

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

CRA's Position

The amount of pain and suffering we are witnessing and feeling is only a snapshot of a broader social reality. We, and everyone before us, have had a role in arriving at where we are today. As such, it is of paramount importance to step up and take a stance. It is our responsibility and a moral imperative to not stand by and simply witness the events around us. We must collectively find our voice and reject racism and inequality. Silence perpetuates, doubt reinforces, and rationalization of incident after incident only compounds the pain so many in our society continue to endure.

While CRA has a long history of celebrating, promoting, and advocating for inclusivity, we cannot be satisfied with continuing the status quo. We will continue to actively stand against discrimination and hatred. We will find new ways to use our voice in Washington to advocate for policies that address the inequities that exist in our field. We will amplify the efforts of our membership organizations wherever we can to help them improve the spaces they occupy and create an environment that is more welcoming, just, and equitable to all. Only together can we begin to right the long history of wrongs that have led us to this place and time.

We start with acknowledging the issues by talking to those around us and explicitly stating that we stand with them when they stand against discrimination and hatred.

See page 2 for full article.

Save the Date for the CRA Virtual Conference 2020

While the biennial CRA Conference at Snowbird will be postponed to next summer, we will be holding an online meeting this summer on Wednesday, July 22nd, and Thursday, July 23rd. The conference will run each day from approximately 8:30 AM Pacific/11:30 AM Eastern to 2:00 PM Pacific/5:00 PM Eastern.

In This Issue

- 2 CRA's Position
- 3 Save the Date for the CRA Virtual Conference 2020
- 4 President's Immigration Order is Latest in a Series Vexing Computing Research Community
- 8 Undergrads who are Underrepresented in Computing Indicate Higher Confidence in Graduate School Admission & Becoming Capable Researcher than Peers
- 10 CRA-E Announces Four New Committee Members
- 12 Expanding the Pipeline: Scholarships for Women Studying Information Security
- 14 CRA-WP Announces Recipients of the Inaugural Skip Ellis Early Career Award and the 2020 Anita Borg Early Career Award
- 17 Computing Researchers Respond to COVID-19: Contact Tracing for All? Bridging the Accessibility Gap for Contact Tracing
- 18 Request for Community Feedback on BPCnet.org
- 19 Board Members, Staff, Column Editor
- 20 Professional Opportunities

CRA's Position

Dear CRA Member,

The amount of pain and suffering we are witnessing and feeling is only a snapshot of a broader social reality. We, and everyone before us, have had a role in arriving at where we are today. As such, it is of paramount importance to step up and take a stance. It is our responsibility and a moral imperative to not stand by and simply witness the events around us. We must collectively find our voice and reject racism and inequality. Silence perpetuates, doubt reinforces, and rationalization of incident after incident only compounds the pain so many in our society continue to endure.

While CRA has a long history of celebrating, promoting, and advocating for inclusivity, we cannot be satisfied with continuing the status quo. We will continue to actively stand against discrimination and hatred. We will find new ways to use our voice in Washington to advocate for policies that address the inequities that exist in our field. We will amplify the efforts of our membership organizations wherever we can to help them improve the spaces they occupy and create an environment that is more welcoming, just, and equitable to all. Only together can we begin to right the long history of wrongs that have led us to this place and time.

We start with acknowledging the issues by talking to those around us and explicitly stating that we stand with them when they stand against discrimination and hatred.

We know that racism:

- Is systemic and institutionalized, was intentionally designed, and established well before the foundation of our nation.
- Continues to oppress people of color around the world – denying basic human rights, denying opportunity, and even more tragically denying many of their very lives.
- Is learned behavior that may be unlearned through education, compassion, empathy, and action.
- Drives a wedge between communities, and in doing so limits the enviable quest for a society steeped in respect.
- The privileged benefit from its existence and must be willing to sacrifice to overcome it.
- Lives in our homes, schools, workplaces, parks, churches, stores, amusement parks, government, law enforcement – it lives in us all to varying degrees.

To stand against it, we:

- **Acknowledge** the existence of racism within our communities and commit to defeating it.
- **Call out and reject** rationalization of incidents and distortion of information.
- **Educate** ourselves and those around us to be better equipped to address racism in its many forms.
- **Stand up** against the status quo by using our voice and agency.
- **Commit to systemic change** in laws, policies, procedures, etc.
- **Dedicate all necessary resources** to create lasting change.

