohort for Underrepresented Minorities and Persons with Disabilities** (URMD Grad Cohort). It was the first gathering of its kind hosted by CRA. This new iteration of the Grad Cohort Workshop focused on the following underrepresented groups in computing: Alaska Native, Black/African American, Hispanic, Native American, Native Hawaiian and other Pacific Islander, and persons with disabilities. The workshop aimed to increase representation from these groups in computing research by building and mentoring nationwide communities through their graduate studies, and is modeled on the highly successful **CRA-W Grad Cohort Workshop for Women**.

See page 2 for full article.

CRA-E Showcases Stories of Undergraduate Researchers on its Conquer Website

CRA-E's new "**Undergraduate Research Highlights**" series showcases outstanding research done by undergraduate students at universities and colleges across North America. It is one of a number of CRA-E's activities that foster and recognize talented computing researchers with the goal of increasing the research pipeline, promoting graduate education, and advocating research-based careers.

See page 4 for article.

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Expanding the Pipeline: CRA URMD Grad Cohort Fosters a Diverse and Inclusive Generation of Computing Researchers



By Shar Steed, CRA Communications Specialist

About the Workshop

Approximately 100 graduate students in computing and more than 20 speakers assembled on March 16-17 in San Diego, CA, to convene the inaugural **CRA Graduate Cohort for Underrepresented Minorities and Persons with Disabilities** (URMD Grad Cohort). It was the first gathering of its kind hosted by CRA. This new iteration of the Grad Cohort Workshop focused on the following underrepresented groups in computing: Alaska Native, Black/ African American, Hispanic, Native American, Native Hawaiian and other Pacific Islander, and persons with disabilities. The workshop aimed to increase representation from these groups in computing research by building and mentoring nationwide communities through their graduate studies, and is modeled on the highly successful **CRA-W Grad Cohort Workshop for Women**.

Throughout the course of the two-day workshop, participants developed peer networks and gained insights from senior computing researchers in sessions that covered topics such as strategies for surviving and thriving in graduate school, presentation skills, networking, and how to handle difficult situations. ([Click here to view the full program agenda.](#))

The first plenary session, "Finding your Way: Overcoming Cultural Barriers" by Ayanna Howard (Georgia Tech) and Daniela Marghitu (Auburn University), focused on navigating the obstacles that make pursuing an advanced degree in computing especially challenging. Howard shared the story of her career path and encouraged participants to "Find advocates, and hold on to your dreams-even when it isn't easy." She stressed that positive outcomes can result from overcoming obstacles--like developing your voice. Likewise, Marghitu encouraged attendees to "Surround yourself with the people who believe in you and will support your dreams."



Speakers, as well as attendees, shared their stories in another well-received plenary session on the last day called "Strategies for Human-Human Interaction." The session, which was hosted by panelists Marghitu, Shiri Azenkot (Cornell Tech), and Dorian Arnold (Emory University), was full of enthusiasm and substantial audience participation.

Speakers shared the following advice which deeply resonated with the audience:

- Stand up for yourself
- Let your work/actions speak for yourself
- Prepare in advance for how to handle difficult situations
- Show dignity, not pity, for people with disabilities

Participants took to Instagram, Twitter, and Snapchat to share their thoughts about the event using the hashtag **#CRAGradCohort**. One participant tweeted, "Ever[y] session yesterday has left me feeling empowered and more knowledgeable than when I arrived! [@CRAtweets](#) [#CRAGradCohort](#) [#grateful](#)."

Expanding the Pipeline *(continued)*

Eighteen attendees submitted abstracts for the poster session held Friday afternoon, which provided the graduate students with the opportunity to present their research and receive feedback from other participants, speakers, and sponsors. A Friday evening reception sponsored by Google was a hit with the attendees and brought together everyone, regardless of their background or physical ability.



The Need for Diversity: The Numbers Speak for Themselves

CRA hosts the URMD Workshop as part of its mission to facilitate the development of strong, diverse talent in the computing field. CRA believes **computing research needs diverse perspectives** in order to foster innovation.

Even though Hispanics and African Americans make up 30 percent of the U.S. population according to the 2010 U.S. census, the **2016 CRA Taulbee Survey** reports that for computer science, computer engineering, and information fields, underrepresented minorities comprised only 3.9 percent of Ph.D. enrollment and 4.8 percent of Master's degree enrollment during the 2015-2016 academic year.

People with disabilities are also underrepresented in computing fields. According to the National **Center for Education Statistics in 2012**, the engineering, computer science, and mathematics fields had about 10.6 percent of undergraduates and 4.8 percent of graduate students with disabilities. This is in contrast to the approximately 15 percent of K-12 students who are identified as disabled.

Thank You, Sponsors!

The 2018 CRA URMD Workshop was made possible through generous contributions from CRA, the National Science Foundation, AccessComputing, Whova, Google, and the Association for Computing Machinery.

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About the Author

Shar Steed is the communications specialist responsible for the marketing and communications initiatives of the Computing Research Association.

CRA-E Showcases Stories of Undergraduate Researchers on its Conquer Website



CRA-E

Computing Research Association
Education

CRA-E's new **"Undergraduate Research Highlights"** series showcases outstanding research done by undergraduate students at universities and colleges across North America. It is one of a number of CRA-E's activities that foster and recognize talented computing researchers with the goal of increasing the research pipeline, promoting graduate education, and advocating research-based careers.

Each article features the story of a successful undergraduate researcher and offers personal insights into their experiences with finding an advisor, undertaking new research projects, and discovering how research can impact their personal and professional futures. In addition to helping students understand the process of getting involved in research, the articles also serve as a venue for students to pass along advice to others who aspire to become involved in research themselves. Students selected for the research highlights include those receiving recognition in the **CRA Outstanding Undergraduate Researcher Award** competition. This series is written and edited by **CRA-E Graduate Fellows**.

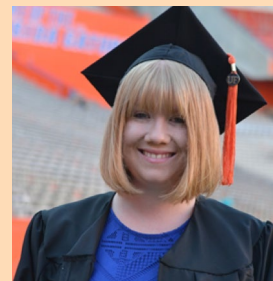
The first three articles in the Undergraduate Research Highlights series are now available.



"Driven by Curiosity" features Gloria Kim and details what led her to pursue research at Rice University



"Beyond the Valley" features Lillian Tsai and her research experience at Harvard University



"From Passions to Projects: How interest in design and art led to computing research" features Julia Woodward and her research projects at the University of Florida

New additions to this series will be posted regularly on the **Conquer website** available at <http://conquer.cra.org/undergrad-research-highlights>. We encourage you to share these stories with your students and those considering a research career. You can subscribe to be notified of new articles [here](#).

Research Highlight: CRA Board Member Julia Hirschberg



By Julia Hirschberg

My research sits at the intersection of Natural Language Processing (NLP) and speech processing. I have focused on identifying the role of prosodic information in speech and using this knowledge to produce more realistic Text-to-Speech Synthesis (TTS) systems; to detect many types of speaker state, including the classic emotions, such as anger, disgust, fear, happiness, sadness, and surprise; and derived emotions, such as confidence and uncertainty, deception, trust, and charisma. I've also studied human-machine and human-human behavior in Spoken Dialogue Systems (SDS) and Human-Computer Interaction (HCI).

After many years working in TTS and HCI at Bell Labs and AT&T Labs Research, I moved to academia at Columbia University in 2002. Here my research group has made major contributions to the automatic identification of emotional speech (confidence, uncertainty, and the classic emotions of anger, joy, surprise, sadness, disgust, and fear), improving over previous work by using higher level prosodic information as well as low-level features derived from pitch, speaking rate, and energy. I have also done numerous studies of cross-cultural perception of charismatic speech, identifying important similarities and differences in the prosodic factors correlated with perception of charisma by American English, Palestinian Arabic, and Swedish listeners. Work by myself and colleagues on deceptive speech has produced the two cleanly recorded corpora of deceptive and non-deceptive speech: the Columbia SRI Colorado Corpus and the Columbia Cross-Cultural Corpus (CxC), totaling about 130h of speech. Machine learning algorithms trained on acoustic-prosodic, lexical, personality, gender, and native language features on the CxC corpus have generated the best results to date on deception detection from spoken language alone. This work has also uncovered individual differences in deception behavior and ability to detect deception based on cultural, gender, and native language among male and female speakers of American English and Mandarin Chinese. Currently, we are working on the identification of vocal and lexical features that characterize "trusted" voices as well as oral indicators that one speaker trusts another.

Understanding Dialogue Systems

My lab's work on dialogue systems has been based largely on prosodic analyses of the Columbia Games Corpus which we have also collected. This work has focused on the identification of turn-taking behaviors; the detection of human corrections, "inappropriate" system responses, and likely Automatic Speech Recognition (ASR) errors; and the role of prosodic entrainment (the propensity of conversational partners to begin behaving like each other, thus appearing more likeable, intelligent, and knowledgeable). Our turn-taking work has shown that prosodic cues are a reliable cue to determining that speakers are preparing to give up their turn and that backchannels (e.g., *ok, yeah*) can be distinguished from actual turn-taking behaviors in terms of their prosody. These findings are critical for the development of SDS which anticipate turn-endings via prosodic cues, rather than waiting for long pauses to occur, thus speeding up the dialogue, and for SDS that do not interpret backchannel indications of continued attention as attempts to take the turn. Work on corrections and ASR errors has provided evidence of new prosodic features that can be used to identify speaker attempts at correcting the system, system clarification questions that a system has asked



About the Author

Julia Hirschberg is Percy K. and Vida L. W. Hudson Professor and chair of computer science at Columbia University. She previously worked at Bell Laboratories and AT&T Labs where she created the HCI Research Department. Hirschberg served on the Association for Computational Linguistics executive board (1993-2003), the International Speech Communication Association board (1999-2007; 2005-7 as president), the International Conference on Spoken Language Processing board (since 1996), the NAACL executive board (2012-15), the CRA Executive Board (2013-14; 2018--), and the AAAI Council (2012-15). She has been editor of *Computational Linguistics* and *Speech Communication*, and is a fellow of AAAI, ISCA, ACL, ACM, and IEEE. She is also a member of the National Academy of Engineering. Hirschberg received the IEEE James L. Flanagan Speech and Audio Processing Award and the ISCA Medal for Scientific Achievement. She currently serves on the IEEE Speech and Language Processing Technical Committee, is co-chair of the CRA-W Board, and has worked to improve diversity at Bell Labs, AT&T Labs, and Columbia University.

Research Highlight (*continued*)

incorrectly, and speaker input that is more likely to be misrecognized – all important to improving system performance. Our studies of entrainment in conversation have provided evidence not only that prosodic entrainment is ubiquitous, with major similarities across several different cultures (American, Chinese, Slovakian, and Argentine), but that SDS that entrain to their users can be implemented to operate in real time and are preferred by their users. This work has sparked numerous new research efforts internationally on prosodic entrainment in other languages and on the possibilities of creating avatars and robots that can engender trust by entraining to their human partners.

