Symposium Marks 20 Years of Coordinated Federal Investment in Networking and Information Technology R&D, Prospects for the Future

By Erwin P. Gianchandani

On Thursday, February 16, more than 150 Federal officials, Congressional staff, academic researchers, and industry leaders packed a room overlooking the United States Capitol to mark two decades of coordinated Federal investment in networking and information technology research and development with a daylong symposium exploring progress and prospects in the field. Complete materials from this extraordinary day—including videos, slides, and written summaries from nearly twenty 15-minute presentations by leaders of the field, plus a luncheon keynote by former Vice President Al Gore, a longtime champion of technology—Expanding Possibilities—Game-Changing Breakthroughs, are available on the web at: http://cra.org/ccr/themypodcast.

Organized by the Computing Community Consortium, the symposium, titled “The Impact of NITRD: Two Decades of Game Changing Breakthroughs in Networking and Information Technology—Expanding Possibilities Ahead,” marked 20 years of the Federal Government’s Networking and Information Technology Research and Development (NITRD) Program. Chartered by Congress under the High-Performance Computing Act of 1991—legislation sponsored by then-Senator Gore—as well as the Next Generation Internet Research Act of 1998 and the America COMPETES Act of 2007, the NITRD Program is the oldest and largest of the small number of formal Federal programs that engage multiple agencies. Originally comprising 8 agencies, today it provides a framework and mechanisms for coordination among 15 Federal agencies that support networking and information technology research and development. In particular, the program facilitates cooperation and coordination across a broad landscape, enabling these agencies to tackle the inherently multidisciplinary, multitechnology, and multisector challenges of today’s R&D horizons. The Program’s success in collaboration has come to be viewed as a model Federal R&D effort that leverages agencies’ strengths and avoids duplication.

The current co-chairs of the multiagency NITRD Subcommittee to the National Science and Technology Council’s (NSTC) Committee on Technology—George Strawn, the director of the National Coordination Office for NITRD, and Farnam Jahanian, Assistant Director for Computer and Information Science and Engineering at the National Science Foundation—kicked off the day. Jahanian described the information technology discovery and innovation ecosystem, emphasizing how advances in networking and information technology are the result of a complex public-private partnership spanning academia, industry, and government; how

Highlights of the CISE Fiscal Year 2013 Budget Request

By Farnam Jahanian

On February 13, the President delivered the Fiscal Year 2013 Budget to Congress. The Administration is requesting a total of nearly $7.4 billion dollars for NSF, which is an increase of $340 million, or almost five percent, over the FY 2012 NSF Enacted level. The Request also includes an increase of $56 million, or 8.6 percent, over the FY 2012 Current Plan for the Computer and Information Science and Engineering Directorate (CISE), for a total of $707.6 million. For more information on the NSF FY 2013 budget, see: http://www.nsf.gov/about/budget/fy2013/index.jsp.

As the NSF Director, Dr. Subra Suresh, stated at the NSF FY 2013 Budget Rollout, “There is overwhelming consensus that scientific discovery and technological innovation, driven by a creative and skilled science and engineering workforce, are the engines of economic growth…. Sustained momentum in NSF’s core programs is essential for progress in science and engineering.” I couldn’t agree more and would like to take this opportunity to reaffirm CISE’s strong commitment to its core basic research programs. We continue to cast a wide net and to let the best ideas surface. Requested funding for each of CISE’s three divisions—Computing and Communications Foundations (CCF), Computer and Network Systems (CNS), and Information and Intelligent Systems (IIS)—is increased by approximately nine percent in the FY 2013 Request. This funding will support a broad range of ambitious, long-term research in computer, communication, and information science and engineering.

The CISE FY 2013 Request is shaped by investments in its core basic research, education, and infrastructure programs as well as by those included in the Foundation-wide OneNSF vision. OneNSF aligns closely with the Administration’s priorities and emphasizes the long-term investments needed across computer science, engineering, statistics, mathematics, economics, and social science to support scientific foundations for trustworthy systems, induce change, maximize research impact, and, ultimately, transition new concepts and technologies into practice. CISE will contribute $69 million to SaTC, an increase of 25.5% over the FY 2012 Current Plan.

Smart Systems and Robotics

Also under OneNSF, the Cyber-enabled Materials, Manufacturing, and Smart Systems (CEMSS) program is a path-breaking effort to develop “smart systems” that can sense, respond, and adapt to changes in the environment. This program brings together researchers and educators from the areas of
Expanding the Pipeline

Where are the Minorities in Computing?

By Valerie E. Taylor and Richard E. Ladner

It is well recognized that increasing the diversity of the workforce is very important to the field of computing. In this article we focus on diversity within doctoral programs because it has a significant impact on diversity among both faculty members and researchers in industry and government labs. In particular, we focus on the source of minority students for graduate programs in computer science with respect to the following underrepresented groups: African Americans, Hispanics, and American Indian or Alaska Natives. In the December 2011 issue of the CACM, the authors published an article on the need to consider different sources of data when investigating trends about the demographics of the computing field. We use this as a starting point for this article to address the issue of where minorities are with respect to the bachelor’s degree because these students are the candidates for the graduate programs.

In an effort to identify trends in graduation rates for ethnic minorities, the Center for Minorities and People with Disabilities in IT (CMD-IT, http://www.cmd-it.org) accessed data from the following two databases:


The numbers in parentheses identify that are important for this article. The focus, however, is on the field of Computer Science. Bachelor’s degree graduation rates for the past 10 years from the two data sources are shown in Figure 1. It is noted that the number of institutions for the bachelor’s degree from the two data sources are vastly different. For example, for 2009 WebCASPAR included at least 1,283 institutions for the bachelor’s degree, 442 institutions for master’s degree, and 97 institutions for the doctorate degree. In particular, the institutions counts correspond to those that reported awarding at least one degree at the given level. By contrast, for the 2009-10 academic year, the CRA Taubee data are based on completed surveys from 150 CS Programs, almost all of which have PhD programs.

As indicated in the CACM article, there is a significant difference in the trends reported by the two data sources regarding minorities. For WebCASPAR, the percentage for Black is in the 10% to 11% range, in contrast to 3% to 4% indicated for Taubee. In the case of Hispanics, there is some difference in the percentages, with WebCASPAR indicating percentages in the range of 5% to 8% and Taubee indicating percentages in the range of 3% to 6%. In the case of American Indian/Alaska Native, the percentages are less than 1% for both data sources. Further, it is noted that the Taubee data indicate a recent decline in the percentage of Hispanic bachelor’s degrees in contrast to the WebCASPAR data, which indicate a recent increase in the percentage of Hispanic bachelor’s degrees.

For the WebCASPAR data, we also extracted the data given in Figure 1 sorted by institution classification according to the standard Carnegie Classification (http://classifications.carnegiefoundation.org). For completeness, we provide a short summary of the classifications below that are important for this article.

- Institutions that awarded at least 20 research doctorates during the year 2005.
- Carnegie Classification 2010, Basic (survey-specific): All values Race & Ethnicity (standardized): Black, Non-Hispanic, American Indian or Alaska Native, Hispanic Academic Discipline, Detailed (standardized): Computer Science Level of Degree or Other Award: Bachelor’s Degrees

<table>
<thead>
<tr>
<th>Race &amp; Ethnicity (standardized)</th>
<th>Black, Non-Hispanic</th>
<th>American Indian or Alaska Native</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master’s Colleges and Universities 2,987 147 1,577</td>
<td>Baccalaureate Colleges 1,083 31 661</td>
<td>Associate’s Colleges 4 1 4</td>
<td>Special Focus Institutions-Schools of engineering 10 2 2</td>
</tr>
<tr>
<td>Tribal Colleges 5</td>
<td>Special Focus Institutions-Other 209 20 185</td>
<td>Not Classified 24 1 8</td>
<td>Total 5,815 281 3,529</td>
</tr>
</tbody>
</table>

Table 1: Number of Bachelor’s Degrees Awarded to Minorities in 2005 by Carnegie Classification [Data Source: WebCASPAR]
Despite Austerity, Budget, Science Would See Increases in President’s Plan

By Peter Harsha

In his last annual budget request before facing voters this November, President Obama showed his commitment to debt reduction by calling for cuts across almost all Federal agencies. But amidst the cuts, the President’s budget contains some key investments in research and development, including increased investments in computing research, that demonstrate his belief that Federally supported research can help spark the innovation required to keep the Nation placed at the top of an increasingly competitive world.