Ellen Zegura, Chair of the CRA Board

Andrew Bernat, CRA Executive Director

Save the Date for the CRA Virtual Conference 2020



CRA VIRTUAL CONFERENCE 2020

While the biennial CRA Conference at Snowbird will be postponed to next summer, we will be holding an online meeting this summer on Wednesday, July 22nd, and Thursday, July 23rd. The conference will run each day from approximately 8:30 AM Pacific/11:30 AM Eastern to 2:00 PM Pacific/5:00 PM Eastern. A detailed schedule and registration information will be forthcoming, but here are some of the events that are planned:

- NSF CISE Assistant Director Margaret Martonosi and CRA Director of Government Affairs Peter Harsha will give plenary talks with opportunities for participants to contribute questions and comments.
- There will be four panel sessions on Challenges in the time of COVID, including sessions on teaching, research and collaboration, mentoring students and colleagues, and challenges for chairs.
- There will be two interactive sessions on CRA's Strategic Planning process.

As is traditional, each CRA member representative will receive an invitation to this meeting. For more information contact VirtualConference@cra.org. Please save the date, and we look forward to seeing you online!

Sincerely,

Ran Libeskind-Hadas - Chair

James Allan - Co-Chair

President's Immigration Order is Latest in a Series Vexing Computing Research Community



By Peter Harsha, CRA Director of Government Affairs

On Monday, June 22nd, President Trump issued the latest in a series of immigration and visa related orders designed to limit the involvement of foreign students and researchers, in particular those from mainland China, in U.S. research efforts. The order follows a series of other proposals and orders emanating from the White House and Capitol Hill that have raised the ire of higher-education, U.S. industry, and the computing research community over recent weeks. The proposals – two proclamations, Senate legislation and bicameral legislation – all have the stated goals of protecting U.S. jobs from foreign competition or protecting U.S. research from foreign exploitation, but in CRA's analysis would likely do more damage to the U.S. research ecosystem than the threats they are trying to address.

The President's most recent order is a **Presidential Proclamation** that directs U.S. immigration officials on June 24th to suspend issuing new H-1B, H-2B, J- series and L series non-immigrant visas through the end of 2020. The President justified the move as a way to protect U.S. workers during this time of increased unemployment as a result of the COVID pandemic. This case is problematic, CRA has noted, because employment in the computing sector has actually increased during the pandemic, with unemployment falling from a pre-pandemic level of 3.0 percent to 2.8 percent as of April 30th (as compared to an overall unemployment level of nearly 15 percent). Notably, the President's proclamation did not suspend the F-1 visa program used by most foreign graduate students in the US, or curtail the Optional Practical Training (OPT) program or the OPT STEM program, which

allow F-1 visa holders to stay an additional year or three years respectively to get training in their study areas after graduation.

The move has earned considerable ire from the U.S. business community, particularly the high-tech sector, which uses the H-1B program to bring in high-skilled talent from around the world. Those in the computing sector note that even with the H-1B program, more than 625,000 computing-related jobs (those that would require a 4 year computing degree) remain unfilled at the present time. The President appears unmoved, however, believing the order to be the fulfillment of a campaign promise and a vote-winner.

Earlier, the President had issued another order directed at protecting U.S. research from exploitation by the Chinese government. On May 29th, he issued a **Presidential Proclamation** that suspended the issuing of visas for students and researchers from the People's Republic of China (PRC) wishing to come to the U.S. if it is determined that they have ever been involved with any entity participating in the PRC's "military-civil fusion strategy." CRA opposed the proclamation. While we recognize that there are certainly real threats to U.S. research from foreign actors – the recent news that **54 scientists funded by the NIH have lost their jobs** and some face criminal charges for failing to disclose financial ties to foreign governments emphasizes this fact – indiscriminate large-scale banning of students and researchers from any particular country is likely to be counter-productive and deprive the U.S. research enterprise of the important contributions of international scholars.

Immigration Order (continued)

On June 1st, CRA [issued a statement](#) opposing the proclamation which read:

The President on Friday issued a proclamation effective today ordering the suspension of entry to the U.S. of Chinese non-immigrant graduate students or scholars who have ever studied, received support, been employed by, or conducted research at or on behalf of any Chinese entity that may have implemented China's "military-civil fusion strategy." The proclamation defines "military-civil fusion strategy" as "actions by or at the behest of the [People's Republic of China] to acquire and divert foreign technologies, specifically critical and emerging technologies, to incorporate into and advance the PRC's military capabilities."

We are aware and concerned that research in the United States is a target for espionage agents and others intent on stealing – rather than licensing – valuable intellectual property. We are also aware that some countries have been particularly aggressive about such theft in recent years. We support restrictions for people with clear connections to IP theft or espionage.

However, we oppose the banning of any foreign student or researcher unless there is clear evidence of their personal connection to such activities. Indiscriminate large-scale banning of students and researchers from any particular country deprives the U.S. research enterprise of contributions by international scholars, most of whom are not involved in IP theft or espionage.