Research on Low Recourse Languages: Generation and Analysis

In addition to these projects, the Columbia Speech Lab is continuing work on the automatic identification of classic emotions and also on positive and negative sentiment (*valence*) from speech, particularly in Low Resource Languages (LRLs). LRLs are languages with few existing computational resources to aid

in building ASR and TTS systems, parsers, or machine translation systems. Of the approximately 6,500 languages spoken in the world today, many are LRLs and many are spoken by millions, including languages such as Bengali, Hausa, Swahili, Telugu, Tagalog, Amharic, and Turkish. Our lab is building TTS systems for LRLs such as Turkish and Amharic from “found” data. Commercial TTS systems require very expensive recordings to be created and annotated for each new language (about \$1 million per voice). However, there are vast quantities of data in many languages available on the web (e.g., audio books, news broadcasts, Bibles, and Korans) or collected for non-TTS purposes (e.g., ASR). This data, if properly filtered, can be used to create intelligible TTS systems for millions of people who speak LRLs and have no access to SDS in their own language or to synthesized web text on their phones.

Detecting Code-Switching

Another project arising from our lab’s multi-cultural interests and diversity is work on how to detect code-switching in text and speech. Code-switching occurs

between bilinguals in conversation or on social media, as they switch naturally between one language and another, either within or across sentences. Code-switching wreaks havoc with all NLP tools, which currently are trained on a single language. So, methods of detecting code-switch points are critical to technologies such as ASR and machine translation, so that these technologies know when to switch to models trained on a new language and when to switch back again. Much of this work has shown interesting synergies, including findings of acoustic-prosodic and lexical entrainment in the deception interviews and in code-switching behavior as well. Altogether these projects not only advance the state-of-the-art in speech and NLP research but they provide stimulating research foci for graduate and undergraduate students alike, working together on challenging questions whose solutions will be useful for researchers and technology users alike. The 20 graduate and undergraduates working on research in the lab now come from seven different countries. Eleven of these students are women, of which six are Ph.D. students.

CRA CONFERENCE 2018 at snowbird



CRA
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Association

July 16-18

PROGRAM UPDATE

Monday, July 16

2:00 – 7:00 pm

Registration

3:00 – 5:30 pm

New Chairs Workshop

Co-chairs: Greg Hager, Johns Hopkins University, and Andrew Sears, Penn State

6:00 – 7:00 pm

Welcome Reception

7:00 – 9:00 pm

Dinner/Awards Presentations/After Dinner Speech

Welcome from the Conference Chairs

Awards Presentations

Distinguished Service and A. Nico Habermann Awards

Susan Davidson, University of Pennsylvania, and Andrew Bernat, CRA

CRA-E Faculty Mentoring Awards

Susanne Hambrusch, Purdue University, and Lori Pollock, University of Delaware

Plenary Talk

David Patterson, University of California – Berkeley and Google

Program Update (*continued*)

Tuesday, July 17

6:00 am – 6:30 pm **Registration**

7:00 am **Breakfast**

8:30 am – 10:00 am **Plenary Panel**

Diversity in Leadership

Chair: Carla Brodley, Northeastern University

Speakers: Shinder Dhillon, Microsoft, Ayanna Howard, Georgia Tech, Diane Levitt, Cornell Tech, and Ruth Watkins, University of Utah

Much of the effort of the Conference at Snowbird community has focused on increasing the diversity of our students across all stages of the academic pipeline with some efforts post Ph.D. The focus of this panel of industry and academic experts is on the challenges and opportunities in retaining diverse employees. And further, on efforts to ensure leadership paths in industry and academia of diverse members of staff/faculty. In short, our focus will be on efforts to ensure that diversity does not stop at “bringing diversity in the door” – put another way, people go where they are invited and stay where they are welcomed.

10:00 am **Break**

10:30 am – noon **Parallel Tracks**

Increasing Diversity in Computing is Easier Than You Think: Some Small Steps that Make a Big Difference

Chair: Mary Hall, University of Utah

Speakers: Richard Ladner, University of Washington, and Manuel Pérez Quiñones

This panel will consider a number of common questions that colleges and universities face in trying to increase diversity of the population of computing students. The discussion will focus on the types of programs and activities that may be in reach for most academic units, and particularly for units that feel they are currently not doing enough to increase diversity and retain a diverse student population. The following questions are representative of the intended discussion.

- What programs are widely used and proven successful for recruitment, development and retention of diverse student populations in undergraduate computer science programs?
- Depending on type of institution, what are low-cost, low-effort programs that a unit can undertake?
- In universities where the entire student population is not very diverse, how can a unit create a community for students from underrepresented groups?
- Students from different underrepresented groups have unique needs. What are things a unit should think about in creating a welcoming environment for all students?
- What are examples of ways that a unit can partner with other institutions to create a diverse student pipeline?

Program Update *(continued)*

Tuesday, July 17 *(continued)*

10:30 am – noon

Parallel Tracks *(continued)*

Growing a CS Department into a School/College of Computing

Chair: Chris Johnson, University of Utah

Speakers: Farnam Jahanian, Carnegie Mellon University, and Ruth Watkins, University of Utah

As computing continues to grow by tremendous leaps and bounds and to permeate universities' intellectual landscape, many department chairs are finding their programs have outgrown, or are outgrowing, the confines of their current locations in colleges of engineering or science. Discussions are taking place in many departments about exploring the possibility of expanding to a school or college of computing (or a similar name). In this panel, we have gathered a set of Provosts from Universities who have successfully made the transition from a Department of Computer Science to a College of Computing. The panelists will discuss the benefits of becoming a College of Computing, as well as, the challenges Departments face in making a successful transition to a College.

Department Rankings

Chair: H.V. Jagadish, University of Michigan

Speakers: Emery Berger, University of Massachusetts-Amherst, Kathryn McKinley and Kuansan Wang, Microsoft

Department rankings matter, whether we like it or not. Our community suffers when these rankings are performed poorly by external parties who may have limited understanding of our field. This is the case, even though we all understand that ranking reduces complex multi-attribute entities to a single number. This panel will describe some ways forward that are recently being explored.

Noon – 1:30 pm

Lunch

1:30 – 3:00 pm

Parallel Tracks

Improving Faculty Recruiting in the Computing Community

Co-chairs: Shashi Shekhar, University of Minnesota, and Josep Torrellas, University of Illinois at Urbana-Champaign

Speakers: Michael Franklin, University of Chicago, Juan Gilbert, University of Florida, Brian Noble, University of Michigan, Jennifer Rexford, Princeton University, and Craig Wills, Worcester Polytechnic Institute

Faculty recruiting challenges are on the minds of many computing research members. In this session, the panelists will discuss faculty recruiting challenges faced by departmental leadership (e.g., low yield), faculty members (e.g., multiple candidates per week), and faculty candidates (e.g., many strong candidates not getting academic interviews). It will also assess the needs, if any, for computing research community action.

Using CRA Data to Improve Your Department and Inform Decision Making

Co-chairs: Betsy Bizot, CRA, and Burçin Tamer, CRA

Speakers: James Allan, University of Massachusetts-Amherst, Tracy Camp, Colorado School of Mines, Thu Nguyen, Rutgers University, and Cal Ribbens, Virginia Tech

This session will discuss two of CRA's data sources: the Taulbee Survey and the Data Buddies Project. Attendees will learn how these data sources are distinct yet complementary and gain a better understanding of the information available from each in published reports and departmental comparison reports. Speakers will describe how departments have made use of these data, and discuss issues of individual and departmental privacy and the tradeoffs of survey length, comprehensiveness, and response rate. A portion of the session will be devoted to getting feedback on how Taulbee and Data Buddies can be of better use to the community.

Program Update (*continued*)

Tuesday, July 17 (*continued*)

1:30 – 3:00 pm

Parallel Tracks (*continued*)

Augmenting, Not Replacing, People

Chair: Ann Drobnis, CRA

Speakers: Greg Hager, Johns Hopkins University, Monica Lam, Stanford, and Jenna Wiens, University of Michigan

Artificial intelligence (AI) technologies are rapidly maturing into tools that are impacting our everyday lives. However, contrary to popular conception, most of these tools will not be autonomous, stand-alone systems, but rather will manifest as human assistants and augmentations. While autonomous driving is featured in the headlines, the short-term impact of advances in this field will be increased safety, comfort, and convenience, with the driver still at the wheel. New technologies in healthcare will not replace doctors, but will leverage their skill and judgement by providing super-human augmentations for eyes, hands, and intellect. As more robots move onto the manufacturing floor, they are most likely to function as ever-smarter programmable tools, and will still require human coworkers to teach them new tasks and to do those elements that are simply too hard to automate. Meanwhile, the scope of AI personal assistants continues to broaden in terms of their impact on different aspects of human interactions. This session explores these themes, emphasizing in particular the areas where AI and people will work together to do what neither can do alone.

3:00 pm

Break

3:30 – 5:00 pm

Networking Activities

5:30 pm

Double-blind Wine/Beverage Tasting (Part I)

6:30 – 9:00 pm

Dinner

After Dinner Talks – Computing Research Futures

Chair: Mark Hill, University of Wisconsin-Madison

Muddled Waters: Online Disinformation During Crisis Events

Speaker: Kate Starbird, University of Washington

Recent public attention and debate around “fake news” has highlighted the growing challenge of determining information veracity online. This is a complex and dynamic problem at the intersection of technology, human cognition, and human behavior—i.e. our strategies and heuristics for making sense of information may make us vulnerable, within online spaces, to absorbing and passing along misinformation. Increasingly, it appears that certain actors are intentionally exploiting these vulnerabilities, spreading intentional misinformation—or *disinformation*—for various purposes, including geopolitical goals. Drawing on research conducted on online rumors in the context of crisis response, this talk explores what alternative narratives (or “conspiracy theories”) of crisis events reveal about “fake news”, political propaganda, and disinformation online.

Machine Learning and Science

Speaker: Kathy Yelick, University of California, Berkeley, and Lawrence Berkeley National Laboratory



Program Update (*continued*)

Wednesday, July 18

6:00 am – 6:30 pm **Registration**

7:00 am **Breakfast**

8:30 – 10:00 am **Plenary Session**

Plenary Speaker: Raquel Urtasun, University of Toronto and Uber Advanced Technologies Group

10:00 am **Break**

10:30 am – Noon **Parallel Tracks**

Self-driving Cars: When Will They Become Mainstream?