The President’s budget, released on February 13, 2012, sticks to tight discretionary spending caps agreed to in the Budget Control Act of 2011—cups that would amount to nearly $1 trillion in deficit savings over the next decade. Though nearly every Federal agency would receive cuts to some programs under the proposal, key Federal science agencies would actually see increases in FY 2013 compared to FY 2012. In good news for computing researchers, key computing accounts would see higher percentage increases than the overall R&D average increases under the President’s plan.

The National Science Foundation (NSF), National Institutes of Standards and Technology (NIST), and the Department of Energy’s Office of Science—three agencies identified in the Administration’s FY 2009 Cuts to the DOD budget, but defense agencies would see cuts of 1.8 percent, 3.6 percent, and 0.8 percent, respectively. DOE’s Advanced Research Projects Agency-Energy (ARPA-E) would see a significant funding increase in the President’s plan, increasing 27.5 percent in FY 2013 to $325 million. This is a $70 million increase over FY 2012. In addition, the agency is asking for $25 million in “program direction,” which would allow them to hire more federal employees, support contractors, lease space, and increase IT purchases. However, the likelihood is pretty slim that Congress will approve the increases for personnel, space, and equipment, given the current spending climate in Washington.

Department of Defense

The President’s budget calls for an overall decrease of one percent to the DOD budget, but defense research programs across the services and at DARPA end up essentially flat compared to FY 2012. The White House requested an increase of just $1 million to its overall basic research account (6.1) in FY 2013, increasing it to $2.117 billion (compared to $2.116 billion in FY 2012). However, applied research (6.2) and advanced technology development (6.3) are both down, 6.2 would see a drop of $270 million to $4.478 billion in FY 2013, 6.3 would see a drop of $397 million to $5.266 billion.

Looking Ahead

The President’s budget request is just the first step in the annual process of setting the Federal budget. Congress will now take its crack at reaching a budget agreement; then the authorization and appropriations battles for the agencies will start in earnest later this year. Because this is an election year, it is unlikely Members of Congress will want a vote on a tough budget before November 6. Those looking for finality in FY 2013 funding levels will likely have to wait until well after the start of the new fiscal year October 1, and probably much more likely until late November or December at the earliest.

In the meantime, keep up with the latest happenings, and get much more detail on what’s in the President’s budget, by visiting the Computing Policy Blog at http://cra.org/blog.

New CRA Clearinghouse for Disseminating Research Results

In recent years, there has been much discussion in the Computing Research community regarding scholarly publication: how we communicate and evaluate our ideas. We have a complex, multi-layered system of workshops, conferences, and journals, each of which has evolved as our field has grown. Some sub-fields of computing are experimenting with new ways to publish. To advance this dialog across the many sub-fields of computing, the CRA has developed a web page as a clearinghouse for information related to scholarly publication in computing and related fields.

Please visit http://cra.org/scholarlypub. If you learn of relevant information that we should point to from this clearinghouse, contact H.V. Jagadish (jag@umich.edu).
In the May issue of CRN, we expect to publish this year’s full Taulbee report. Beginning this year, we no longer will stratify the U.S. computer science department data based on National Research Council rankings. Instead, stratification dimensions will include whether the institution is public or private, tenure-track faculty size of the reporting department, and the population of the locale in which the institution is located. This will allow our readers to get multiple views of important data, and hopefully gain new insights from them. These dimensions were recommended by the CRA Surveys Committee, and approved by the CRA Board of Directors, following extensive discussion of various options. Tables that used to report U.S. CS data by NRC rank generally will report data stratified by public vs. private. Salary data also will be stratified using the other dimensions and will be reported via “box and whiskers” diagrams that show medians, quartiles, and the range between the 10th and 90th percentiles. Instead, stratification dimensions will be reported using box and whiskers diagrams.

To illustrate the idea, and to give you some basis for comparing this year’s report to data from last year, we reproduce a few selected data below using these new methods. At this year’s Snowbird Conference, we will have an opportunity to get feedback from you about the new reporting, so that we may best provide what you need and continue improving the value of the survey to you, our constituents.

Example 1: Ph.D total enrollment. Table P6 and Figure 1 show the Ph.D. enrollment data for fall 2010. The table is an update of Table 6 of the 2010 Taulbee Survey report, with entries showing the total doctoral enrollment for each department type. The diagram is new and provides more detailed distributional information by department type; U.S. CS departments are further stratified based on tenure-track faculty size. These faculty size strata overlap so that a department generally falls into more than one stratum, allowing a wider base of comparison particularly for those departments that fall near the boundary of a given stratum. To produce the distributions illustrated in the diagram, the doctoral enrollment data provided by a department was first normalized by the number of tenure-track faculty in that department.

Example 2: Bachelor’s degree recipients. Table B3 and Figure 2 show the bachelor’s degree recipient data for 2009-2010. The table is an update of Table 11a of the 2010 Taulbee Survey report, showing total bachelor’s degrees granted for each department type; the box and whiskers diagram follows the same approach as described in example 1, using the bachelor’s degree recipient data reported by the various departments.

Example 3. Research expenditures. Table E1 shows the research expenditure data by department type. This is an update of Table 24-1 of the 2010 Taulbee Survey report. The box and whiskers diagram in Figure 3 shows the distribution of 2009-10 research expenditures per tenure-track faculty, using the stratification method of the previous examples. The data for this diagram originally were reported in Table 24-2 of the 2010 Taulbee Survey report. The data used here are the assistant professor average salaries reported by the various departments in that survey. So a box and whiskers shows the 10th, 25th, 50th, 75th and 90th percentiles of the average assistant professor salaries for departments falling into the particular stratum. This means they are not true percentiles of the individual assistant professor salaries. The discussion of various options.

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professor salaries (the true percentiles of the individual salary data were provided to those departments that provided individual data). Two sets of strata are used for U.S. CS salary data—one is based on tenure-track faculty size, as above, while the other is based on the population of the geographic locale in which the department's institution is located. Both are illustrated in the diagram. In this stratification, "large city" is one whose metropolitan area population is at least 250,000. "Midsize city" is one whose metropolitan area population falls between 100,000 and 250,000.

**Observations**

Though variances can be large, it appears that, per tenure-track faculty member, the larger departments at public universities had higher Ph.D. enrollment, produced more bachelor's degrees, and had greater research expenditures than did smaller public departments. Private exhibit these tendencies to a lesser degree, particularly with respect to research expenditures. However, there are a smaller number of strata for comparison in the cluster of private institutions. Assistant professor salaries at private institutions tended to be higher than those at public institutions regardless of the size of the department. However, at each type of institution, larger departments tended to have higher salaries, and departments located in larger locales tended to have higher salaries.

We hope you will find the new presentations useful.