The U.S. remains the world's leading economy and maintains the world's strongest defense because of an innovation ecosystem that is powered by a research enterprise that attracts the brightest minds and best ideas from all over the world. The broad scope of this proclamation has already created great uncertainty and fear among Chinese scholars who are here and contributing to U.S. leadership. It will most certainly discourage future international scholars from choosing the U.S. for their studies and research careers, depriving the U.S. of their talents and energy. We urge the Administration to immediately clarify the scope of the order and limit it to those cases where there is clear evidence of personal connection to espionage and IP theft.

While the White House was working to put out this proclamation, a parallel effort was underway to make additional immigration policy changes around the Optional Practical Training (OPT) program – an effort that ultimately led to the issuance of the June 22nd proclamation. On May 29th, CRA issued a statement to state its opposition to efforts to suspend or end the program:

We are aware of efforts in both the Administration and Congress aimed at suspending or curtailing the Optional Practical Training (OPT) program for students on F-1 visas in the United States. As an organization representing more than 200 PhD- or research-focused computing departments in North America, eight leading industrial computing research labs, and six affiliated professional societies in the computing fields with a combined membership of over 200,000, we strongly oppose any efforts to limit or end the OPT program, which plays an important role in keeping some of the world's best talent in the U.S., working and innovating in the U.S. economy.

The argument given for ending the program now – prioritizing U.S. workers over foreign talent given the overall high levels of unemployment in the economy – does not make sense when applied to the computing fields. In January 2020, prior to the impact of the COVID pandemic, unemployment in the computing fields was at 3.0 percent, a figure

Immigration Order (continued)

generally considered “full employment.” By April 2020, when the impacts of the pandemic forced overall unemployment up to 15 percent, unemployment in the computing fields actually dropped to 2.8 percent, according to an analysis of Bureau of Labor Statistics Current Population Survey data by the National Foundation for American Policy (NFAP). An analysis by NFAP of Active Job Postings in Computing Occupations amplifies this point, noting that between April 14 and May 13, 2020, there were more than 625,000 active vacancies in jobs that require at least a bachelor’s degree in computing. The OPT program is not harming U.S. computing workers, and importantly, jobs in computing cannot be filled by workers transitioning from non-technical fields without significant retraining that can span multiple years.

Suspending or curtailing the OPT program would destroy a key pathway for many of our best foreign students to contribute to U.S. innovation. Indeed, our innovation ecosystem – that extraordinarily productive interplay between U.S. research universities, industrial and federal research labs, and the people and ideas that flow between them – depends on a great majority of those foreign-born degree recipients deciding to stay and continue their work in the U.S. According to the National Science Foundation, 72 percent of foreign born STEM graduates stay employed in the U.S. for at least 10 years after graduation. But, uncertainty around the status of the OPT program threatens to upend that trend. Foreign students attending our schools now and intending to use the program to complete their graduate education and help find more permanent employment in the U.S. are increasingly likely to seek employment elsewhere, either in their homeland or in countries more open to highly skilled foreign talent.

Ending or suspending OPT (and the associated Curricular Practical Training (CPT) program) would not only damage the current cohort of foreign graduate students studying in the U.S. and hoping to stay. The availability of the pathway that the OPT program provides is a huge incentive to the best foreign graduate students deciding whether or not to study in the U.S. Any uncertainty around the program, especially in light of uncertainty about the status of other aspects of U.S. immigration and visa policy, is likely to discourage many students from applying to U.S. institutions at all, providing a new advantage to economies in other parts of the world who will gladly welcome their talents.

We agree that Federal pandemic response efforts should be prioritized towards aiding U.S. workers and others in the U.S. affected by COVID. However, efforts to curtail or suspend the OPT program will not achieve that goal. Instead, those efforts will cause great harm to an innovation ecosystem that continues to be a crucial part of our recovery effort. We strongly oppose any effort to end the program.

CRA is not alone in opposing efforts to curb the program. The higher education and scientific community, led by organizations like the Association of American Universities (AAU), Association of Public and Land Grant Universities (APLU), and American Association for the Advancement of Science (AAAS), has weighed in with the White House, Department of Homeland Security, and Department of State opposing the rumored new rules. The U.S. Chamber of Commerce, a strong voice for U.S. industry in Washington also sent a strong opposition to the policy. And [21](#)

[Republican Members of Congress](#) wrote to Secretary of State Mike Pompeo and Acting Secretary of Homeland Security Chad Wolf urging them ensure the OPT program continues this Fall. Those efforts appear to have had success in keeping the OPT programs and F-1 visas out of the June 22nd order.