Speakers: Raj Rajkumar, Carnegie Mellon University, Maarten Sierhuis, Nissan, and Raquel Urtasun, University of Toronto and Uber Advanced Technologies Group

Booming Faculty: Opportunities and Challenges

Chair: Laura Haas, University of Massachusetts – Amherst

Speakers: Carla Brodley, Northeastern University, Juan Gilbert, University of Florida, Elizabeth Jessup, University of Colorado, Boulder, and Dean Tullsen, UC San Diego

To cope with the rapid growth of student enrollments, many departments have been scrambling to rapidly grow their faculty. This panel will look at a number of questions raised by this rapid growth, among them:

- How can we navigate the transition from small(ish) to big(ger), and the impacts on processes (e.g., faculty meetings, hiring committees, annual review processes)?
- How can political issues from the rapid growth of one department or college in a time of budget pressures be avoided or reduced?
- How are departments coping with the additional pressure explosive growth is putting on space?
- What are the needs for additional staff to support the growth in faculty, and how are departments handling them?
- How are departments preserving collegiality, and growing or maintaining diversity as they expand?
- How are we supporting faculty research in a time of shrinking federal budgets but rising faculty numbers?
- How can we recruit sufficient high quality graduate students and deal with the additional pressures these growing numbers cause?

Diversity in Research Conferences: Spotlight and Brainstorming Solutions

Co-chairs: Sarita Adve, University of Illinois at Urbana-Champaign, and Kathryn McKinley, Google

Noon – 1:30 pm **Lunch**

Program Update (*continued*)

Wednesday, July 18 (*continued*)

1:30 – 3:00 pm

Parallel Tracks

Recruiting, Retaining, and Advancing Teaching Faculty

Co-chairs: Dan Grossman, University of Washington and Penny Rheingans, University of Maryland Baltimore County
Speakers: Carla Brodley, Northeastern University, Kevin Skadron, University of Virginia, and Ross Whitaker, University of Utah

This panel will address questions being considered by the CRA ad hoc committee on the role of teaching faculty in computing units at research universities, and in particular how administrative leaders (in particular chairs) can improve the effectiveness and satisfaction of teaching faculty. Topics are likely to include:

- What are best practices for the role of teaching faculty?
- What can CRA data tell us about the role of teaching faculty across institutions currently?
- What are the common challenges for recruiting/retaining/advancing teaching faculty and how can they be met?
- What unique perspectives do teaching faculty themselves have on these topics and how can administrative leaders better understand those perspectives?

1:30 – 3:00 pm

Parallel Tracks (*continued*)

New Models for Industrial Research in CS

Co-chairs: Brent Hailpern, IBM and Joe Sveteck, University of Oregon

Speakers: Maria Ebling, IBM, Maarten Sierhuis, Nissan, Min Wang, Google, and Norm Whitaker, Microsoft

Companies large and small are experimenting with new models for industrial research in computer science. Some old labs have disappeared, others are re-inventing themselves, while new labs have sprung up outside the traditional IT industry. This panel will attempt to answer the following questions:

- Why change the model? What is broken and how do the new models fix the problem?
- Do students require different academic preparation to succeed (in both academia and industry)?
- Do these models enhance the ability for researchers to migrate between industry and academia? Is there a viable career path for researchers keeping one foot in an academic job and the other in industrial research?
- Do the traditional models of measuring impact (publications, citations, professional society participation and awards) still matter?

Increasing Social Responsibility in Computing Professionals – What Should CS Departments and Labs Do?

Chair: Moshe Vardi, Rice University

Speakers: Barbara Grosz, Harvard University, Vijay Kumar, University of Pennsylvania, Illah Nourbakhsh, Carnegie Mellon University, and Ellen Zegura, Georgia Tech

A profound shift in the public view of computing has taken place recently. Computing was traditionally viewed as a source of innovation, economic growth, good jobs, and cool gadgets. In the past few months, one reads in the mainstream media descriptions of Silicon Valley as "tax-avoiding, job-killing, soul-sucking machine" and of cyberspace as "a dark and lawless realm where malevolent actors ranging from Russian trolls to pro-ISIS Twitter users could work with impunity to subvert the institutional foundations of democracy." Computing today is one of the greatest forces driving societal change, and computing professionals must accept their share of social responsibility. The question to computer science departments and labs is "What specifically should we do to address this challenging responsibility?" The panel will present several points of view on how to respond to the social-responsibility challenge from both the research perspective and the education perspective.



Program Update *(continued)*

3:30 – 5:00 pm	Making a Federal Case for Computing Plenary <i>Speaker: Peter Harsha, CRA</i>
5:00 pm	Break
5:30 pm	Double-blind Wine/Beverage Tasting (Part 2)
6:30 pm	Dinner



CRA
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at snowbird



Understanding Why Many Undergraduate Students Don't Participate in Research



CERP

Computing Research Association
Evaluation

By Jane Stout

Why students have chosen not to participate in or are undecided about participating in research (Students could select more than one option)



In CERP's 2017 [Data Buddies Survey](#), 9,610 undergraduate students indicated whether they had participated in a formal research experience during their college career to date. Interestingly, 72 percent of students indicated that they had not. Among students who had not participated in formal research, 34 percent indicated they planned to participate in formal research before they graduated, 23 percent indicated they did not plan to do so, and 42 percent of students were undecided (1 percent did not provide a response). Students who did not plan to pursue formal research in college or who were unsure about pursuing research explained why this is the case. The top three reasons included a preference for a "more applied experience," such as an internship; a lack of awareness about research opportunities; and lack of time to pursue research. Other reasons included a lack of interest in research; the fact that research had never occurred to students as an activity to pursue; and the fact that formal research experiences do not pay well if at all.

Actionable items for departments to engage students in formal research include:

- Advertise research experiences on department websites, bulletin boards, and other public spaces. Research experiences can be both inside and outside of the department.
- Hold informational sessions on the benefits of formal research, particularly the benefits of formal research over internships.

Notes:

CERP collected data from 10,282 undergraduate students who were majoring, minoring, or enrolled in computing courses at a national sample of universities and colleges via the [Data Buddies Project](#). $N = 9,610$ students responded to the question: During your college career so far, have you participated in any formal research experiences? Formal research includes any experience you applied for and through which you worked closely with a mentor or research advisor. Yes or No. Students who responded "No" ($N = 7,361$) were asked: Do you plan to participate in a formal research experience before you graduate from college? Yes, No, or Undecided. Students who responded "No" ($N = 1,702$) or "Undecided" ($N = 3,059$) were asked: Which of the following reasons explain why you are undecided about computing research or have chosen not to participate? Select all that apply. I am not aware of research opportunities available to me; I don't have time; It never occurred to me to do research; I am not interested in doing research; I prefer more practical experiences such as internships; and It doesn't pay well enough or not at all.

Science Fares Well in Final FY 2018 Spending Bill

By Peter Harsha, CRA Director of Government Affairs

Though it required negotiations that stretched nearly seven months into the fiscal year it is designed to fund, the FY 2018 Omnibus Appropriations act won the approval of a sizable majority in Congress and the reluctant approval of the President at the end of March, providing substantial boosts in Federal spending, including healthy increases to science investments across the government.

Passage of the omnibus bill was made possible by an [agreement in February](#) to increase statutory limits on discretionary spending for FY 2018 and FY 2019. That extra spending room ensured that congressional appropriators could boost military spending sufficiently to satisfy a majority of the GOP and increased non-defense spending sufficiently to woo enough congressional Democrats to overcome opposition from the conservative Freedom Caucus in the House. In the end, the 2,000+ page bill boosts Federal discretionary spending to \$1.3 trillion in FY 18, and boosts Federal R&D efforts by nearly 13 percent.

While appropriators generally do not spread funding increases evenly throughout the bill, overall, science agencies fare well in the bill, in many cases receiving meaningful increases for the first time in several years.

National Science Foundation

Overall, NSF will see an increase of 3.9 percent in FY 18, bringing its total budget to \$7.77 billion, \$295 million more than FY 17. The Research and Related Activities Account – the home of the Foundation's research directorates, including the Computing and Information Science and Engineering (CISE) directorate – will see an increase of 5 percent to \$6.3 billion, the highest it has received since FY 10. The appropriators were silent on how that money ought to be distributed to the various directorates, but historically, the NSF Director has tried

to distribute increases proportionately across the directorates. NSF's Education and Human Resources Directorate, home to many of NSF's STEM Education programs, will see an increase of 2.5 percent, bringing its total budget to \$902 million in FY 18.

Department of Energy

The Department of Energy's Office of Science received one of the largest increases among science agencies in the bill, growing 16.1 percent to \$6.26 billion in FY18. Included in that increase is a substantial 25.1 percent increase to the Advanced Scientific Computing Research (ASCR) program. Much of the ASCR increase is focused on the office's exascale efforts, with the Exascale program receiving an increase of 25 percent (to \$205 million), including increases to the Mathematics and Computer Science research accounts, as well as significant increases to current DOE HPC labs at Argonne and Oak Ridge in preparation for exascale deployments beginning in 2021. ARPA-E, which faced elimination threats in both the President's budget and the House appropriations bill, survives in the omnibus and grows to \$335 million, an all-time high funding level for the office.

National Institutes of Health

NIH will grow \$3 billion, or 9 percent, in FY 18 – \$10 billion more than the President's request for the agency. The omnibus increases the size of the BRAIN Initiative to \$400 million in FY18. Of note for NIH is a

proposal in the President's budget for next year (FY 19) that would consolidate three agencies currently under the Department of Health and Human Services – the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), the Agency for Healthcare Research and Quality, and the National Institute for Occupational Safety and Health – into NIH. Given that these agencies – NIDILRR in particular – support a significant amount of work in computing and engineering, there are concerns in the research community that a move into NIH, which has a much different mission and culture than NIDILRR, would change the focus of the research in non-beneficial ways. Appropriators in the FY 18 omnibus gave no indication that they support the proposed move for FY 19, but this is something that CRA, along with other members of the computing research community, are following.

Department of Defense

Across the department, basic research (6.1) will see an increase of 2.9 percent to \$2.3 billion in FY 18, applied research (6.2) will grow 7.3 percent to \$5.7 billion, and advanced technology development will increase 6.4 percent to \$6.9 billion. DARPA will see its budget increase 6.3 percent to \$3.1 billion, including a 20 percent increase to the basic sciences and large increases for ICT and electronics research, along with biotech and space technologies.

FY 2018 *(continued)*

NASA

NASA receives an overall increase of 6 percent to \$21 billion. NASA Science accounts will grow 7.1 percent to \$6.2 billion in FY 18.

National Institute of Standards and Technology

NIST Labs will see an increase of 5 percent to \$725 million.

Department of Homeland Security

The Science and Technology directorate at DHS will see a 7.6 percent increase to \$841 million. Of note, the President's FY 19 budget request calls for DHS' cyber security research efforts, currently housed in the S&T directorate, to be moved outside of S&T to the National Protections and Programs Directorate (NPPD), a more operationally-oriented office than S&T, raising concerns that the character of the research supported now in the program might change to reflect shorter-term operational needs. CRA and others in the computing research community are still considering the impact of this proposal on cyber security research at DHS and monitoring progress on this through the FY 19 appropriations cycle.

National Oceanic and Atmospheric Administration

NOAA will see an increase of 6.7 percent to \$549 million in FY 18.

United States Geologic Survey

USGS increases 5.8 percent to \$1.1 billion.