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**Table B3. Bachelor's Degrees Awarded by Department Type**

<table>
<thead>
<tr>
<th>Department Type</th>
<th># Depts</th>
<th>CS</th>
<th>CE</th>
<th>I</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>US CS Public</td>
<td>107</td>
<td>5,961</td>
<td>66.2%</td>
<td>1,007</td>
<td>63.2%</td>
</tr>
<tr>
<td>US CS Private</td>
<td>40</td>
<td>1,875</td>
<td>20.8%</td>
<td>198</td>
<td>12.4%</td>
</tr>
<tr>
<td>Total US CS</td>
<td>147</td>
<td>7,836</td>
<td>87.0%</td>
<td>1,205</td>
<td>75.6%</td>
</tr>
<tr>
<td>US CE</td>
<td>12</td>
<td>0</td>
<td>0.0%</td>
<td>286</td>
<td>18.0%</td>
</tr>
<tr>
<td>US Info</td>
<td>13</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Canadian</td>
<td>18</td>
<td>1,172</td>
<td>13.0%</td>
<td>102</td>
<td>6.4%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>190</td>
<td>9,008</td>
<td>1,593</td>
<td>1,900</td>
<td>12,501</td>
</tr>
</tbody>
</table>

**Table E1. Research Expenditures Per Capita Tenure-Track Faculty, by Department Type**

<table>
<thead>
<tr>
<th>Department Type</th>
<th># Depts</th>
<th>10th percentile</th>
<th>1st quartile</th>
<th>Median</th>
<th>3rd quartile</th>
<th>90th percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>US CS Public</td>
<td>94</td>
<td>$384,943</td>
<td>$1,154,239</td>
<td>$3,106,587</td>
<td>$5,985,676</td>
<td>$13,277,500</td>
</tr>
<tr>
<td>US CS Private</td>
<td>34</td>
<td>$762,007</td>
<td>$1,731,059</td>
<td>$3,525,335</td>
<td>$7,974,328</td>
<td>$16,407,584</td>
</tr>
<tr>
<td>Total US CS</td>
<td>128</td>
<td>$477,209</td>
<td>$1,254,142</td>
<td>$3,288,124</td>
<td>$6,242,526</td>
<td>$13,829,150</td>
</tr>
<tr>
<td>US CE</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$4,476,107*</td>
</tr>
<tr>
<td>US Info</td>
<td>12</td>
<td>$563,549</td>
<td>$1,630,698</td>
<td>$3,042,284</td>
<td>$4,352,168</td>
<td>$9,292,174</td>
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<tr>
<td>Total US</td>
<td>148</td>
<td>$477,209</td>
<td>$1,357,977</td>
<td>$3,388,566</td>
<td>$6,064,015</td>
<td>$12,657,837</td>
</tr>
<tr>
<td>Canadian</td>
<td>12</td>
<td>$150,946</td>
<td>$672,488</td>
<td>$2,202,253</td>
<td>$4,285,967</td>
<td>$35,482,007</td>
</tr>
</tbody>
</table>

* Only median is reported for categories with fewer than 10 departments responding
Heads Up: Taulbee Survey to Receive a New Look from Page 5

Figure 3. Research Expenditures Normalized by Tenure-Track Size
CRA Taulbee Survey 2010

Figure 4. US Department Average Salary, Assistant Professors
CRA Taulbee Survey 2010
these investments have returned extraordinary dividends to the nation; and how we need to constantly replenish the wellspring of new ideas and train new talent.

Jahanian, together with Jeannette Wing, President’s Professor of Computer Science and head of the computer science department at Carnegie Mellon University, helped set the stage for the day. Wing stepped through “A Day in the Life,” providing 20-year contrasts in a typical person’s day, from when one wakes up in the morning (20 years ago, we used to brush our teeth the moment we woke, but today we first check our e-mail) to when one goes to sleep (back then, we used to read books, but today we read and play games on our iPads and Kindles). She remarked how Chrome, Firefox, and Internet Explorer did not exist 20 years ago; Amazon, Facebook, Google, Netflix, Skype, Twitter, and YouTube did not exist; and how even Google, Netflix, Skype, Twitter, and Amazon, Facebook, and Internet Explorer did not exist 20 years ago, we used to brush our teeth the moment we woke, but today we first check our e-mail to when one goes to sleep (back then, we used to read books, but today we read and play games on our iPads and Kindles). She remarked how Chrome, Firefox, and Internet Explorer did not exist 20 years ago; Amazon, Facebook, Google, Netflix, Skype, Twitter, and YouTube did not exist; and how even Google, Netflix, Skype, Twitter, and Amazon, Facebook, and Internet Explorer did not exist 20 years ago; Amazon, Facebook, Google, Netflix, Skype, Twitter, and YouTube did not exist; and how even Google, Netflix, Skype, Twitter, and Amazon, Facebook, and Internet Explorer did not exist 20 years ago.

And it learned that advances in data-driven approaches to health, autonomous vehicles; sensing; privacy, about human language technology; which included a large number of promise of the field. The audience—of extraordinary presentations.

The day then featured a collection of extraordinary presentations, describing both the progress and promise of the field. The audience—which included a large number of viewers to a live web stream—heard about human language technology autonomous vehicles; sensing; privacy; security; software scientific discovery; data-driven approaches to health, to science, and to reasoning and so on. And it learned that advances in computer science have an extremely broad role. In medicine, for example, that role includes not only electronic health records, but also evidence-based medicine, automated diagnosis, and the complete instrumentation of the body.

In energy and sustainability, that role includes not just high-performance computing as utilized by the Department of Energy’s Office of Science to simulate reactions in homes for energy management: smart homes and smart offices as the leaf notes of the smart grid, a focus of DoD’s Office of Energy Efficiency and Renewable Energy. And in transportation, the audience took in not just the promise of widespread use of autonomous vehicles in the years ahead, but also how society is already benefiting from capabilities such as adaptive cruise control, anti-lock brakes, and automated stay-in-lane systems that can increase the utilization of existing highways. It heard about continued advances in logistics that allow companies such as Zipcar to increase the utilization of vehicles, better amortizing the economic and environmental costs of their production.

Former Vice President Gore described the discussions that led to the High-Performance Computing Act of 1991; the role of the National Coordination Office and the President’s Information Technology Advisory Committee (PTAC) in helping to shape the executive branch agency investments in research and development in the networking and IT sector; and the essential role of the program in driving the nation’s competitiveness. And he emphasized the role of technology in democracy and civic discourse. The good news: the Internet has shown its power to facilitate disruptive change around the globe. The bad news: in many nations, including our own, the role of the Internet in lowering the barrier-to-entry to the public square where discourse takes place has just begun. There is a great deal more that must be accomplished.

The symposium concluded with a panel led by Tom Kalil, Deputy Director for Policy for the White House Office of Science and Technology Policy, discussing how to encourage truly groundbreaking research.

Following the symposium, many of the current NITRD agencies participated in an evening reception and showcase event where they presented flyers, posters, and/or small demonstrations highlighting their key accomplishments over the years—including results enabled by agency investment and cross-agency collaboration—as well as opportunities for the future.

Ultimately, the symposium captured the extraordinary achievements of the field and, particularly, the role played by a large number of Federal agencies, working together under the umbrella of the NITRD Program, in ensuring that the U.S. is the world leader in networking and information technology. And it underscored how the potential for the future, and the need to realize this potential, are even more extraordinary.

To view the full agenda, watch archived videos of the talks, and see the slideshows from the speakers, check out the symposium website: http://csc.w3.org/ccc/themepack.html

Erwin Giunchmmattami (weini@cra.org) is the director of the Computing Community Consortium within the Computing Research Association (CRA). He organized the NITRD Symposium along with Andrew Bernat, Executive Director, CRA; Vest Corf, Vice President and Chief Internet Evangelist, Google; Susan Graham, Phong Chinh Distinguished Professor of Electrical Engineering and Computer Science Emerita, University of California, Berkeley (lescheid); Ed Lazowska, Bill & Melinda Gates Chair in Computer Science & Engineering, University of Washington (wandi), Paul Messina, Director of Science, Argonne National Laboratory, and Paul Nielsen, Director and CEO, Carnegie Mellon University Software Engineering Institute.

The Computing Community Consortium, an activity of CRA, serves as a catalyst and enabler for the computing research community by bringing the community together to discuss and encourage revolutionary, high-impact disruptive directions. The CCC is funded through a cooperative agreement between the National Science Foundation and CRA.

CRA Welcomes New Staff Members

Sandra Corbett joined CRA as Manager of Administrative Support in July. A native of Washington, DC, Sandra received her B.A. in Information Systems from Strayer University in 2009. She is currently pursuing a dual Masters Program in Information Technology Database Administration and MBA at the University of Maryland University College where she completed the first Master’s program in November 2011. Prior to joining CRA, Sandra worked with DC government as a Program/Budget Analyst. Sandra developed and monitored the Administration’s $5.5M annual budget by ensuring dollars were allocated to the appropriate projects and program initiatives designated for the Administration.