But that sentiment is not shared by all Republican Members of Congress. Four Republican Senators – Sens. Ted Cruz (R-TX), Tom Cotton (R-AR), Chuck Grassley (R-IA), and Josh Hawley (R-MO) – [sent a letter to President Trump](#) urging him to suspend

Immigration Order *(continued)*

the OPT program along with a number of other non-immigrant visa categories. Senators Cotton and Marsha Blackburn (R-TN), along with Rep. David Kustoff (R-TN) have pushed the matter even further with the introduction of bicameral legislation called the **SECURE CAMPUS Act** that would, in order to protect U.S. universities from “espionage,” bar “PRC nationals from receiving student or research visas to the United States for graduate or post-graduate studies in STEM fields.”

On June 18th, Senator Rob Portman (R-OH), Chair of the Permanent Select Committee on Intelligence and a group of other bipartisan sponsors introduced **S. 3997, the “Safeguarding American Innovation Act,”** which also seeks to limit foreign exploitation – specifically Chinese exploitation – of the U.S. higher-education community. The bill places limitations of foreign educational and cultural exchanges, criminalizes failure to disclose foreign sources of funding for U.S. grant recipients, and creates a new intergovernmental “Federal Research Security Council” chaired by the White House Office of Management and Budget that would help create a uniform grant application process across all agencies and set guidance on how to determine what research is in the “economic or national security interest of the U.S.” and how to protect it. Though the bill does not have companion in the House – and would be unlikely to move as-is

there in any case – there is sufficient bipartisan support for the bill in the Senate that it is possible that some of its provisions could find their way in other pieces of legislation that will move. CRA will continue to monitor progress.

While S. 3997 is unlikely to move in the House, and the SECURE CAMPUS Act is not likely to see much movement in either the House or the Senate, both demonstrate that there remains a cohort in Congress that does not understand or appreciate the significance of the intellectual contribution of foreign students and researchers to U.S.-based research enterprises. As an organization representing the computing research community, CRA will continue to make the case for the importance to the nation of attracting the best minds in the world to our shores, and the importance of maintaining a free and open fundamental research enterprise. We will continue to track these bills and others like them that threaten to distort or damage that fundamental research ecosystem, which has been the driver of so much of the innovation that has helped ensure U.S. competitiveness and its world-leading position in computing. Keep an eye on **CRA’s Computing Research Policy Blog** or on CRA’s Twitter (@CRATweets) for continuing updates!

Undergrads who are Underrepresented in Computing Indicate Higher Confidence in Graduate School Admission & Becoming Capable Researcher than Peers

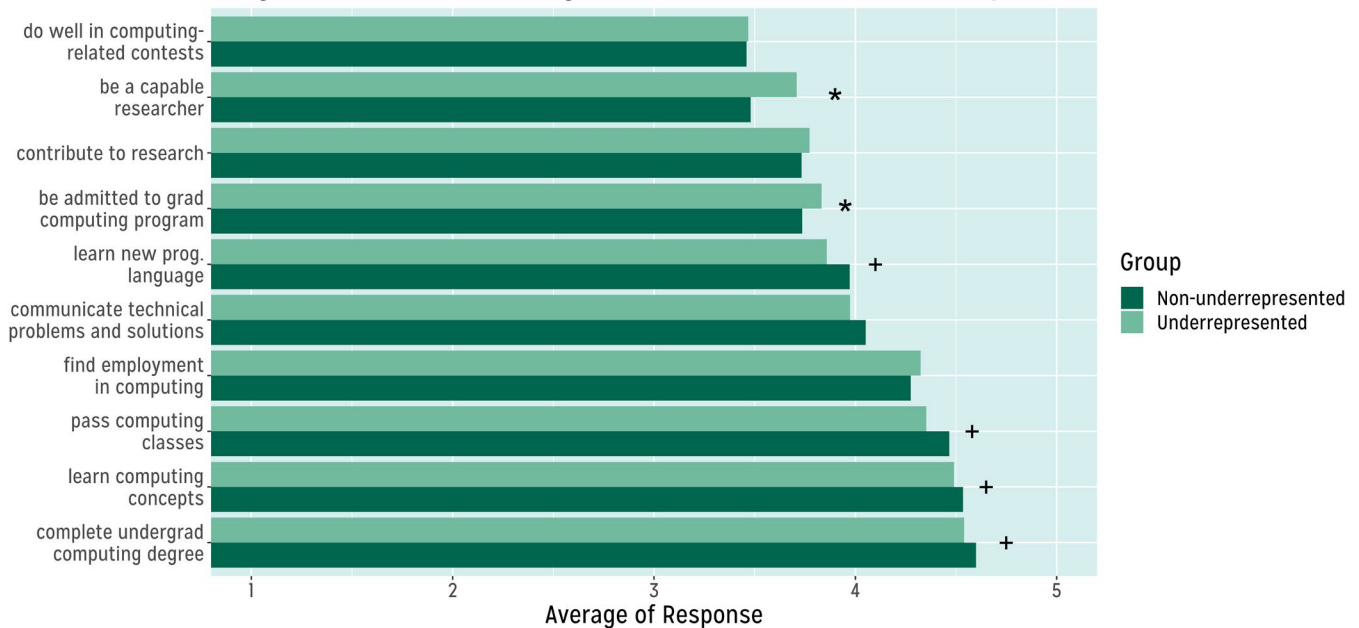


CERP

Computing Research Association
Evaluation

By Evelyn Yarzebinski, CERP Research Associate

Degree to which undergraduates feel confident they can...