Environmental Protection Agency

EPA's Science and Technology program, a target of many on the right in Congress for its work on climate change research, will

be flat funded in FY 18 at \$706 million. Given the antagonism the agency faces, even from the Chair of the House Science Committee, a flat budget in FY 18 might be considered a positive outcome.

Computer Science Education Funding

The Explanatory Statement that accompanies the omnibus bill, which does not technically have the force of law but is treated as it does by the agencies, includes two explicit call outs for support of computer science education efforts in two Department of Education grant programs. The Student Support and Academic Enrichment grant program, boosted from \$400 million to \$1.1 billion in the bill is directed to "especially support pre-kindergarten through grade 12 computer science education programs that address the enrollment and achievement gap for underrepresented students such as minorities, girls, and youths from families living at or below the poverty line." The Education Innovation and Research program is the subject of language that carves out \$50 million for "innovative STEM education projects, including computer science education."

Though neither piece of language guarantees new funding for efforts to improve CS Ed in the states, the explicit mention of computer science education for the first time affirms Congress' belief in the appropriateness of those programs granting funding to CS Ed efforts. How much CS education flows will largely depend on the kind and quality of proposals received and the priority the Department of Education places on CS education.

Infrastructure Funding

The omnibus boosts infrastructure spending by \$11 billion to \$21 billion in FY 18. Included is \$265 million to increase rural broadband expansion through USDA; \$398 million to support "cutting-edge science at National Labs and other DOE sites"; and, \$500 million for "critical funds for cyber infrastructure resilience and protection.

In sum, science agencies gained nearly across the board in the FY 18 appropriations process, reversing in many cases an 8 year trend of flat or declining budgets. In addition, the budget agreement passed in February allows for a little additional growth in the FY 19 appropriations process — about 3 percent for non-defense discretionary accounts — so we will be monitoring the process already underway and advocating for a continued priority on investments in research. As noted above, we will also be watching and advocating about the programmatic changes at HHS and DHS proposed by the President for FY 19 and will have all the details on the Computing Research Policy Blog (cra.org/blog) as we learn them.

Given that this is a mid-term election year, it is almost a guarantee that the FY 19 appropriations will not be completed until after the election in mid-November at the earliest. Indeed, how that November election shakes out will determine the end game for the appropriations process. Congress may elect to finish appropriations in a lame duck session after the election or punt the whole process to the new congress in the new year. Whatever happens, we will have all the details here.

Great Innovative Idea - Geotagging IP Packets for Location-Aware Software



CCC

Computing Community Consortium
Catalyst

By CCC Staff

The following Great Innovative Idea is from Tamraparni Dasu, Yaron Kanza, and Divesh Srivastava, of AT&T Labs-Research. They were **one of the Blue Sky Award winners at the ACM SIGSPATIAL 2017 conference** for their paper, *Geotagging IP Packets for Location-Aware Software-Defined Networking in the Presence of Virtual Network Functions*.



**Yaron Kanza, Tamraparni Dasu, and
Divesh Srivastava of AT&T Labs-Research**

The Idea

When routing IP packets on the Internet, the geographic location of routers and switches can be taken into account and utilized, to improve security and support applications such as copyright protection, location-based services, etc. Our main idea is to add to IP packets geotags with spatio-temporal information about the traveled route, e.g., the geographic location of the source. We suggest to use packet encapsulation to add geotags without interfering with the content of packets. We also suggest to use hashed locations, to reduce the size of tags, and to support cryptographically-signed geotags for applications in which there is a risk that geotags would be spoofed.

To cope with the rigidity of traditional routing technology, we propose the use of software-defined networking (SDN) and network function virtualization (NFV) as technologies that would facilitate geotagging and would add flexibility to it. Geotagging applications would be deployed as virtual network functions, and the control over the routing, which SDN provides, would be used to route packets via appropriate virtual network functions, for adding, removing or using geotags. This

will create a synergy between networking and spatio-temporal technologies, to improve both the network management and location-based services.

Impact

Adding geotags to IP packets has the potential to define new types of applications that combine networking technologies with spatio-temporal algorithms and systems, and it may also strengthen existing networking capabilities. It can be used for geofencing or geoblocking, to restrict network flows or the delivery of content to specific areas, e.g., for protecting sensitive data transfer, for copyright protection, etc. Geotagged IP packets could provide useful information about the interrelationships between geographic locations, times and anomalies in network traffic, to understand better the dynamics of large-scale networks and improve them. For location-based services, reliable knowledge of the origin of requests could simplify and improve the service, e.g., by providing service to devices in which the GPS receiver is disabled. Clearly, privacy restrictions should still be maintained.

The ability to take into account spatio-temporal information when routing IP

packets may be used to design new types of routing, e.g., adding geospatial restrictions for security, but also for learning about network usages and about connections between people, e.g., finding correlations between connections in the cyberspace and real-world geographic connections. This may introduce research questions in economy, social sciences, demography, etc. It may also require developing appropriate tools to cope with geotagging and the spatial analysis of high-volume flows of packets.

Other Research

We conduct research in various areas, including data management, data quality, database systems, statistics, privacy, spatial databases, networking, and more.

Tamraparni Dasu is a subject matter expert in data quality, stream mining, and statistics. Yaron Kanza is a subject matter expert in spatial databases, spatial applications, graph databases, data integration, and management of data on the World-Wide Web. Divesh Srivastava is a subject matter expert in data management, database systems, data integration, data quality, data privacy, data streams and more.



Great Innovative Idea (*continued*)

Researcher's Background

Tamraparni Dasu is a member of the Database Research Department at AT&T Labs-Research. She received her Ph.D. from the University of Rochester, with a Masters in Mathematics from Indian Institute of Technology, New Delhi. She has co-authored the first technical book on data quality, "Exploratory Data Mining and Data Cleaning, John Wiley & Sons, 2003." She is an associate editor of the ACM Transactions on Data and Information Quality. Her research interests include nonparametric statistics, data mining and statistical approaches to data streams and data quality. She is also interested in literary translation and writing fiction.

Yaron Kanza is a member of the Database Research Department at AT&T Labs-Research. He received his Ph.D. from the Hebrew University of Jerusalem. After completing his Ph.D. he was a postdoctoral fellow at the University of Toronto. Before joining

AT&T he was a faculty member at the Technion – Israel Institute of Technology, and for two years he was a visiting assistant professor at Cornell Tech. He is an associate editor of the ACM Transactions on Spatial Applications and Systems.

Divesh Srivastava is the head of the Database Research Department at AT&T Labs-Research. He received his Ph.D. from the University of Wisconsin, Madison, and his B.Tech from the Indian Institute of Technology, Bombay. He is a Fellow of the ACM, the Vice President of the VLDB Endowment, and the managing editor of the Proceedings of the VLDB Endowment. He has presented keynote talks at several conferences. His research interests and publications span a variety of topics in data management.

Links

<http://www.research.att.com/>

To view more Great Innovative Ideas, please click [here](#).

John Hennessy and David Patterson Receive 2017 Turing Award

ACM has named John L. Hennessy, former president of Stanford University, and David A. Patterson, professor emeritus of the University of California, Berkeley, the recipients of the **2017 ACM A.M. Turing Award** for pioneering a systematic, quantitative approach to the design and evaluation of computer architectures that has produced an enduring impact on the microprocessor industry. Patterson is a former CRA board chair and will be a plenary speaker at the **2018 CRA Conference at Snowbird**, and Hennessy was a plenary speaker at the **2012 CRA Conference at Snowbird**.

From the [UC Berkeley release](#):

"Patterson and Hennessy are honored for their creation of an approach to designing faster, lower-power and reduced instruction set computer microprocessors, known in their field as RISC processors. Today, 99 percent of the more than 16 billion microprocessors produced annually are RISC processors, and they are found in nearly all smartphones, tablets and the billions of devices that comprise the Internet of Things. Patterson and Hennessy laid out their principles in their influential book, *Computer Architecture: A Quantitative Approach*, now in its sixth edition and studied by generations of engineers and scientists who have adopted and further developed their ideas.

The Turing Award carries a \$1 million prize, with financial support provided by Google. The award is named for Alan M. Turing, the British mathematician who articulated the mathematical foundation and limits of computing. Patterson and Hennessy will receive the award at an awards banquet on Saturday, June 23, 2018, in San Francisco."

[Click here to read the full UC Berkeley news release.](#)



David Patterson



John Hennessy



CRA and CERP Bid Farewell to Jane Stout

After serving for more than five years as CERP director, Jane Stout has left CRA to pursue a senior project director position with YOUNGOV. During Jane's tenure at CRA, she oversaw the Data Buddies Project; led CERP in evaluation work for the CRA-W, CCC, and CRA-E; and obtained an NSF award to conduct computing education research focusing on diversity. Jane also gave numerous talks and interviews on the importance of diversity in computing and shared CERP's research findings with the computing community.

While she will be missed by her colleagues at CRA, CERP, and the CRA-W community, we wish all the best for her as she embarks on this next stage of her career.

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Column Editor

Expanding the Pipeline
Patty Lopez, Intel

Professional Opportunities

Amherst College

Visiting Assistant Professor

The Department of Computer Science invites applications for a full-time position at the rank of visiting assistant professor, beginning in July 2018. This is a one-year appointment, with possible renewal for two additional years. The teaching responsibility is two courses per semester. Within the last decade, Amherst College has profoundly transformed its student body in terms of socioeconomic status, ethnicity, race, and nationality. Today, nearly one-quarter of Amherst's students are Pell Grant recipients; 45 percent of our students identify as domestic students of color; and 10 percent of our students are international students. The successful candidate must have a Ph.D. in computer science in hand or have fulfilled all requirements for the degree by the start of the appointment. We seek a colleague who is committed to excellence in undergraduate computer science education and who is comfortable teaching courses in a variety of areas. Amherst College is located in Western Massachusetts, about 1.5 hours' drive from Boston and 3 hours from New York City. The College is part the Five College Consortium, which supports collaborations with nearby Hampshire, Mount Holyoke, and Smith Colleges, and with the University of Massachusetts. Students and faculty enjoy top-notch computing facilities, including technology-equipped classrooms, multimedia laboratories, and a high-performance computing cluster.

Applicants should submit electronically to <https://apply.interfolio.com/49245>. Please send a cover letter, curriculum vitae, three confidential letters of recommendation and a brief teaching statement, which should include a description of their teaching experience and a discussion of what courses they feel prepared to teach. Review of applications will begin immediately and will continue until the position is filled.

Amherst College is an equal opportunity employer and encourages persons of all genders, persons of color, and persons with disabilities to apply. The college is committed to enriching its educational experience and its culture through the diversity of its faculty, administration, and staff.

For questions, contact the department chair, Prof. John Rager, at jer@cs.amherst.edu.

Bellevue College, WA

Computer Science Instructor

The Science Division is seeking qualified individuals for the Computer Science, Tenure-Track Full-Time Faculty #018005. This position will start Fall 2018.

Tenure-track faculty are expected to teach, assess, and advise students; participate in department, division, and college-wide governance; engage in ongoing professional development, including equity training.