Delilcz Mapps, Sr. Statistician, became a staff member in late October. She holds a Bachelor of Science degree in Mathematics from Clark Atlanta University and a Master of Science degree in Statistics from the University of Virginia. Delilcz has applied her skills as a Statistician within multiple arenas including clinical trials, market research and the federal government. For CRA, she is working on evaluation, in particular the Data Buddies project, where she contributes to all aspects of data collection, analysis and reporting.

Erik Russell, Director of Programs, covers a broad range of programs focusing on human resources, community-building, and connecting CRA with the other organizations advancing computer science and engineering. He supports several CRA committees such as the Committee on the Status of Women in Computing Research (CRA-W), the Coalition to Diversify Computing (CDC), and the CRA Deans Group. Previously Erik worked to advance computer science education as an Albert Einstein Distinguished Educator Fellow within the Directorate for Computer & Information Science & Engineering at the National Science Foundation. As part of NSF’s Education and Workforce Program, which included initiatives such as Broadening Participation in Computing and the Computing Education for the 21st Century, Erik actively worked to engage and retain students from underrepresented groups in computer science.

Collaborative Research Experiences for Undergraduates (CREU)

Application Deadline: May 11, 2012

Sponsored by CRA’s Committee on the Status of Women in Computing Research (CRA-W) and the Coalition to Diversify Computing (CDC), the CREU program is aimed toward increasing the number of women and underrepresented minorities who go on to CS&E graduate programs.

Students have the opportunity to conduct undergraduate research at their home institution during the academic year, and optionally, the following summer. Formerly administered as two separate programs—CREU and MR3-W—the program includes not only computer science and computer engineering research, but also collaborative, multidisciplinary research creating and using cyberinfrastructure.

Students from an underrepresented group receive either a stipend or a conference travel allowance for their work in the academic year, and a stipend for the optional summer extension. Each team can also request an extra $1,500 to be used for supporting materials and activities.

For more details, go to the CRA-W web site (https://www.cra-w.org/) and select “Collaborative Research Experience for Undergraduates” from the “Undergraduate” menu.

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advanced manufacturing, materials science, cyberphysical systems, and robotics to stimulate new directions in research. CISE’s investments include (i) the Cyber-Physical Systems (CPS) program, which aims to deeply integrate computation, communication, and control into physical systems and to engineer complex "smart" cyberphysical systems; and (ii) the National Robotics Initiative (NRI), an interagency program with NASA, NIH, and USEA that intends to develop the next generation of collaborative robots to enhance personal safety, health, and productivity. [CISE will contribute $91 million to CEMMSS, an increase of 82% over the FY 2012 Current Plan.]

Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21). In partnership with all NSF Directorates and Offices and under OneNSF, the CISE investment in CIF21 is in two broad areas in FY 2013. One is Advanced Computing Infrastructure (ACI), which seeks to fully exploit parallelism and concurrency through innovations in computational models and languages, algorithms, operating and run-time systems, software tools, and advanced hardware. The other area, big data science and engineering, aims to advance the core scientific and technological means of managing, analyzing, visualizing, and extracting useful information from large, diverse, distributed, and heterogeneous data sets in order to support the in-depth exploration of scientific discovery and innovation. [CISE will contribute $16 million to CIF21, an increase of 3% over the FY 2012 Current Plan.]

Cyber-enabled Sustainability: The CISE investment in the OneNSF Science, Engineering and Education for Sustainability (SEES) framework for FY 2013 creates a research community engaged in cyber-enabled sustainability to advance research in large-scale and intelligent data management and analysis; widespread heterogeneous sensing and control; and optimization, modeling, and simulation of large, complex problems, including energy, computation, and communication trade-offs. CISE will contribute $11.5 million to SEES, an increase of 44% over the FY 2012 Current Plan.]

Education and Workforce Developments: In the FY 2013 Budget Request, CISE continues its strong commitment to education and workforce development. It is estimated that CISE will support approximately 16,000 people across the spectrum of under-graduate and graduate students to postdoctoral fellows and senior researchers in FY 2013. The Computing Education for the 21st Century (CE21) program, for example, seeks to increase the pool of students and teachers who develop and practice computational competencies in a variety of contexts and to increase the pool of early postsecondary students who have the background necessary to pursue degrees in computing, computation, and data-intensive fields of study. CISE also continues its investment in the CAREER program, which supports the formation of research and education of early-career researchers and contributes to the development of future generations of computer and information scientists and engineers.

CISE’s budget request also continues to support a number of crosscutting programs developed over recent years, including Expeditions in Computing, Smart Health and Wellbeing, Cyberlearning: Transforming Education, Collaborative Research in Computational Neuroscience, and Enhancing Access to the Radio Spectrum, as well as its investments in mid-scale computing research infrastructure. As a field of inquiry, computer and information science and engineering has a rich intellectual agenda. Basic research sends new programs that keep CISE at the forefront of knowledge and discovery. I invite you to work with us to ensure that our Nation remains at the forefront of advances in computing science and engineering research and education.
**Preliminary Program**

**Sunday, July 22**

- **Conference Registration**
  - NOON - 7:30PM
  - (C Level – Top of the Escalator)

- **Workshop for New Department Chairs**
  - Co-Chairs: Mike Gennert (Worcester Polytechnic Institute), Darrell Whitley (Colorado State University)
  - Speakers: TBD
  - This workshop will give new CS Department Chairs some of the skills to lead their organizations and work with Deans, Provosts, and Advisory Boards—the stuff they never told you in graduate school.

- **Agenda:**
  - Panels: Nuts & Bolts of Managing a Department
  - Dealing with Different Stakeholders
  - Strategic Thinking
  - Active, engaging, group-based, problem-solving exercises—putting theory into practice
  - Group reports & discussion

- Whether you’ve been department chair for one week or one year, there is more to the job than you think. Come join your fellow new chairs in this workshop!

- **Welcome Reception**
  - 6:00PM - 7:00PM

- **Dinner**
  - 7:00PM - 9:00PM

- **Welcome**
  - Eric Grimson, MIT (Academic Co-Chair)
  - Dick Waters, MERL (Labs/Centers Co-Chair)
  - Speaker: John L. Hennessy (President, Stanford University)
  - Introduction: Eric Grimson (Chair, CRA Board of Directors)

- **Title:** The Coming Tsunami in Educational Technology

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**Monday, July 23**

- **Breakfast Buffet**
  - 7:00AM - 8:30AM

- **Registration**
  - 7:30AM - 6:00PM

- **Conference Co-Chairs Announcements**
  - 8:30AM - 10:00AM

- **PLENARY SESSION I**
  - 8:40AM - 10:00AM

- **Pillars of Societal Innovation: The Growing Impressive of Research and Education in Computing**
  - Speaker: Dr. Famham Zamanian (Assistant Director of NSF for CISE)
  - Introduction: Andrew Bernat (Executive Director, CRA)

- **Break**
  - 10:00AM - 10:30AM

- **Workshop I (three parallel sessions)**
  - 10:30AM - NOON

  - **A New Future for K-12 CS Education: Why You Should Care**
    - Chair: Bobby Schnabel (Indiana University)
    - Speakers: Chris Stephenson (CSTA), Lucy Sanders (NCWIT), JanCURy (NSF), Cameron Wilson (ACM)
    - Reflections on a 100,000+ Student Online Classroom
    - Chair: David Patterson (UC Berkeley)
    - Speaker: Peter Norvig (Google)

  - **Hot Topic Session - TBD**

- **Luncheon**
  - NOON - 1:30PM

- **PLENARY SESSION II**
  - 1:30PM - 3:00PM

  - **The Convergence of Social and Technological Networks**
    - Speaker: Jonathan Kleinberg (Cornell University)
    - Introduction: Eric Grimson (Chair, CRA Board of Directors)

  - **Break**
    - 3:00PM - 3:30PM

  - **Networking Events**
    - 3:30PM - 5:00PM

  - **Dinner**
    - 6:30PM - 9:00PM

- **Award Presentations:**
  - CRA’s Distinguished Service and A. Nico Habermann Awards
  - Research Futures Panel
  - Chair: Ed Lazowska, CCC Chair
  - Panelsists: TBD

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**Tuesday, July 24**

- **Breakfast Buffet**
  - 7:00AM - 8:30AM

- **PLENARY SESSION III**
  - 8:30AM - 10:00AM

  - **Evolution and Future Directions of Large-Scale Systems at Google**
    - Speaker: Jeffrey Dean (Google, Inc.)
    - Introduction: Alfred Spector (Google, Inc.)