Notes: Participants were asked to respond on a scale of 1 (Strongly disagree) to 5 (Strongly agree).
 (*) indicates a significant difference between groups at the 0.05 level, and Cohen's $d \geq 0.15$.
 (+) indicates a significant difference between groups at the 0.05 level, but Cohen's $d < 0.15$.
 Underrepresented indicates students who are Black/African-American, Hispanic/Latinx, Native American, and/or Native Hawaiian/Other Pacific Islander.
 Non-underrepresented indicates students who are White/Caucasian and Asian.
 Source: Data Buddies Survey (DBS) 2018, Center for Evaluating the Research Pipeline, Computing Research Association

Many factors influence students' confidence in their own computing abilities. CERP summarized the results of the Fall 2018 Data Buddies Survey (DBS) for Undergraduates to understand differences in confidence between student groups, particularly between students who are underrepresented in computing and students who are non-underrepresented in computing. A total of 7,808 undergraduate students responded to the Fall 2018 DBS survey and provided information about their race/ethnicity: 1,234 students who are underrepresented and 6,574 students who are non-underrepresented. All students were asked to respond to each of the items in this analysis on a scale of 1 ("Strongly disagree") to 5 ("Strongly agree").

Overall, all students generally agree, with averages above 4.0 ("Somewhat agree"), they are confident that they will complete their undergraduate computing degree (M = 4.59, SD = 0.79), can learn

computing concepts (M = 4.52, SD = 0.68), can pass their computing courses (M = 4.49, SD = 0.81), can find employment in the area of their computing interest (M = 4.28, SD = 0.87), and can communicate technical problems and solutions (M = 4.04, SD = 0.93). On average, undergraduates are least confident that they will do well in computing-related contests (M = 3.46, SD = 1.16) and that they will become a capable researcher in computing (M = 3.51, SD = 1.09).

Between students who are underrepresented and non-underrepresented, responses from students who are underrepresented indicate they are significantly more confident than non-underrepresented students that they will become capable researchers in computing, and that they will get admitted to a graduate computing program. Both of these results have an effect size greater a Cohen's d value of 0.15, demonstrating a modest effect. Results of the independent-



samples *t*-tests conducted for these items are displayed in the Notes section below.

Students who are underrepresented indicate equal levels of confidence as their non-underrepresented peers that they will do well in a computing-related contest, that they can find employment in their area of computing interest, and that they can contribute to a computing research project.

Finally, although the following items reveal areas where responses from students who are underrepresented indicate significantly lower confidence than non-underrepresented peers, the minimal Cohen's *d* effect size of these results indicates the significant differences may not be particularly meaningful. The items are: passing their computing courses (*d* = 0.13), learning foundations and concepts of computing (*d* = 0.07), quickly learning a new programming language on their own (*d* = 0.07), and completing an undergraduate degree in computing (*d* = 0.11).

Notes:

Underrepresented is defined as students who are Black/African-American, Hispanic/Latinx, Indigenous/Native American, and/or Native Hawaiian/Other Pacific Islander.

Non-underrepresented is defined as students who are White/Caucasian and/or Asian.

Significant independent-samples *t*-tests at $p < 0.05$ and Cohen's *d* ≥ 0.15 :

- Underrepresented students responded with higher confidence ($M = 3.71$, $SD = 1.10$) than non-underrepresented students ($M = 3.48$, $SD = 1.08$) that they believe they can become capable researchers, $t(1654) = -6.59$, $p < 0.001$. Cohen's *d* = 0.23
- Underrepresented students responded with higher confidence ($M = 3.83$, $SD = 1.15$) than non-underrepresented students ($M = 3.74$, $SD = 1.10$) that they believe they can get admitted to a graduate computing program, $t(1628) = -2.65$, $p < 0.01$. Cohen's *d* = 0.17

The full-text of the ten survey questions appear below; they were abbreviated in the figure due to space constraints. "I am confident that I can..."