Minimum qualifications include PhD or Master's degree in Computer Science

or related fields and 2 years of relevant teaching/training/work experience.

To apply, go to www.bellevuecollege.edu/jobs

Applications received by 03/05/2018 will be given first consideration.

Boston University

Lecturer in Computer Science

The *Department of Computer Science* in the College of Arts and Sciences at Boston University invites applications for a full-time lecturer position beginning July 1, 2018. The position entails teaching undergraduate courses that may include introduction to computer science for majors or non-majors, and other background undergraduate courses in computer science. The position may also involve teaching advanced undergraduate/early graduate courses if the expertise of an applicant matches departmental needs. The position also involves supervision of graduate student teaching fellows, graders, and undergraduate course assistants.

Candidates should be strongly committed to excellence in teaching. Applicants are expected to have a PhD or Masters degree in Computer Science or a related field. Applicants should submit a cover letter outlining teaching experience, curriculum vitae, sample of recent teaching evaluations, and three letters of reference to <https://academicjobsonline.org/ajob/jobs/10816>. Application reviews will begin immediately and continue until the position is filled.

Professional Opportunities

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.

Carnegie Mellon University

Post-Doctoral Fellow in Usable Privacy Position 1

Opening for a Post-Doctoral Fellow in Usable Privacy in the School of Computer Science at Carnegie Mellon University. This is to work on the Personalized Privacy Assistant project.

For details, please see: <https://www.privacyassistant.org/static/files/post-doc-opening-2018.pdf>

Carnegie Mellon University

Post-Doctoral Fellow in Usable Privacy Position 2

Post-doctoral opening at Carnegie Mellon University to work on Usable Privacy in the School of Computer Science. This opening starts in Spring 2018. Start date is negotiable.

For additional details: see: <https://usableprivacy.org/openings>

The Citadel

Tenure-Track Position in Computer Science

The *Department of Mathematics and Computer Science*

invites applications for a tenure-track faculty position in computer science at the Assistant Professor level beginning August 2018. Minimum qualifications include an earned Ph.D. in computer science and a commitment to excellence in teaching, research, and service. In addition, candidates should display the core values of The Citadel: honor, duty, and respect. Candidates from all areas of computer science are encouraged to apply, especially those with strong backgrounds in cybersecurity.

Located in beautiful Charleston, S.C., *The Citadel* is a fully accredited, public, comprehensive, co-educational college with a student body of 2300 undergraduate and 1000 evening and graduate students. *The Citadel* has been designated as a *National Center of Academic Excellence in Cyber Defense Education by National Security Agency and Department of Homeland Security*. The Department of Mathematics and Computer Science has 16 full-time faculty members covering the areas of mathematics, statistics, and computer science. The department offers B.S. in computer science, M.S. in computer and information science, a graduate certificate in cybersecurity, and minors in computer programming, management information systems, and cybersecurity. Teaching



Robotics Instructor

**(FT Tenure Track 10 month, with benefits)
Community College of Allegheny County**

Open until filled. Requirements: Master's degree preferred in engineering technology discipline or related field. Minimum requirement is a bachelor's degree with 3 years of experience in engineering or engineering technology field. Recent surveying experience is required for full-time civil engineering positions.

To view the full job posting and apply for this position, go to: <http://apptkr.com/1188677>

EOE/AA

responsibilities include undergraduate courses in computer science for majors and minors and graduate-level courses in our joint Master of Science program with the College of Charleston. A normal teaching load is nine-twelve hours per week with small class sizes.

The Citadel supports faculty scholarship and professional development. Internal funding is available for research, development, and travel. Salary and fringe benefits are competitive, and other benefits include convenient parking and access to the Citadel Beach House located on the Isle of Palms.

Applicants should submit a letter of application, curriculum vita, copies of transcripts, a statement of teaching philosophy, a statement of research plan, and at least three letters of recommendation with at least one that addresses applicant's teaching. All application materials should be submitted online at The Citadel Careers web site, <http://careers.pageuppeople.com/743/cw/en/job/495434/assistant-professor-in-computer-science>. If you have any questions or concerns while applying at the Citadel Careers web site, please call The Citadel's Human Resources Office at 843-953-6922.

Professional Opportunities

Questions about the position may be directed to Dr. Shankar M. Banik, *Chair, Computer Science Search Committee, Department of Mathematics and Computer Science, The Citadel, 171 Moultrie Street, Charleston, SC 29409*, phone: 843-953-5039, or email: shankar.banik@citadel.edu. Review of applications will begin on March 1, 2018, and will continue until the position is filled.

Applications from women and minorities are especially encouraged. The Citadel is an affirmative action/equal opportunity employer actively committed to ensuring diversity in all campus employment.

Colgate University

Visiting Assistant Professor of Computer Science

The Computer Science Department at Colgate University invites applications for one or more possible Visiting Assistant Professor positions beginning fall semester 2018. Appointments will be made for one year with the possibility of renewal. We encourage candidates in all areas of specialization to apply.

Each semester, candidates can expect to teach two courses plus associated laboratory sections. To support the candidate's scholarship, Colgate offers funding for travel, professional development, and student researchers.

Colgate is a highly selective undergraduate liberal arts college in central NY committed to promoting excellence in both teaching and research. Colgate is an Equal

Opportunity Employer; candidates from historically underrepresented groups, women, persons with disabilities, and protected veterans are encouraged to apply.

Review of applications will begin March 25, 2018 and will continue until available positions are filled. For more information, and to apply, visit <https://academicjobsonline.org/ajol/jobs/10957>.

ETH Zurich

Professor of Computer Science (Medical Informatics)

The Department of Computer Science (www.inf.ethz.ch) at ETH Zurich invites applications for a professorship with a focus on Medical Informatics.

Applicants should have an excellent record of internationally recognized research, which demonstrates a strong link to core computer science (machine learning and information systems) and applications in medicine and life science applications, especially in computational medicine, ubiquitous health monitoring, intelligent decision support systems and Biomedical data analysis/management. The computer science expertise of the successful candidate may be in the areas of data analytics, data management, cloud computing, computational medicine, possibly complemented by computational science or medical imaging.

The professor is expected to establish and lead a research group in the Department of Computer Science at ETH Zurich with close links to the University Hospital Zurich and

other medical centers in Switzerland and beyond. Moreover, she/he shall supervise doctoral candidates, teach courses in her/his own field of research, and participate in core courses of computer science. In addition to contributing to core computer science research the professorship is expected to play a significant role in the Personalized Medicine efforts of ETH Zurich and to establish collaborations with scientists in the life science and engineering disciplines.

The expectation is to fill the position with a tenured professor but excellent applications at the assistant professor level (tenure track) will also be considered. Assistant professorships have been established to promote the careers of younger scientists. ETH Zurich implements a tenure track system equivalent to other top international universities.

Please apply online:

www.facultyaffairs.ethz.ch

Applications include a curriculum vitae, a list of publications with the three most important ones marked, a statement of future research and teaching interests, and a description of the three most important achievements. The letter of application should be addressed to the President of ETH Zurich, Prof. Dr. Lino Guzzella. The closing date for applications is 30 April 2018. ETH Zurich is an equal opportunity and family friendly employer and is responsive to the needs of dual career couples. We specifically encourage women to apply.

Halmstad University

School of Information Technology Five Assistant / Associate Professor

Recent growth in research and education at Halmstad University is enabling a significant expansion. Over the next four years, the School will grow significantly. This announcement is for five full-time Assistant Professor or Associate Professor positions in the areas of Computer Science, Digital Forensics, Electronics, and Mathematics.

The department greatly values equality, diversity, and being a supportive and inclusive environment. Currently, we have too few women. In case of equal qualification, underrepresented groups will be prioritized.

More information and for instructions about how to apply can be found online here: <https://hh.mynetworkglobal.com/se/what:job/jobID:193412>

Johns Hopkins University

Teaching Track Faculty

The Whiting School of Engineering at Johns Hopkins University seeks applicants for a full-time teaching position in the area of engineering computation and programming. This is a career-oriented, renewable appointment that is responsible for the development and delivery of introductory computing courses to undergraduate students from majors throughout the university. Teaching faculty members are also encouraged to engage in departmental and university service and may have advising responsibilities. Opportunities

to teach upper-level and graduate level courses may also be available, depending on the candidate's background. Extensive grading support is given to all instructors. The Schools of Engineering and of Arts and Sciences have a well-established non-tenure track career path for full-time teaching faculty culminating in the rank of Teaching Professor.

Johns Hopkins is a private university known for its commitment to academic excellence and research. The teaching faculty member will be appointed in the academic department within the Whiting School of Engineering that most closely aligns with their academic background. See the school webpages at <https://engineering.jhu.edu/> for additional information about the school, including undergraduate programs and current course descriptions.

Applicants for the position must have a Masters degree or Ph.D. in Computer Science, Computer Science Education, Engineering Education or an engineering discipline in a closely related field, demonstrated excellence in and commitment to teaching, and excellent communication skills. Candidates with experience teaching programming in C, C++, Java, Python or MATLAB are preferred.

Applicants should apply using the online application <https://apply.interfolio.com/49117>. Please submit a cover letter, curriculum vitae, teaching statement, and recent teaching evaluations. Three letters of reference will also be required. Letter writer information should be provided in the

application. Applications will be evaluated on a rolling basis. Questions should be directed to WSElecSearch@jhu.edu.

The Johns Hopkins University is committed to active recruitment of a diverse faculty and student body. The University 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. Consistent with the University's goals of achieving excellence in all areas, we will assess the comprehensive qualifications of each applicant.

The Whiting School of Engineering is committed to building a diverse educational environment.

King's College

Visiting Assistant Professor of Computer Science

King's College anticipates an opening for a visiting Assistant Professor of Computer Science starting Fall 2018. Candidates must hold an advanced degree, preferably a Ph.D., in Computer Science from an accredited institution by the start date. Teaching experience preferred. The successful candidate will teach a broad range of computer science courses as well as introductory courses to non-majors. Normal teaching load is 12 hours per semester. Primary interest and commitment must be to quality instruction and to formally training and mentoring young computer scientists.

To apply, send one *.pdf file containing a letter of interest, CV, teaching philosophy (two-page maximum length), transcripts, and three letters of professional reference to hrjobs@kings.edu. Review of applications will begin immediately and continue until the position is filled.

King's College is a private, Catholic, teaching college of the liberal arts and sciences and pre-professional programs sponsored by the Congregation of Holy Cross. It serves over 2400 full-time and part-time graduate and undergraduate students. A rigorous core curriculum provides the foundation for all majors. The College is located near downtown Wilkes-Barre, on the edge of the Pocono Mountains. King's is committed to recruiting a diverse faculty and student body and welcomes applications from persons of traditionally under-represented groups. EOE www.kings.edu

Lafayette College, Easton, PA

Visiting Assistant Professor Position in the Department of Computer Science

Lafayette College is a highly selective, private, liberal-arts college located in the Lehigh Valley of Pennsylvania. The college is 70 miles north of Philadelphia and 70 miles west of New York City.