  - **Break**
    - 10:00AM - 10:30AM

- **Workshop II (three parallel sessions)**
  - 10:30AM - NOON

  - **Humanitarian Computing**
    - Chair: Ellen Zagura (Georgia Institute of Technology)
    - Speakers: Michael Best (Georgia Institute of Technology), Gantzas Bemoredo University of Washington, Colin MacIay (Berkan Institute, Harvard University), Ralph Morelli (Trinity College), Leysia Paten (University of Colorado)

  - **Institutional Data: Revised Tabbue Groupings, New Data and Services, Data Buddies, and More**
    - Co-Chairs: Jim Kurose (UMass) and Carla Brodley (Tufts)
    - Speakers: Tracy Camp (Colorado School of Mines), Michael Goldseveber (Kaiser University), Stu Zweben (Ohio State University, Emeritus)

  - **Industry/University Interactions: Working Out the Kinks**
    - Chair: Ron Brachman (Yahoo Labs)
    - Speakers: TBD

- **Luncheon**
  - NOON - 1:30PM

- **Workshop III (three parallel sessions)**
  - 1:30PM - 3:00PM

  - **The Breadth of Interdisciplinary Computing Research**
    - Co-Chairs: Jeff MacKie-Mason (University of Michigan), Bobby Schnabel (Indiana University)
    - Speakers: TBD

  - **Publication Models in Computing Research: Is a Change Needed? Are We Ready for a Change?**
    - Chair: Moshe Y. Vardi (Rice University)
    - Speakers: Carlo Ghezzi (Politecnico di Milano), Jonathan Grudin (Microsoft Research), M. Tamer Ozsu (University of Waterloo), Fred B. Schneider (Cornell University)

- **Computer Science Curriculum 2013 (CS2013): Getting Feedback on CS Curricular Guidelines for the Next Decade**
  - Chair: Mehran Sahami (Stanford)
  - Speakers: Steve Roach (University of Texas, El Paso), Dan Grossman (University of Washington), Rich LeBlanc (Seattle University), Remzi Seker (University of Arkansas at Little Rock)

  - **Break**
    - 3:00PM - 3:30PM

  - **PLENARY SESSION IV**
    - 3:30PM - 5:00PM

  - **Politics 2012 and What it Might Mean for Computing Research**
    - Chair: Fred Schneider (Cornell University)
    - Speaker: Peter Harsha (Director of Government Affairs, CRA)

  - **Managing Up—Partnering with your Dean**
    - Chair: Randy Bryant (Carnegie Mellon University)
    - Speakers: TBD

  - **Reception/Dinner**
    - 6:30PM - 7:30PM

  - **CRA Government Affairs Committee Meeting**
    - 6:00PM - 9:00PM

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**CRA Conference at Snowbird 2012 Sponsors**

- Association for Computing Machinery
- CA Labs
- Google
- IBM Research
- IEEE Computer Society
- Microsoft Research
- Mitsubishi Electric Research Labs
- NSA
- USENIX Association

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**Snowbird Organizing Committee 2012**

- Co-Chairs: Eric Grimson (MIT), Sarah Coen-Cheng, Dick Waters (MERL), Labs/Centers Co-Chair
- Members: Annie Anton (North Carolina State University), Ron Brachman (Yahoo Labs), Carla Brodley (Tufts University), Anne Condon (University of British Columbia), Jim Kurose (University of Massachusetts Amherst), Peter Lee (Microsoft Research), Ron Libeskind-Hadas (Hareyd Mudd College), Takis Metaxas (Wellesley College), Dave Patterson (UC Berkeley), Guri Sohi (University of Wisconsin, Madison), Alfred Spector (Google, Inc.), and Ellen Zagura (Georgia Institute of Technology).
Table 2: Number of Bachelor’s Degrees Awarded to Minorities in 2009 by Carnegie Classification [Data Source: WebCASPAR]

<table>
<thead>
<tr>
<th>Race &amp; Ethnicity (standardized)</th>
<th>Black, Non-Hispanic</th>
<th>American Indian or Alaska Native</th>
<th>Hispanic</th>
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<tbody>
<tr>
<td>Carnegie Classification 2010, Basic (survey-specific)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Universities-Very High Research Activity</td>
<td>301</td>
<td>29</td>
<td>313</td>
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<tr>
<td>Research Universities-High Research Activity</td>
<td>324</td>
<td>19</td>
<td>289</td>
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<tr>
<td>Doctoral/Research Universities</td>
<td>503</td>
<td>21</td>
<td>309</td>
</tr>
<tr>
<td>Master’s Colleges and Universities</td>
<td>2,290</td>
<td>119</td>
<td>1,251</td>
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<tr>
<td>Baccalaureate Colleges</td>
<td>897</td>
<td>32</td>
<td>600</td>
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<tr>
<td>Associate’s Colleges</td>
<td>13</td>
<td>3</td>
<td>12</td>
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<tr>
<td>Special Focus Institutions-Schools of engineering</td>
<td>12</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Special Focus Institutions-Other</td>
<td>243</td>
<td>19</td>
<td>173</td>
</tr>
<tr>
<td>Tribal Colleges</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Classified</td>
<td>5</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>4,588</td>
<td>249</td>
<td>2,970</td>
</tr>
</tbody>
</table>

Table 3: Number of Bachelor’s Degrees Awarded to Minorities in 2009 by Carnegie Classification [Data Source: WebCASPAR]

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<td>329</td>
</tr>
<tr>
<td>Research Universities-High Research Activity</td>
<td>302</td>
<td>14</td>
<td>282</td>
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<tr>
<td>Doctoral/Research Universities</td>
<td>414</td>
<td>20</td>
<td>283</td>
</tr>
<tr>
<td>Master’s Colleges and Universities</td>
<td>1,852</td>
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<td>1,123</td>
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<tr>
<td>Baccalaureate Colleges</td>
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<tr>
<td>Associate’s Colleges</td>
<td>23</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>Special Focus Institutions-Schools of engineering</td>
<td>4</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Special Focus Institutions-Other</td>
<td>249</td>
<td>25</td>
<td>226</td>
</tr>
<tr>
<td>Tribal Colleges</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Classified</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3,868</td>
<td>213</td>
<td>2,999</td>
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</table>
Auburn University University of Petroleum and Minerals

The Department of Computer Science and Software Engineering (CSSE) invites applications for a tenure-track position at the Assistant/Associate Professor level to begin in Fall 2012. Salary will be commensurate with the candidate's qualifications. Women and minorities are encouraged to apply. Responsibilities include teaching, graduate student supervision, graduate and undergraduate teaching, and service. For applications at the Assistant Professor level, evidence of success in securing external funding for research is expected, and potential for successfully obtaining external research funding will be considered at the Assistant Professor level position. Applicants must have a Ph.D. in computer science, software engineering, or a closely related field; however, applicants who are ABD may apply if they are reasonably expected to complete the terminal degree prior to August 2012. We encourage candidates from all areas of computer science and software engineering to apply. We are especially interested in candidates specializing in cyber security and software engineering with additional communication skills are required. Proposals submitted for federal contracts in Computer Security must specify a position in this use of a government position. The CSSE Department currently has 17 full-time tenured faculty members and supports strong graduate (M.S., M.S.E., Ph.D.) and undergraduate programs in computer science, software engineering, and wireless engineering. CSSE enrollment for Fall 2011 was 462 undergraduate and 130 graduate students. The CSSE's research areas include software engineering, computer and communication networks, human-computer interaction, pervasive computing, artificial intelligence, database systems, information assurance, simulation, and wireless engineering. CSSE recently moved into the new, $55M Shelby Center for Engineering Technology. Additional information about the Department and faculty research interests can be found at the Department's home page (http://www.eng.auburn.edu/csse). Auburn University was chartered in 1856 and was designated a land grant institution in 1872. The Fall 2011 enrollment was 25,469 students. The College of Engineering has an enrollment of 44,740, including 2,350 international students in eight departments. In the 2012 edition of the U.S. News and World Report rankings of undergraduate programs, it was ranked 36th among public universities. Auburn, AL is located 100 miles southwest of Atlanta, GA and 50 miles northeast of Montgomery, Alabama's State Capitol. The picturesque main campus covers 1,875 acres, and includes the entire southwest quadrant of the city of Auburn. The Auburn-Opelika community has a population of about 100,000, an excellent public school system, and has been nationally recognized as one of the “Best small towns in America.” Applicants should submit a current curriculum vitae, research papers illustrating scholarly productivity, and the names and addresses of three references to:

Dr. Kei H. Hwang, Professor and Chair
Department of Computer Science and Software Engineering
Auburn University, AL 36849-5347

hr_hang@auburn.edu (with copy to hq(D0003h@auburn.edu))
1344445643 (Voice)
13444456429 (Fax)

http://www.eng.auburn.edu/csse/

The application review process will begin January 31, 2012 and continue until a successful candidate has been identified.