- do well in a computing-related contest (e.g., programming contest, robotics contest, hackathon)
- become a capable researcher in computing
- contribute to a research project in computing
- get admitted to a graduate computing program
- quickly learn a new programming language on my own
- clearly communicate technical problems and solutions to a range of audiences
- find employment in an area of computing interest
- pass my computing classes
- learn the foundations and concepts of computing
- complete an undergraduate degree in computing

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

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CRA-E Announces Four New Committee Members

The CRA Education Committee (CRA-E) recently welcomed four new members to the committee: Monica Anderson, Michael Hilton, Amy Ko and Kelly Shaw. Dan Grossman (University of Washington), who has served on the board from 2016-2020 and worked on several projects will be leaving the committee after its June board meeting. CRA-E Fellow Joslenne Peña ends her term as a CRA-E Fellow this year. Joss received her Ph.D. in Informatics at Penn State University. She has significantly contributed to the CRA-E by providing a critical voice from the graduate student perspective and has worked extensively on the [Undergraduate Research Highlights](#) series as well as the article process, which highlights outstanding research done by undergraduate students. She will begin a position at Macalester College in the Mathematics, Statistics, and Computer Science department starting Fall 2020. CRA-E thanks them both for contributions during their service on the committee.



Monica Anderson

*Associate Professor of Computer Science,
The University of Alabama*

Monica Anderson earned her BS in Computer Science from Chicago State University (1990) and her Ph.D. in Computer Science and Engineering from the University of Minnesota (2007). In 2008, she received the 2008 UPE Excellence in Instruction Award. She is an executive member of the iAAMCS alliance, a national consortium of researchers that focus on increasing the number of African Americans in Computer Science with advanced degrees. Research projects studied autonomous robot teams, Computer Science education, and broadening participation. The results of these projects included identification of mitigating factors an operator's trust of autonomous systems, mechanisms for increasing self-efficacy in computer science introductory courses using robotics, and approaches on improving the design of autonomous device frameworks. Current education-related research concerns the efficient teaching of memory-reliant programming concepts.



Michael Hilton

*Associate Teaching Professor, Institute for
Software Research, School of Computer
Science, Carnegie Mellon University*

Michael Hilton is an Associate Teaching Professor at Carnegie Mellon University. He completed his Ph.D. at Oregon State University in 2017. However, he is perhaps most proud of his Associates of Science Degree from Grossmont Community College. He primarily teaches software engineering courses. One of his favorite courses he created is Software Engineering for Startups. His research focuses on Continuous Integration and Flaky Test detection.



New Committee Members *(continued)*



Amy J. Ko studies equitable ways for humanity to learn the power and perils of computing, whether youth discovering the limits of machine learning, adults grasping a new API, or teachers shaping learners' conceptions of code. Her work spans over 100 peer-reviewed publications, 11 receiving best paper awards and 4 receiving most influential paper awards. She received her Ph.D. at the Human-Computer Interaction Institute at Carnegie Mellon University in 2008, and degrees in Computer Science and Psychology with Honors from Oregon State University in 2002.

Amy Ko

Professor, The Information School and the Paul G. Allen School of Computer Science and Engineering, University of Washington, Seattle



Kelly Shaw is an Associate Professor of Computer Science at Williams College. Her research area is computer architecture, particularly parallel architectures including graphics processors and shared memory multiprocessors. Her work analyzes the demands of emerging application domains and also designs new features and techniques to exploit application specific characteristics. Dr. Shaw earned an undergraduate degree in computer science from Duke University and earned a Master's degree and a Ph.D. in computer science from Stanford University.

Kelly Shaw

Associate Professor of Computer Science, Williams College

Expanding the Pipeline: Scholarships for Women Studying Information Security



CRA-WP

Computing Research Association
Widening Participation

scholarships for women
SWSIS
studying information security

The Scholarships for Women Studying Information Security (SWSIS) program provides scholarships of up to \$10,000 for women earning their Bachelor's and Master's degrees in fields related to information security. The scholarships support collegiate women working to join the growing security industry through academic funding and mentoring opportunities. Over the past eight years, SWSIS has supported more than 90 women for one to two years each and have funded more than \$625,000 in scholarships, providing assistance at the formative stages of their careers.

We value diversity in our scholarship ranks, naming SWSIS Scholars from a wide range of public and private institutions of various sizes and locations. SWSIS also seeks ethnic diversity, with the 2019-20 cohort of 15 Scholars including five Hispanic Americans, one Muslim American, and four African-Americans. We welcome age diversity, typically including at least one second-career woman per year in our scholarship recipients. SWSIS alumni have gone on to positions in industry (including Google, JP Morgan, Accenture, IBM, PNC, PWC, and startups), academia (including Johns Hopkins University), government (including Los Alamos Labs, MITRE, and NSWC).