The Computer Science Department at Lafayette College invites applications for a one-year Visiting Assistant Professor position starting in the fall of 2018, with the possibility of renewal. All areas of CS will be considered. The Computer Science Department at

Lafayette College has five full-time, tenure-track members and is accredited by ABET. The teaching load for visitors is 6 courses per year.

Requirements:

- Applicants with earned Master's degrees in CS will be considered, but preference will be given to applicants with an earned Ph.D. in CS or closely aligned fields by or near the time of appointment.

To Apply:

For a detailed description of the position, and to apply, please visit <http://apply.interfolio.com/49253>. Please submit a cover letter, a current CV, three letters of reference, and a teaching statement. Your cover letter should address how your teaching, mentoring, and/or community service might support Lafayette College's commitment to diversity and inclusion articulated in the College's diversity statement: <http://www.lafayette.edu/about/diversity-statement/>. Questions may be emailed to the search committee chair at compsci@lafayette.edu. Application review will begin 04/01/2018 and continue until the position is filled.

Lafayette College is committed to creating a diverse community: one that is inclusive and responsive, and is supportive of each and all of its faculty, students, and staff. All members of the College community share a responsibility for creating, maintaining, and developing a learning environment in which difference is valued, equity is sought, and inclusiveness is practiced. Lafayette College is an equal opportunity employer.

Michigan Technological University

Department of Computer Science

Lecturer Position

Michigan Technological University Department of Computer Science invites applications for the position of Lecturer. The successful candidate should be able to teach across the CS curriculum and cybersecurity field, and is expected to work with the faculty to incorporate cybersecurity related topics into existing courses.

An applicant must have earned an MS or PhD degree in Computer Science, Computer Engineering, or closely related area from an accredited institution. The department places a strong emphasis on balancing effective teaching with cutting-edge research, outreach, and service. Candidates are expected to demonstrate potential for excellence in teaching and the ability to contribute to the departmental service needs. The expected teaching load is three courses per semester. Salary is negotiable depending upon qualifications. Lecturers are appointed for two-year, renewable terms, and there is opportunity for promotion to Senior Lecturer and Principal Lecturer positions.

The Department has 20 faculty, 460 undergraduate students in two degree programs (Computer Science and Software Engineering) and 50 students in MS in Computer Science, MS in Cybersecurity, and PhD in Computer Science programs. Michigan Technological University is a research university in Houghton, Michigan with 7,100 students and 400 faculty with

Professional Opportunities

educational and research programs in computing, engineering, physical and social sciences, forestry, humanities and business. Michigan Tech is located in Michigan's scenic Upper Peninsula and is surrounded by Lake Superior and nearby forests. The community offers year-round recreational and cultural opportunities.

Review of applications will begin immediately and continue until the position is filled. Women and underrepresented minorities are particularly encouraged to apply. Applications should be submitted online at www.jobs.mtu.edu. To learn more about the opportunity, please visit <http://www.jobs.mtu.edu/postings/6468> or contact the Department Chair, Dr. Min Song, at mins@mtu.edu or (906) 487-2209. Applications received by March 2, 2018 will receive full consideration.

Michigan Tech is an ADVANCE institution, one of a limited number of universities in receipt of NSF funds in support of our commitment to increase diversity and the participation and advancement of women in STEM. Michigan Tech is a member of the AGEP network of universities dedicated to increasing the number of underrepresented minorities obtaining graduate degrees in STEM fields. Michigan Tech acknowledges the importance of supporting spouses/partners and retaining a quality workforce. Michigan Tech is committed to offering career exploration advice and assistance whenever feasible and appropriate at the University and in the local community. See Partner Engagement Program for additional information.

Michigan Technological University is an Equal Opportunity Educational Institution/Equal Opportunity Employer, which includes providing equal opportunity for protected veterans and individuals with disabilities.

Milwaukee School of Engineering (MSOE)

Computer Science Faculty Positions

Milwaukee School of Engineering (MSOE) recently announced major investments in the growth of MSOE's academic programs including a new \$34M facility, the Dwight and Dian Diercks Computational Sciences Hall, and a new undergraduate degree in Computer Science (CS). Diercks Hall will house the new CS program and the established undergraduate program in Software Engineering (SE) as well as a GPU-accelerated supercomputer. Applications are requested to fill multiple CS faculty positions at any rank. This is an exciting opportunity for the right candidates to contribute toward this significant endeavor.

Applicants must have an earned doctorate degree in CS, computational science, data analytics, software engineering, or closely related field by the beginning date of appointment. Candidates with expertise in any field of CS are encouraged to apply; particular areas of interest include topics associated with artificial intelligence. Proficiency in oral and written communication skills is required.

MSOE expects and rewards a strong primary commitment to excellence in teaching. Continuous improvement of

teaching and continued professional development are expected. MSOE enjoys strong ties with numerous businesses and industries. MSOE CS and SE faculty work closely with MSOE business and industry partners on a variety of curricular, co-curricular, and consulting projects.

MSOE is a private, primarily undergraduate, polytechnic university with programs in engineering, math, business, and nursing. The EECS department offers an undergraduate degree in CS; undergraduate engineering degrees in biomedical, computer, electrical, and software engineering; and a master's degree in engineering. The ABET-accredited undergraduate software engineering program at MSOE had its first graduates in 2002, among the first in the US. The new CS program builds on existing strengths of the software engineering program. ABET-accreditation of the new CS program will be pursued. More information about the new CS program and building are available at <https://www.msoe.edu/about-msoe/computer-science/>

To apply, please visit our website at www.msoe.edu/hr. When applying, please upload a single pdf file which includes: 1) a letter of interest; 2) a detailed resume; 3) contact information for three professional references; 4) statement of technical areas of teaching interest; and 5) if available, evidence of successful teaching. The review of applications will begin when received and continue until the positions are filled.

It is the policy of MSOE to provide equal employment opportunity to all individuals

regardless of their race, ethnicity, color, creed, religion, sex, age, national origin, physical or mental disability, military and veteran status, sexual orientation, gender identity, genetic characteristics, marital status or any other characteristic protected by local, state or federal law. This policy applies to all jobs at the University and to all the terms, benefits, privileges, and conditions of employment/enrollment.

NEC Laboratories America

Researcher - Data Science

NEC Laboratories America (<http://www.nec-labs.com/>) conducts research in support of NEC's US and global business. Our lab has a broad research program that covers many areas and maintains a balance of fundamental and applied research.

The Data Science Department (<http://www.nec-labs.com/research-departments/data-science/data-science-home>) performs research on all aspects of data analytics and mining. We are creating innovative analytics from big data to simplify and automate the operation of complex physical systems (e.g., automobiles, power plants, smart city, etc.) as well as large-scale IT systems and services. We have several ongoing big data analytics projects including massive time series modeling, heterogeneous data analysis, and large scale graph mining etc. Our group brings together experts in machine learning, artificial intelligence, data mining, statistics, signal processing, pattern recognition and big data

processing systems. We build technologies to solve real world problems and grow NEC's business. Our research leads to both award-winning NEC products/solutions and numerous publications in top conferences.

Our group is looking for multiple researchers to work in the areas of artificial intelligence, machine learning and data mining. The ideal candidates must have expertise in one of the above areas, and can develop algorithms to analyze massive data and build innovative applications. He/she must have a PhD in CS/CE with a strong publication record in at least one of the following areas:

- Machine learning and AI (especially neural networks and deep learning)
- Data mining and statistical learning
- Time series analysis and prediction
- Text mining and information retrieval
- Graph and information network mining
- Large scale optimization and learning
- Signal processing, image processing and computer vision

NEC Laboratories America is located in Princeton, NJ, home of the Princeton University and one of New Jersey's most beautiful and idyllic towns. The area offers many exciting cultural, entertainment and outdoor activities. The office is minutes away from Princeton University and an hour from New York, Philadelphia, and the Atlantic Ocean. For more information about NEC labs, access <http://www.nec-labs.com/>, and submit your CV and research

statement through our career center at https://www.appone.com/MainInfoReq.asp?R_ID=1802426.

EOE-M/F/D/V

Northeastern Illinois University

Assistant Professor

The Computer Science Department of Northeastern Illinois University in Chicago invites individuals to apply for a tenure-track, assistant professor position, starting August 2018. A Ph.D. in Computer Science or closely related field is required. We will consider applicants from all areas of computer science, especially: Software Engineering, Cryptography, Security & Systems Research, Operating Systems, and Distributed Systems. Review of applications will begin on February 15, 2018 and will continue until the position is filled. AA/EOE. See: <http://cs.neiu.edu/>

Northeastern Illinois University is an Equal Opportunity/Affirmative Action Employer and invites applications from Women, Minorities, Veterans and Persons with Disabilities, as well as Other Qualified Individuals. Northeastern Illinois University's positions are contingent upon the University's receipt of its State of Illinois appropriation.

Professional Opportunities

NYU Abu Dhabi

Assistant Instructor Computer Science

New York University has established a campus in Abu Dhabi, United Arab Emirates, and invites applications for an Assistant Instructor position in the field of Computer Science. We encourage applicants with experience in teaching of Computer Science undergraduate courses. A B.Sc. in Computer Science or a B.Eng. in Computer Engineering is required. Candidates with a Masters degree in Computer Science, Computer Engineering, or related fields are encouraged to apply, and those who have a Ph.D. in Computer Science, Computer Engineering, or related fields will also be considered in special cases.

The Assistant Instructor will support NYU Abu Dhabi's education mission by assisting in the instruction of the Computer Science courses that are part of the Computer Science undergraduate curriculum. The instructor will also be responsible for taking part in departmental activities and responsibilities, and providing assistance with the preparation, development, instruction, and assessment of recitations and labs. During January Term and Summer Term, Assistant Instructors will support teaching and research through a variety of activities that may include research with a faculty member or conducting instructional enhancement projects, or both. Instructors undergo training during the last two weeks of August each academic year. Salaries are extremely

competitive with a generous benefits package, and appointments are for two to three years with the opportunity to renew. The Assistant Instructor is also expected to acquire, set up, and maintain hardware and software computing equipment required for teaching and research in Computer Science, as well as provide instrumentation support for faculty and students regarding research projects. The Assistant Instructor is expected to test-drive new equipment and software, and liaison with the main IT department regarding collaborative projects. It is desirable for the Assistant Instructor to have experience in areas such as hosting systems, networking, virtualization, databases, solid modeling, and distributed systems.

Applicants should submit a resume, teaching statement, cover letter, and three letters of reference in PDF format to be considered. Please visit our website at: <https://apply.interfolio.com/49110> for instructions and other information on how to apply. Applications are open until filled. If you have any questions, please e-mail nyuad.science@nyu.edu

About NYUAD:

NYU Abu Dhabi is a degree-granting research university with a fully integrated liberal arts and science undergraduate program in the Arts, Sciences, Social Sciences, Humanities, and Engineering. NYU Abu Dhabi, NYU New York, and NYU Shanghai, form the backbone of NYU's global network university, an interconnected network of portal campuses and academic centers across six continents that enable seamless

international mobility of students and faculty in their pursuit of academic and scholarly activity. This global university represents a transformative shift in higher education, one in which the intellectual and creative endeavors of academia are shaped and examined through an international and multicultural perspective. As a major intellectual hub at the crossroads of the Arab world, NYUAD serves as a center for scholarly thought, advanced research, knowledge creation, and sharing, through its academic, research, and creative activities.