Cloud Computing

FX Palo Alto Laboratory, Inc.

FX Palo Alto Laboratory, Inc. (FXPAL) provides multimedia and collaboration technology research for Fujitsu Xerox Co., Ltd., a joint venture between Xerox Corporation of America and Fujifilm of Japan.

We have immediate openings for Research Scientists in the following area:

Science

FXPAL is developing awareness tools that enhance communication and collaboration between coworkers. Our research uses a variety of sensors including cameras, wireless location tracking, keyboard monitoring, and mobile devices to determine where a person is located and their availability for communication. We are experimenting with new sensors, user-interfaces, and systems architectures to support communication while satisfying personal privacy and security requirements.

We seek people with experience designing and implementing sensor network systems and applications. You can make significant contributions in hardware, software or application of the technology.

For more information about FXPAL, please visit our website at http://www.fxpal.com. To apply, send resume to fxpalappointed@fxpal.com and reference job code CRN6.

We are an Equal Opportunity Employer and value diversity in the workplace.

Research Scientists & Software Engineers

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Georgia State University

Department of Computer Science

Assistant/Associate Professor in Networks or Biological Computing

The Department of Computer Science of Georgia State University invites applications for an anticipated position of Assistant/Associate Professor in the networks or bioinformatics areas beginning Fall, 2012, pending budgetary approval. Earned Ph.D. in Computer Science or a related discipline is required. The position of employment will be conditional on background verification.

Applicants should demonstrate ability to bring national and international recognition to the department. The hired scholar is expected to bring in extramural funding, secure top quality Ph.D. students, and foster interdisciplinary research collaborations amongst faculty in various departments in GSU.

Georgia State University, founded in 1913, is a Carnegie Doctoral/Research University. Located in the heart of downtown Atlanta, this major research university has an enrollment of more than 30,000 undergraduate and graduate students in six colleges. Georgia State is the second largest university in the state, with students coming from every county in Georgia, every state in the nation and from over 145 countries. Georgia State University is currently embarking on a record $1 billion campus expansion. The Computer Science Department offers programs leading to the B.S., M.S. and Ph.D. degrees in computer science. Currently, 20 out of more than 60 Ph.D. students are involved in bioinformatics research. They are supervised by 10 faculty members fully of substantial background in bioinformatics research through collaboration with Computer Science and Biology faculty. Department computing facilities for research and instruction include a departmental network of PCs, Unix/Linux workstations, two interconnected Beowulf clusters, and a 24-processor supercomputer. The department’s faculty attracts substantial funding from many federal agencies, leading five NSF CAREER Awards.

Women and minorities are especially encouraged to apply. Applicants should send letter of interest, C.V., and three letters of recommendation to:

Dr. Yi Pan, Chair
2CI Communications
Department of Computer Science
Georgia State University
34 Peachtree Street, Suite 1450
Atlanta, Georgia, 30303

Applications can also be sent via email to search@cs.gsu.edu and will be accepted until position is filled.

Georgia State University

Department of Computer Science

Assistant/Associate Professor in Computer Networked Information Retrieval

The Department of Computer Science at Georgia State University invites applications for an anticipated position of Assistant/Associate Professor in current brain visual information retrieval. Outstanding applicants in visual analytics, semantic processing, search and retrieval, web data mining, natural language processing and/or multimedia database management are also encouraged to apply. Earned Ph.D. in Computer Science or a related discipline is required. An offer of employment will be effective at the beginning of Fall semester, 2012, pending budgetary approval, and will be conditional on background verification.

Applicants should demonstrate ability to bring national and international recognition to the department. The hired applicant is expected to bring in extramural funding, secure top quality Ph.D. students, and foster interdisciplinary research collaborations amongst faculty in various departments in GSU.

This position is part of the university-wide initiative (www.gsu.edu/secondcentury) that is seeking to hire excellent faculty in several inter-disciplinary areas. Successful candidates should demonstrate ability to bring national and international recognition to the department. The hired applicants are expected to foster interdisciplinary research collaborations amongst faculty in various departments in GSU.

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**NEC Laboratories America, Inc**

**Research Scientist-Member** — Large-Scale Computer Systems

NEC Laboratories America, Inc is a vibrant industrial research center, conducting research in support of NEC’s U.S. and global businesses. Our research program covers many areas, reflecting the breadth of NEC’s businesses and maintaining a balanced mix of fundamental and applied research.

The Autonomous Management group conducts research in the area of large-scale complex systems. We are creating innovative analytical tools to simplify and automate the management of physical systems (e.g., automobiles, power plants, etc.) as well as large scale IT systems and services. Our group has many ongoing projects including complex system analytics, cloud computing, data center networking, mobile systems, system instrumentation and debugging. Our researchers have expertise in statistics, modeling, data mining, networking, distributed and operating systems. We strongly believe in publishing our research results, as well as building technologies that can solve real world problems and ultimately support our business’ needs. Many of our research results have been transferred into award-winning NEC products.

Currently, the group is seeking research staff members to work in the following three areas:

**Systems and Network Security**

Today’s large enterprises are under tremendous risk of cyber attacks. We are seeking candidates whose research can help to build practical solutions for this grand challenge. The security, network security and software security are all under consideration, except purely cryptography. A PhD in related research fields and a publication record in that not limited to the following areas:

- Security management and policies
- Intrusion detection/prevention/mitigation
- Network perimeter controls: access control, firewall, application gateways
- Program analysis for detecting vulnerabilities or malware
- OS, virtualization and cloud computing security
- A publication record in that not limited to the following areas:

For more information about NEC Labs, access [http://www.nec-labs.com/](http://www.nec-labs.com/).

**NEC Laboratories America, Inc**

**Research Staff-Member** — Large-Scale Computer Systems

**NEC Laboratories America, Inc** is the** Research Staff-Member** — Large-Scale Computer Systems
distributed and operating systems. We are currently looking for highly qualified individuals with an interest in robustness and scalability of large distributed systems and applications, and utilizing testing and verification methodologies. Applicants must have a PhD in Computer Science or equivalent, and have a strong publication record in one or more of the above topics. Applicants should have a keen interest in driving innovative technologies into real industrial systems.

**Requirements:**

- Strong technical background in systems design and development
- Solid understanding of operating systems and networks
- Experience in systems programming (Linux/Unix, Windows)
- Bonus skills: experience in system familiarity with testing and verification techniques
- Experience with Hadoop, HDFS, or similar parallel platforms
- **NEC Laboratories America, Inc**

**Educational Background:**

NEC Laboratories America, Inc. conducts research in support of NEC’s U.S. and global businesses, with a research program that covers many areas, reflecting the breadth of NEC’s business. It supports an extensive external research program and promotes successful collaborations with academic institutions. It is a part of NEC Corporation, which includes laboratories in Japan, the United States, Europe, and China. More information can be found at [http://www.nec-labs.com/](http://www.nec-labs.com/).


**EOE/AA**

**New Jersey Institute of Technology**

**Tenured/Tenure-Track Faculty Positions**


For more information about NEC Labs, access [http://www.nec-labs.com/](http://www.nec-labs.com/).

**New York University**

**Post-Doctoral Fellowship** — Research Staff-Member

The** New York University** — Research Staff-Member

promotes successful collaborations with each position.