These are competitive awards selected based on an application process. The following criteria are required for consideration:

- Applicants must be women studying information security.
- Scholarship recipients must be undergraduates in their junior or senior years, or in a Masters' program. Therefore, applicants should be expecting to be in that status in the upcoming academic year.
- Scholarships are only available to students enrolled in a US campus of a US university.
- Applicants must be US citizens or permanent residents.
- More details can be found here: [Frequently Asked Questions](#)



With so much of our lives moving online, and with technological applications rapidly developing and constantly shifting, understanding and addressing the security issues that arise is a critical endeavor.

- Kebra Thompson, SWSIS Scholar



Expanding the Pipeline *(continued)*



I received a great deal of encouragement and advice from the mentors I met through my SWSIS scholarship that really helped me understand the opportunities available to me in the field. The scholarship also enabled me to attend ACSAC, which was my first time participating in a security research conference. The researchers I met there exposed me to a vast array of computer security innovation and inspired me to pursue a PhD in cyber security.

I am extremely grateful for having been selected for the SWSIS scholarship. The financial support and mentorship I received made it possible for me to further my studies in the field and helped me to clarify my long-term goals."

– Jill Jermyn, SWSIS Scholar

SWSIS has two named scholarships:

Rebecca Gurley Bace SWSIS Scholarship

The Rebecca Gurley Bace SWSIS Scholarship honors the memory of **Becky Bace**, a founder of the information security field. She was a major force behind building the computer misuse and detection (CMAD) community, starting in the 1990s. She has been widely recognized for her many efforts in industry and government to increase participation by women and minorities in cyber security, and to bring useful technology to market. Becky is fondly remembered by many as the "Den mother of Cyber Security."

Parisa Tabriz PrinSWSIS Scholarship

The PrinSWSIS scholarship is awarded to a woman aspiring to work in computer security, and by her mere existence, challenging the stereotype of a cyber security professional and helping redefine what it means to be a princess. She is both a cybersecurity princess and a mentor and inspiration to others on that journey.



Applied Computer Security Associates (ACSA) founded the SWSIS scholarship program in 2011 and joined forces with CRA-WP in 2014 to lead the selection

process. SWSIS scholarships have been awarded to more than 90 women studying information security. The application period is generally December 15 - February 1 each year, and the 2020 SWSIS scholars will be announced in the upcoming weeks.

For more information on the SWSIS process, you may contact swwis@swwis.org.

CRA-WP Announces Recipients of the Inaugural Skip Ellis Early Career Award and the 2020 Anita Borg Early Career Award



CRA-WP
Computing Research Association
Widening Participation

CRA-WP is honored to present the recipients of the inaugural Skip Ellis Early Career Award and the 2020 Anita Borg Early Career Award. **Tawanna Dillahunt** of the University of Michigan and **Michel A. Kinsy** of Boston University have been selected as the **Skip Ellis Early Career Award** recipients. **Olga Russakovsky** of Princeton University has been selected as the **Anita Borg Early Career Award** recipient.

The Skip Ellis Early Career Award honors the late Clarence “Skip” Ellis, who was the first African-American to both earn a Ph.D. in computer science and be elected a Fellow of the ACM. This award is given annually by CRA-WP to a person who identifies as a member of a group underrepresented in computing (African-American, Latinx, Native American/First Peoples, and/or People with Disabilities), who has made significant research contributions in computer science and/or engineering and has also contributed to the profession, especially in outreach to underrepresented demographics.

The Anita Borg Early Career Award honors the late Anita Borg, who was an early member of CRA-W (before it became CRA-WP), and is inspired by her commitment to increasing the participation of women in computing research. The annual award is given to a woman in computer science and/or engineering who has made significant research contributions and who has contributed to her profession, especially in the outreach to women.

This year, recognition was warranted beyond the award winners and two nominees are receiving the **Distinction of Honorable Mention**.

- **Cindy Rubio González** of the University of California Davis is recognized by both the Anita Borg Early Career Award and the Skip Ellis Early Career Award committees for a joint Honorable Mention.
- **Carole-Jean Wu** of Arizona State University is recognized by the Anita Borg Early Career Award committee.

CRA-WP is proud to celebrate the growing representation in computing research by highlighting both Rubio González and Wu for their significant contributions and outreach in the field. It is encouraging to see the growth in the excellent computing researchers from diverse backgrounds committed to scholarly excellence and equal opportunity. Thank you to everyone who took the time to submit a nomination for this year and we hope to see many more in the next cycle.

About the Awardees



Tawanna Dillahunt is an Associate Professor at the University of Michigan’s School of Information (UMSI) and holds a courtesy appointment with the Electrical Engineering and Computer Science Department. Working at the intersection of human-computer interaction, environmental, economic, and social sustainability; and equity, her research investigates and implements technologies to support the needs of marginalized people. She and her team have developed digital employment tools that address the needs of job seekers with limited digital literacy and education; assessed real-time ridesharing and online grocery delivery applications among lower-income and transportation-scarce groups, and proposed models for novice entrepreneurs to build their technical capacity.