UAE Nationals are encouraged to apply.

OSU-Cascades

Computer Science Instructor

Computer Science Instructor positions offered at OSU-Cascades in Bend, Oregon. Masters required. Start date: Sept 1, 2018. Date for full consideration: 4/6/18. Posting Closes 4/13/18.

For position description and application process, please see <https://jobs.oregonstate.edu/postings/56947>.

Plymouth State University

Assistant/Assoc Professor (Tenure Track)

Plymouth State University seeks a tenure-track Robotics faculty, starting Fall 2018 or Spring 2019. Reference <https://jobs.usnh.edu/postings/28879> for details.

Swarthmore College

Computer Science Lab Lecturer

The Department of Computer Science is currently accepting applications for a Lab Lecturer. The Lab Lecturer position is full time during the academic year (Fall and Spring semesters) with summers off. The start date is August 15, 2018.

The Lab Lecturer position is an Instructional Staff position at the college. The responsibilities of the position include, but are not limited to: teaching lab sections of the introductory courses in the Computer Science Department; working with faculty to develop lab assignments for the introductory courses; creating lab assignment write-ups and documentation on tools used in introductory labs; supporting faculty in creating and setting up lab code examples, documentation, and software tools for lab work; lab grading and coordinating student graders; and holding regular office hours and helping students in the lab during open lab hours. More information about the Computer Science Department can be found on our website at www.cs.swarthmore.edu.

Swarthmore College is a small, selective, liberal arts college located 10 miles outside of Philadelphia. The Computer Science Department offers majors and minors at the undergraduate level.

A master's degree or Ph.D. in computer science or a related field with extensive computer science background is required. Prior teaching experience at the college level is preferred. The strongest candidates will be expected to demonstrate a

commitment to creative teaching that speaks to and motivates undergraduates from diverse backgrounds.

Applications should include a curriculum vita, a teaching statement, and two letters of reference that speak to the candidate's teaching ability.

Applications are being accepted online at <http://apply.interfolio.com/48652>. Applications will continue to be accepted until the position is filled.

Swarthmore College actively seeks and welcomes applications from candidates with exceptional qualifications, particularly those with demonstrable commitments to a more inclusive society and world. Swarthmore College is an Equal Opportunity Employer

The Ohio State University

Department Chair for the Department of Computer Science and Engineering

The Department of Computer Science and Engineering at The Ohio State University seeks candidates for the position of Department Chair. The Chair will drive the department forward towards its mission and set a vision for its growth, in alignment with the College's strategic plan.

Applicants must have a doctoral degree in Computer Science & Engineering or closely related field, as well as experience leading in and contributing to diverse learning environments. Previous leadership experience in an academic setting and budget oversight experience are desired but not required. Applicants

should demonstrate experience mentoring students and junior faculty. In addition to such experiences, a successful applicant must possess a commitment to and demonstrated record of excellence in research, and a commitment to excellence in teaching. This position requires strong communication skills and excellent judgment, with the ability to manage multiple priorities in a fast-paced environment and work collaboratively with the college leadership.

Applications will be accepted until the position is filled. An initial review of applications will begin March 15, 2018. Additional details and application instructions are available at <https://academicjobsonline.org/ajol/jobs/10869>

The Ohio State University is an equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation or identity, national origin, disability status, or protected veteran status.

Trinity College

Visiting Assistant Professor/Visiting Lecturer in Computer Science

Applications are invited for a two-year position at the rank of Visiting Assistant Professor or Visiting Lecturer to start in Fall 2018.

Applications should be submitted to: <https://trincoll.peopleadmin.com/>.

Consideration of applications will continue until the position is filled.

UNC Charlotte Urban Institute

Director

Institute for Social Capital (ISC)

Seeking an experienced individual as faculty to oversee the administration and research associated with the ISC Community Database, an integrated data system that holds administrative data from over forty community agencies in Charlotte-Mecklenburg for research purposes.

Preferred qualifications: Doctoral degree in a field related to social science research or data science; experience in leading trans-disciplinary research teams; experience with children, youth & family issues; administrative experience managing staff, budgets and organizational planning; outstanding interpersonal skills.

This is a 12-month position starting approximately July 2018.

To learn more about the position and apply go to: <https://jobs.uncc.edu/postings/20455>

Review of applications will begin in March 2018 and continue until the position is filled.

AA/EOEC

University of British Columbia

Head of the Department of Electrical & Computer Engineering (ECE)

The University of British Columbia (UBC), Vancouver Campus, seeks outstanding

candidates for the position of Head of the Department of Electrical & Computer Engineering (ECE). The new Head will be uniquely positioned to build on the considerable strengths and history of the department to lead the next chapter of technological revolution. The anticipated start date is September 1, 2018 or upon a date to be mutually agreed.

The University of British Columbia is a global centre for research and teaching, consistently ranked among the 40 best globally, and now places among the top 20 public universities in the world. Since 1915, UBC's West Coast spirit has embraced innovation and challenged the status quo. Its entrepreneurial perspective encourages students, staff and faculty to challenge convention, lead discovery and explore new ways of learning. At UBC, bold thinking is given a place to develop into ideas that can change the world. As one of the world's leading universities, The University of British Columbia creates an exceptional and diverse learning environment that fosters global citizenship, advances a civil and sustainable society, and supports outstanding research to serve the people of British Columbia, Canada and the world.

The Department of Electrical & Computer Engineering is one of the largest academic departments at UBC and the largest engineering department in the Faculty of Applied Science. It offers educational programs leading to the Bachelor of Applied Science (BASc), Master of Applied Science (MASc), Master of Engineering (MEng), Master of Engineering Leadership in Dependable Software Systems (MEL-DSS), and doctoral

(PhD) degrees. Its undergraduate programs are consistently in high demand and attract some of UBC's best students. Its graduate programs, with a strong interdisciplinary research culture and a history of pioneering contributions and innovations, are among the largest at UBC.

The Head is responsible for visioning, strategic planning, operations, finances, academic affairs, and external relations. The successful candidate will be committed to enhancing the University's education, research, and service missions and will possess an exceptional scholarly record, leadership skills, and strategic capacity to advance the department. Additional essential qualifications include successful administrative experience in a university, industry, or government environment, the ability to effectively engage a broad range of internal and external constituencies, and a demonstrated commitment to diversity, equity and inclusion. The Head is expected to hold a Ph.D. in Electrical & Computer Engineering or a closely related field, and must qualify for appointment at the rank of Professor with tenure in the Department of Electrical & Computer Engineering at UBC. The Head is also expected to be registered, or be eligible to register, with Engineers and Geoscientists British Columbia (www.egbc.ca).

Applicants should submit a cover letter describing their vision for the UBC ECE Department and their key accomplishments, curriculum vitae, and names and contact information for four referees. Review of applications will begin

Professional Opportunities

April 16, 2018 and will continue until the position is filled.

For further information and details on how to apply, please download the Appointment Details via the Perrett Laver website by visiting <https://candidates.perrettlaver.com/vacancies/> and quoting 3493. For more information about UBC, visit www.ubc.ca. To learn more about the Department of Electrical & Computer Engineering, visit www.ece.ubc.ca.

Applicants are asked to complete the following equity survey: https://ubc.ca/qualtrics.com/jfe/form/SV_8iyDuBJSBmlUI7P. The survey information will not be used to determine eligibility for employment, but will be collated to provide data that can assist us in understanding the diversity of our applicant pool and identifying potential barriers to the employment of designated equity group members. Your participation in the survey is voluntary and anonymous. This survey takes only a minute to complete. You may self-identify in one or more of the designated equity groups. You may also decline to identify in any or all of the questions by choosing "not disclosed".

Equity and diversity are essential to academic excellence. An open and diverse community fosters the inclusion of voices that have been underrepresented or discouraged. We encourage applications from members of groups that have been marginalized on any grounds enumerated under the B.C. Human Rights Code, including sex, sexual orientation, gender identity or expression, racialization,

disability, political belief, religion, marital or family status, age, and/or status as a First Nation, Metis, Inuit, or Indigenous person. All qualified candidates are encouraged to apply; however Canadians and permanent residents of Canada will be given priority.

University of Colorado Boulder

High Assistant, Associate and Full T/TT Position in Data Mining, Machine Learning, Information Retrieval or Information Visualization

The recently established Department of Information Science at the University of Colorado Boulder seeks outstanding candidates for a tenure line faculty appointment at all ranks, though assistant candidates must have at least 3 years in rank. Successful candidates will help shape the future of Information Science—as a Department and as a discipline. The Department takes a progressive computational, social and humanistic approach to Information Science, focusing on human-data interaction in all its diverse forms and contexts.

We seek candidates who work in data mining, machine learning, information retrieval or information visualization. Successful candidates will take a strong role in the organizational and intellectual life of the department. Applications are being reviewed as received for starting dates of Fall 2018 or Spring 2019.

The University of Colorado is an Equal Opportunity Employer committed

to building a diverse workforce. We encourage applications from women, racial and ethnic minorities, individuals with disabilities, and veterans. For more information and to apply, see <https://cu.taleo.net/careersection/2/jobdetail.ftl?job=12894&lang=en>.

University of Edinburgh

Lecturer/Senior Lecturer/Reader in Database Systems

The School of Informatics at the University of Edinburgh invites applications for a Lecturer/Senior Lecturer/Reader (Assistant Professor/Associate Professor) in the area of Database Systems.

Closing date: 15 March 2018

To apply please follow the link below: https://www.vacancies.ed.ac.uk/pls/corehrrecruit/erq_jobspec_version_4.jobspec?p_id=042617

The University of Hong Kong

Tenure Track Faculty Position - FinTech

Applications are invited for Associate Professor/Assistant Professor, full-time positions tenable from July 1, 2018. Applicants should have a Ph.D. degree in Computer Science, Computational Finance, Statistics or a related field, with research interest in one of the following areas: security and privacy issues in financial applications, emerging technologies related to finance such as blockchain, cryptocurrency, e-payment, data analytics related to finance, computational and

quantitative finance, and any area related to financial technology. Applicants should have a strong commitment to research and teaching. A solid track record in research is essential.