**Distributed Systems**

through our career center at the links noted with each position.

**EOE/AA**

**Tenured/Tenure-Track Faculty Positions**

The College of Engineering and Computer Science at New York University has an opening for a Clinical Associate or Assistant Professor position. The position is subject to budgetary and administrative approval. This is a full-time non-tenure-track, non-renewable contract faculty position which is potentially renewable.

Duties are to teach three courses during each semester and spring semester in the department/college and to participate in curricular development, program administration, and supervision of M.S.-level projects. Applicants should have a Ph.D in Computer Science or a related field and should have firsthand knowledge of the field of their specialty. Teaching experience at the graduate level is essential.

To apply, please arrange for a CV and for three letters of recommendation to be sent by email to job@eps.nyu.edu. To guarantee full consideration, complete applications should be received by March 31, 2012.

However, all candidates will be considered to the extent feasible until the position is filled.

**NYU is an Equal Opportunity/Affirmative Action Employer.**

**Northeastern University**

**Post-Doctoral Fellowship** — Research Staff-Member

The College of Social Sciences and Humanities at Northeastern University invites applications and nominations for an open rank position (assistant/associate/full professor) in the College of Digital Humanities to begin fall 2012. The successful candidate will have expertise in new digital technologies that help to classify meaning from texts and artifacts, and in new modes of presenting these in electronic form. However, candidates are not limited to text-mining, geographic information systems, natural language processing, visualization, or complex network analysis. He or she will be familiar with the theoretical challenges implicit in this emerging field, will have an interest in translating knowledge within and between disciplines and for a broader public, and will wish to thrive within the opportunities of Digital Humanities at Northeastern.

The position will complement existing University strengths in the related areas of information technology and computational social science. Applications are invited from any discipline that contributes to the study of Humanities. The appointment will be
made in an appropriate department in the College of Social Sciences and Humanities and a cross-department or cross-college appointment (such as with the College of Mathematics and Computing Sciences) is also possible. Candidates must have a Ph.D at the beginning of the appointment and a record of scholarship and teaching commensurate with rank.

Northeastern University in Boston is a world-class university with a strong urban mission, a global perspective, and an emphasis on interdisciplinary scholarship. The Signature Cooperative Education Program and study-abroad opportunities such as Dialogues with the World provide enrichment learning opportunities for its 19,000 undergraduate and graduate students. The newly founded College of Social Sciences and Humanities incorporates the departments of African-American Studies; Economics; English; History; Languages and Literatures; Philosophy and Religion; Political Science; and Sociology and Anthropology. The College is home to the School of Criminology and Criminal Justice and the School of Public Policy and Urban Affairs. Its interdepartmental programs include International Affairs; Law and Public Policy; East Asian Studies; Women, Gender and Sexuality Studies; and Jewish Studies.

Applications will only be accepted through the College of Social Sciences and Humanities website. To apply, please go to http://www.northeastern.edu/csh/ and click on the Faculty Positions link. Applicants already holding tenure should upload a letter of application, CV, a statement of current and future research interests, a writing sample of no more than fifty pages, and the names of three referees. Unsolicited letters should be directed to the Chair of the Search Committee, David Laser, or to Co-Chair, Elizabeth MacDowell Dillon at dillone@polymail.poly.edu.

Northeastern University is an Equal Opportunity Employer.

Polytechnic Institute of New York
Computer Science and Engineering Department

Tenure-Track Position

The Computer Science and Engineering Department of the Polytechnic Institute of New York invites applications for a tenure-track position in game engineering. Though we are seeking candidates at the associate professor level, we are open to considering more experienced candidates, and applicants at all levels are encouraged to COMMUNICATE with experience and accomplishments. The ideal candidate will have research interests in a core CS area integral to game engineering such as AI but not limited to AI, graphics, or networking. The successful candidate will be expected to define a game engineering course or sequence.

In game engineering, working from an engineering perspective, the candidate will be expected to define a game engineering course or sequence. The ideal candidate for this position would be expected to design and steer a new game engineering course or sequence. The candidate will be expected to work with faculty in other areas to form a program that is competitive with other institutions.

Polytechnic Institute of NYU (http://www.poly.edu) has recently merged with NYU. The successful candidate will have excellent opportunities to initiate interdisciplinary research and educational collaborations with the diverse schools and departments within NYU. CUNY Graduate Center is a strong research institution with faculty across a range of fields, as shown by the range of areas, and the numbers of successful applications. We are located in Brooklyn, NY, in a 5-minute subway ride from Lower Manhattan.

Review of applications will begin in January 2012 and will continue until the position is filled. Applicants should send their curriculum vitae, statement of research and teaching interests, and the names and addresses of three referees, as a PDF attachment, to search@poly.edu.

Polytechnic is an Equal Opportunity Employer.

Queens College of the City University of New York
Department of Computer Science

Assistant/Associate Professor

The Department of Computer Science at Queens College of CUNY is accepting applications for a tenure-track position in modeling and simulation at the Assistant Professor level starting Fall 2012.


Queens College of the City University of New York
Department of Computer Science
Assistant/Associate/Full Professor

The Department of Computer Science at Queens College of CUNY is accepting applications for a research-focused visiting faculty position for the 2012-2013 academic year in machine translation, speech recognition, or other areas of natural language processing or machine learning.


RSA Laboratories

Post-Doctoral Scientist Position

RSA Laboratories invites applications for a full-time position with a focus on: (1) machine learning / data mining for security applications and (2) computer systems security. Both well established scientists with strong research records and graduating PhDs of exceptional caliber are encouraged to apply.

Scientists will have an opportunity to blend their research with leadership in architecting next-generation security systems together with RSA Engineering. Applicants should have a keen interest in both cutting-edge research and real-world deployment; also valuable are either technical implementation skills or a desire to work with development staff to create prototypes.

A Ph.D. in Computer Science or a closely related field is required, as is residence in or relocation to the Boston, MA area.

To apply, please send a resume to: labs_hiring@rsa.com or email labs_hiring@rsa.com

The review of applications will begin on February 1, 2012 and continue until the position is filled.

RSA is the security division of EMC, the world leader in data storage, virtualization infrastructure solutions. RSA Laboratories’ charter is to produce research with practical impact and to disseminate the strategy of RSA and its parent company EMC and scholarly influence in the larger research community.

Santa Clara University
Department of Computer Science

Tenure-Track Assistant Professor

The Department of Computer Science at Santa Clara University invites applications for a tenure-track Assistant Professor opening. The Department has particular interest in applicants focused on the areas of Web Science/Usability/Infrastructure, Cloud Computing, or Information Assurance, but all strong candidates will be considered in all computing areas.

Applicants must have a strong commitment and ability to teach both the undergraduate and graduate levels and must have demonstrated a strong potential for research in computer science or engineering. Applicants should have a doctorate in Computer Science, Computer Engineering, or in a closely related field is required.

Santa Clara University (https://www.scu.edu) is a Jesuit, Catholic university, located in the heart of Silicon Valley. The School of Engineering is committed to improving the human condition through engineering education, practice, and scholarship, promoting the University’s mission to ‘fashion a more humane, just and sustainable world.

SCU maintains small class sizes and promotes close faculty/student interaction. The University enrollment is approximately 5,200 undergraduate and 3,700 graduate students. The Department (http://www.scs.ucsc.edu) offers B.S., M.S. and Ph.D degrees, with 10 full-time faculty, and a strong pool of around 25 part-time teaching faculty who instruct approximately 160 undergraduate majors, and about 250 part-time and full-time graduate students. The School of Engineering maintains strong ties to local industry.

The proposed start date is September 1, 2012.

Applicants should submit detailed CV, statements of research interests, statements of teaching interests, and names and contact information for three references.

Electronic submission of applications is preferred, with PDF-formatted documents mailed to:

ComSearch@scu.edu

Applications will also be accepted through the mail at:

Search Committee Chair
Department of Computer Engineering
Santa Clara University
500 El Camino Real
Santa Clara, CA 95051

Review of applications will begin on February 1, 2012 and the search will remain open until the position is filled.