More information can be found at:
<http://jobs.hku.hk/jd.php?id=201800220>

Application and enquiries should be sent to
recruitment@cs.hku.hk

University of Kentucky

Faculty in Biomedical Informatics

The University Of Kentucky College Of Medicine invites applications for the position of Assistant, Associate, or Full Professor in the Division of Biomedical Informatics with priority on senior-level candidates. This is an instrumental position in building the new division, and this position will conduct research and education in one or more of the following areas:

- Clinical and translational data science with applied emphasis
- Biomedical Informatics, addressing user interfaces, data integration, or security and privacy with the development of tangible tools and systems using semantic-based and advanced software engineering methodology
- Cancer informatics, for precision medicine using integrated data resources such as electronic health records, electronic pathology reports, clinical trials, and next generation sequencing
- Data analytics and visualization, for structured, semi-structured and unstructured data (clinical texts, web media, imaging, signal and sensory data)

This position will work in both individual lab and team settings to advance clinical and translational research in key institutional priority areas such as substance abuse, cardiovascular and neurological diseases, and obesity and cancer.

The Division of Biomedical Informatics is a unique department with a multidisciplinary faculty positioned for opportunities for interdisciplinary cross-talk and



Temporary Lecturer in Computer Science

The Department of Computer Science at the University of California, Santa Barbara invites applications for a pool of qualified temporary lecturers to teach undergraduate or graduate Computer Science courses. Screening of applicants is ongoing and will continue as needed. The first review date is December 21, 2017.

The number of positions varies from quarter to quarter, depending on the needs of the department. Positions may range from one quarter to one year with the possibility of reappointment depending on performance and further departmental need. Terms and conditions of employment are subject to UC policy and any appropriate collective bargaining agreement.

The minimum qualification required to be an applicant is a Masters in Computer Science or related field. Preferred qualifications are a PhD in Computer Science or related field and at least one year of teaching experience. Salary is based on UC's salary scales and depends upon qualifications. The department is especially interested in candidates who can contribute to the diversity and excellence of the academic community through teaching.

To apply, please go to the following link: <http://apptkr.com/1181932>. Applicants should submit a cover letter and curriculum vitae. A teaching statement is optional but recommended. Applicants should also arrange to have 2 letters of recommendation submitted on their behalf via UC Recruit.

The posting will remain open until October 31, 2018 to accommodate department needs. If you would like to continue to be considered after that time, and the pooled position is advertised again, you will need to submit a new application.

Please note: The use of a lecturer pool does not guarantee that an open position exists at the time you are applying. See the review date specified in UC Recruit to learn whether the department is currently reviewing applications for an upcoming opening. If there is no future review date specified, your application may not be considered at this time.

The University of California is an Equal Opportunity/Affirmative Action 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.

collaboration. The Biomedical Informatics Division/environment is currently housed within the Department of Internal Medicine/ College of Medicine and is embarking on a period of major expansion within the University. Opportunities for collaborative endeavors with many and varied units within the University of Kentucky will result from this focus. The University is committed to the development of biomedical informatics and has made this area a priority. Efforts focused on the Biomedical Informatics expansion will create direction for the academic entity and stimulate research across the campus, building relationships and infrastructure for the success of this program under the overall umbrella of the Institute of Biomedical Informatics (ibi.uky.edu).

MD and/or PhD is required, as is experience in developing or having established a funded research program in computational health science and/or biomedical informatics and /or data science, commensurate with an applicant's career stage. The review of applications will begin immediately and will continue until the position is filled. To apply, please visit the UK Jobs site here: <http://ukjobs.uky.edu/postings/176094>

Please include along with application:

- Current Curriculum Vitae
- Letter of Application
- Research Statement (uploaded under Specific Request 1)
- Teaching Statement (uploaded under Specific Request 2)

Please provide the names and contact information for three references when prompted in the application. This information may be utilized to solicit recommendation letters from your references within the employment system.

The University of Kentucky is an Equal Opportunity University that values diversity and inclusion. Individuals with disabilities, minorities, veterans, women, and members of other underrepresented groups are encouraged to apply.

University of Manitoba

*Associate/Professor - Position # 24547
College of Rehabilitation Sciences, Rady
Faculty of Health Sciences*

The University of Manitoba's College of Rehabilitation Sciences, Rady Faculty of Health Sciences is seeking applications for outstanding candidates for a tenured or tenure-track position in Ambient Assisted Living (AAL) at the rank of Associate Professor or Professor.

For further information and a detailed description of the position, please visit: https://viprecprod.ad.umanitoba.ca/DEFAULT.ASPX?REQ_ID=01519

University of Memphis

Assistant Professor Tenure Track

The Department of Computer Science at the University of Memphis is seeking candidates for multiple Assistant Professor positions beginning Fall 2018. Exceptionally

qualified candidates in all areas of computer science are invited while candidates with core expertise in systems, architecture, data science, security & privacy, and software engineering and an interest in emerging and interdisciplinary applications such as smart health, smart cities, smart transportation, smart energy, and CS education are particularly encouraged to apply. Successful candidates are expected to develop externally sponsored research programs, teach both undergraduate and graduate courses and provide academic advising to students at all levels.

Applicants should hold a PhD in Computer Science, or related discipline, and be committed to excellence in both research and teaching. Salary is highly competitive and dependent upon qualifications.

The Department of Computer Science (www.cs.memphis.edu) offers B.S., M.S., and Ph.D. programs as well as graduate certificates in Data Science and Information Assurance, and an M.S. program in Bioinformatics (through the College of Arts and Sciences). The Department has been ranked 55th among CS departments with federally funded research. The Department regularly engages in large-scale multi-university collaborations across the nation. For example, CS faculty lead the NIH-funded Big Data "Center of Excellence for Mobile Sensor Data-to-Knowledge (MD2K)" and the "Center for Information Assurance (CFIA)". In addition, CS faculty work closely with multidisciplinary centers at the university such as the "Institute for Intelligent Systems (IIS)".

Known as America's distribution hub, Memphis ranked as America's 6th best city for jobs by Glassdoor in 2017. Memphis metropolitan area has a population of 1.3 million. It boasts a vibrant culture and has a pleasant climate with an average temperature of 63 degrees.

To apply, please visit <https://workforum.memphis.edu/>. Include a cover letter, curriculum vitae, statement of teaching philosophy, research statement, and three letters of recommendation. Direct all inquiries to Corinne OConnor (cconnor2@memphis.edu).

A background check will be required for employment. The University of Memphis is an Equal Opportunity/Equal Access/Affirmative Action employer committed to achieving a diverse workforce.

University of Missouri - St. Louis

Faculty Positions in Computer Science

The Department of Mathematics and Computer Science at the University of Missouri-St. Louis invites applications for two non-tenure-track positions in Computer Science to begin Fall 2018.

For more details and application information, please [click here](#).

University of Virginia

Research Scientist

The University of Virginia's School of Engineering and Applied Science has openings for up to two Research Scientists.

The role of the Research Scientist will be to support efforts in developing advanced techniques and software to support real-time cyber threat detection, characterization, and protection to bolster defenses across multiple enterprise networks. The position also entails working with graduate students, preparing technical presentations and reports, developing code, maintaining computing infrastructure and systems, and identifying/leading new research capabilities.

Specific responsibilities may include: Developing novel algorithms for detecting network threats; Leading/publishing independent research; Developing software to capture and analyze network traffic; Benchmarking and evaluating network cyber security solutions; Developing documentation; Working with team members to develop software libraries and other tools; Assisting team members with basic research and managing contract progress and reporting to sponsors; Assisting team members in program meetings.

The Research Scientist is expected to be self-directed, exhibit leadership skills, able to select appropriate research problems and techniques, proficient in software engineering best practices, able to adapt techniques to the specific problem at hand, able to mentor graduate students, and able to work with other teams.

Strong candidates will: a) have an M.S. or Ph.D. in computer science/engineering or a related field at the time of hire; b) have expertise in monitoring and analyzing network traffic; c) have strong programming and software engineering

skills; and d) have strong written/verbal communication skills. Particularly strong candidates will have: a) expertise in machine learning techniques related to networks security; b) expertise in analysis of vulnerabilities and exploits; c) have a record of peer-reviewed publications in one or more of the following areas: cyber security, scalable and high-performance networks and computing, high-performance run-time systems; d) strong systems experience; e) have competence in providing instruction and translating technical knowledge to new audiences and in providing one-on-one technical support.

Applicants must apply online at: <https://jobs.virginia.edu> and search by Posting Number 0622737. Applications should include a cover letter summarizing the candidate's interest/qualifications for the position, a resume, samples of at least two of the candidate's best publications, and a list of three professional references. The University of Virginia is an active dual-career employer.

With one of the highest graduation rates of minority undergraduate students and one of the highest percentages of women engineering students among public universities, the University of Virginia is fundamentally committed to increasing the diversity of its faculty and staff. UVA is an affirmative action and equal opportunity employer. We welcome nominations of and applications from women, members of minority groups, veterans and individuals with disabilities. We also welcome others who would bring additional dimensions of diversity to the university's research and

teaching mission. We believe diversity is excellence expressing itself through every person's perspectives and lived experiences.

Virginia State University

Tenure-Track Faculty Positions in Computer Science

The Department of Engineering and Computer Science in the College of Engineering and Technology at Virginia State University is seeking student-centered applicants to fill several tenure-track faculty positions in computer science with special interests in Data Science and Cyber Security. Specializations in Cyber Physical Systems; Networking; Software Engineering; Artificial Intelligence; Human Computer Interaction, and other dynamic areas will also be considered. The successful candidate must have the potential to, or demonstrate the ability to, establish an externally funded research program. The department offers B.S. and M.S. degrees in computer science.

For complete details of position descriptions and the application process, please visit <http://www.vsu.edu/vsujobs/position-F0507.php>. Positions will remain open until filled.

Virginia State University is an equal opportunity employer. Women, minorities, persons with disabilities, and veterans are encouraged to apply.

Williams College

Visiting Professor of Computer Science

The Department of Computer Science at Williams College invites applications for two one-year visiting faculty positions beginning in the fall of 2018. Candidates should have a commitment to excellence in teaching and should have a Ph.D., or made significant progress towards completing a Ph.D., in computer science or a closely related discipline by September 2018. Successful candidates will teach a total of three courses with associated labs during the academic year.

This position is open to all areas of computer science. Visiting faculty will join eleven current members of the department in supporting a thriving and diverse undergraduate computer science major. The Department of Computer Science offers a congenial working environment, an excellent student body, and state-of-the-art facilities. Many opportunities exist for collaboration across disciplines, particularly with other faculty in the sciences.

Application Instructions

We welcome applications from members of groups traditionally underrepresented in the field, and applicants are encouraged to state in their cover letter how they will enhance the diversity of offerings and educational experiences if hired. Applications should also include a curriculum vitae, teaching statement, and three letters of reference, at least one of which speaks

to the candidate's promise as a teacher. Application materials must be submitted electronically via Interfolio: <https://apply.interfolio.com/48557>.

Materials may be addressed to:

Professor Jeannie Albrecht, Chair
Department of Computer Science
Williams College
Williamstown, MA 01267

Review of applications will begin immediately and will continue until the positions are filled. Please direct all correspondence to hiring@cs.williams.edu. All offers of employment are contingent upon completion of a background check. Further information is available at <http://dean-faculty.williams.edu/prospective-faculty/background-check-policy>.