EEO / AA

Santa Clara University is an equal opportunity/Affirmative Action employer.

Applications are welcome from dual career couples.

Texas A&M University

Department of Computer Science

Multiple Tenured or Tenure-Track Positions

The Department of Computer Science and Engineering of the Dwight Look College of Engineering at Texas A&M University invites applications for multiple tenured or tenure-track positions, starting fall 2012.

The Dwight Look College of Engineering is one of the largest engineering programs in the country with both its graduate and undergraduate programs ranking in the top ten amongst public institutions. The Department of Computer Science and Engineering has 36 tenured, tenured faculty and 3 junior lecturers. The department currently has one National Academy of Engineering member, seven IEEE Fellows, one ACM Fellow, and over 40% of the faculty are holders of the NSF/CAREER awards. Additional information about the department can be found at www.cs.tamu.edu.

Senior Faculty Position in Computational Science

In recognition of the increasing importance of computational sciences, the University has identified this as an area targeted for growth. As part of an expansion in this area, the Department of Computer Science and Engineering (http://www.cs.tamu.edu) is recruiting for a senior faculty position in computational science as broadly defined. This position will report to the Dean and will have a mandate to define a research agenda both by making use of the considerable available startup and by leveraging the significant existing resources at the Institute for Applied Mathematics and Computational Science (http://tamias.tamu.edu).

Senior Faculty Position in Software and Systems

The department is inviting applications from outstanding candidates in the areas of software and systems. The position is open to candidates at either the assistant or associate professor level and will also be considered for a faculty position in the computer science program as broadly defined. This position will report to the Dean and will have a mandate to define a research agenda both by making use of the considerable available startup and by leveraging the significant existing resources at the Institute for Applied Mathematics and Computational Science (http://tamias.tamu.edu).

* Applications are welcome from dual career couples.

Texas A&M University is an Equal Opportunity/Affirmative Action Employer. The University is dedicated to the goal of building a culturally diverse and pluridisciplinary faculty and staff committed to teaching and working in a multicultural environment, and strongly encourages applications from women, persons with disabilities, and covered veterans. Employer paid advertisement.

Texas A&M University – Corpus Christi

School of Engineering and Computing Sciences

Computational Science

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The University of North Texas
Knowledge Discovery from Digital Information Research Cluster Assistant/Associate Professor
The University of North Texas (UNT) invites applications for a tenure-track Assistant or Associate Professor position in Information Visualization. UNT is one of seven universities designated by the state as an Emerging Research University. This hire will be an integral part of UNT’s new interdisciplinary research cluster, Knowledge Discovery from Digital Information (KDDI, http://kddi.unt.edu). The position requires an earned doctorate in Computer Science, Information Science, or a closely related field; an established international reputation with a record of significant and sustained research and scholarly output; a record of mentoring graduate students; and a successful record of securing research funding. A record of interdisciplinary activities is desired.

Applications must be submitted online at: https://facultyjobs.unt.edu. Search for file 600060. To locate the specific position, submit nominations and questions regarding the positions to Rada Mihalcea (william.moen at unt.edu), search committee chair. The University of North Texas is an AA/ADA/EOE committed to diversity in its educational programs.

The University of Texas at Austin invites applications for an tenure-track Assistant Professor in the UT Austin Computer Science Department. The Department of Computer Science is committed to building a diverse and inclusive community. Women and minority candidates are encouraged to apply. Applications are invited for a tenure-track Assistant Professor position in Software Engineering. The position is expected to commence Fall 2012. Emphasis on research, publication, professional excellence, and leadership, and whose research and teaching will be commensurate with the Assistant or Associate Professor rank (in special cases, the position may be elevated to the Associate Professor level). The Assistant Professor will be expected to develop a strong research program and to contribute to the educational mission of the Department. The Department seeks candidates with strong qualifications in one or more of the following areas: network and grid security, encryption, or a closely related field. The person to be hired must have a record of research and scholarly output. Preference will be given to candidates who have demonstrated significant record of research findings, and a record of interdisciplinary activities. Applicants must apply online at: https://facultyjobs.unt.edu. Search for file 600061. To locate the specific position, submit nominations and questions regarding the positions to Rada Mihalcea (william.moen at unt.edu), search committee chair. The University of Texas at Austin is an AA/ADA/EOE committed to diversity in its educational programs.
Professional Opportunities

University of Texas at Dallas

The Department of Computer Science of the University of Texas at Dallas invites applications from outstanding candidates for tenure-track positions in computer science. The Department is conducting two searches: one in all areas of Computer Science (multiple positions) and one in the area of cybersecurity (multiple positions). Openings are at all ranks, including chaired professorships.

The Department offers BS, MS, and PhD degrees in Computer Science, Software Engineering, Telecom Engineering and Computer Engineering. Currently the Department has 43 tenure-track faculty members and 12 senior lecturers. The department is housed in a spacious 150,000 square foot facility and has excellent computing equipment and support. The department houses a number of centers, particularly, in areas of cybersecurity, human language technology, and embedded software. Cybersecurity is an active area of research in the Department with projects on Data and Applications Security and Privacy, Language-based Security, Systems Security, Cryptography, and more. The cybersecurity team has obtained substantial funding from Federal, State and Industry including AMC, NSF, JARPA, NASA, NGA, NIH, DARPA, ONR, DHS and EPA. UT Dallas is an NSF Center of Excellence in Cybersecurity Research and is a recipient of a major “Scholarship for Service” award from NSF.

The University is located in the most attractive suburbs of the Dallas metropolitan area. There are over 800 high-tech companies within 15 miles of the campus. Opportunities for joint university-industry research projects are excellent. The Department faculty are research-active in all areas of computing and have received more than $20 Million in new research funding in the last 18 months from Federal, State and Industry sources.

For more information, contact Gopal Gupta, Department Head, via email at gp@google.com, or send email to cs-search@utdallas.edu, or view the Internet Web page at http://cs.utdallas.edu.

Review of applicants will begin immediately and will continue until the positions are filled.

For more information or to apply, please visit http://www.utdallas.edu.

University of Waterloo

David R. Cheriton School of Computer Science

The David R. Cheriton School of Computer Science at the University of Waterloo invites applications for a two-year, tenured track faculty position in computer science. The Department is conducting two searches: one in all areas of Computer Science (multiple positions) and one in the area of cybersecurity (multiple positions). Openings are at all ranks, including chaired professorships.

The Department offers BS, MS, and PhD degrees in Computer Science, Software Engineering, Telecom Engineering and Computer Engineering. Currently the Department has 43 tenure-track faculty members and 12 senior lecturers. The department is housed in a spacious 150,000 square foot facility and has excellent computing equipment and support. The department houses a number of centers, particularly, in areas of cybersecurity, human language technology, and embedded software. Cybersecurity is an active area of research in the Department with projects on Data and Applications Security and Privacy, Language-based Security, Systems Security, Cryptography, and more. The cybersecurity team has obtained substantial funding from Federal, State and Industry including AMC, NSF, JARPA, NASA, NGA, NIH, DARPA, ONR, DHS and EPA. UT Dallas is an NSF Center of Excellence in Cybersecurity Research and is a recipient of a major “Scholarship for Service” award from NSF.

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For more information, contact Gopal Gupta, Department Head, via email at gp@google.com, or send email to cs-search@utdallas.edu, or view the Internet Web page at http://cs.utdallas.edu.

Review of applicants will begin immediately and will continue until the positions are filled.

For more information or to apply, please visit http://www.utdallas.edu.

University of Waterloo

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For more information, contact Gopal Gupta, Department Head, via email at gp@google.com, or send email to cs-search@utdallas.edu, or view the Internet Web page at http://cs.utdallas.edu.

Review of applicants will begin immediately and will continue until the positions are filled.

For more information or to apply, please visit http://www.utdallas.edu.

University of Waterloo

David R. Cheriton School of Computer Science

The David R. Cheriton School of Computer Science at the University of Waterloo invites applications for a two-year, tenured track faculty position in computer science. The Department is conducting two searches: one in all areas of Computer Science (multiple positions) and one in the area of cybersecurity (multiple positions). Openings are at all ranks, including chaired professorships.

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