Tawanna has received funding to support her research from the National Science Foundation, the Gates Foundation, UM Poverty Solutions, UM Ginsberg Center, and the UM Ford School. Her work appears in the most prestigious HCI conferences and journals and has won several best papers and honorable mentions. She holds a Ph.D. and M.S. in Human-Computer Interaction from Carnegie Mellon University, an M.S. in Computer Science from the Oregon Health and Science University, and

Tawanna Dillahunt

a B.S. in Computer Engineering from North Carolina State University. She was also a software engineer at Intel Corporation for seven years.

Tawanna has demonstrated commitment to supporting underrepresented people and communities. She is a Digital Inclusion Policy fellow mentor for UM Poverty Solutions and is a member of the Advisory Committee for the University of Michigan Center for Academic Innovation. The nature of her research alone enables her to work with a diverse set of passionate students and community members who have been attracted to her research. She directs the Social Innovations Group and has mentored numerous master’s, undergraduate, and high school students, and postdocs, over half whom are women and underrepresented minorities. She actively participates in programs that benefit underrepresented groups and engages in community-based participatory research.



2020 Career Awards *(continued)*



Michel A. Kinsy

Michel A. Kinsy is an Assistant Professor in the Department of Electrical and Computer Engineering at Boston University (BU), where he directs the Adaptive and Secure Computing Systems (ASCS) Laboratory. He focuses his research on computer architecture, hardware-level security, and efficient hardware design and implementation of post-quantum cryptography systems. He has published over 60 research articles, many in top-tier conferences and journals, including the International Symposium on Computer Architecture, International Symposium on High-Performance Computer Architecture, IEEE International Symposium on Hardware Oriented Security and Trust, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, and IEEE Transactions on Computers.

Michel is an MIT Presidential Fellow. He earned his Ph.D. in Electrical Engineering and Computer Science in 2013 from the Massachusetts Institute of Technology (MIT). In his doctoral work, he introduced some of the first algorithms and innovative hardware techniques to emulate and control large-scale power systems at the microsecond resolution. The work inspired further research by the MIT spin-off Typhoon HIL, Inc. Before

joining the BU faculty, Michel was an assistant professor in the Department of Computer and Information Systems at the University of Oregon, where he directed the Computer Architecture and Embedded Systems (CAES) Laboratory. From 2013 to 2014, he was a Member of the Technical Staff at the MIT Lincoln Laboratory, where he led the Advanced Computer Architecture Concepts sub-group tasked with exploring future secure computing architectures in critical DoD systems.

Michel is a mentor who inculcates a culture of embracing diversity, intellectual honesty, excellence in research, social responsibility, and personal integrity among the mentees in his research laboratory – three of them are underrepresented doctoral students. His outreach efforts include creating the University of the Virgin Islands Summer Cybersecurity Program; organizing ACM Richard Tapia Celebration of Diversity in Computing Conference workshops on open-source computer architecture design space exploration and post-quantum cryptosystem design; introducing a computer science module into the Oregon Young Scholars Program for preparing historically underserved students for college, and the University of Oregon African-American Rites of Passage Program.



2020 Career Awards *(continued)*



Olga Russakovsky

Olga Russakovsky is an Assistant Professor of Computer Science at Princeton University where she is also affiliated with the Center for Statistics and Machine Learning and the Center for Information Technology Policy. Her research is in computer vision, closely integrated with machine learning, human-computer interaction and fairness, accountability and transparency. Olga focuses on three primary areas of exploration. The first is developing the fundamental building blocks of visual recognition, such as object detection, image parsing or human activity recognition. The second is designing human-machine interaction paradigms to enable computer vision systems to effectively learn from and collaborate with humans. The third is ensuring the fairness of the vision systems with respect to people of all backgrounds by improving dataset design, algorithmic methodology and model interpretability.

One of her notable research contributions is leading the ImageNet Large Scale Visual Recognition Challenge. This research appeared in the International Journal of Computer Vision in December 2015 and amassed 13,422 citations as of December 1, 2019. Her team

was awarded the prestigious PAMI Everingham Prize, and the work was featured in the New York Times and MIT Technology Review. Crowdsourcing contributions of this research also appeared in the premier human-computer interaction conference (ACM CHI) in 2014 and follow-up work on remove cultural stereotypes from the dataset will appear in the ACM Conference on Fairness, Accountability and Transparency (FAT*) in 2020.

Olga was awarded numerous awards for her research and outreach work in addition to the PAMI Everingham Prize, such as the MIT EECS Rising Star award and NSF Graduate Research Fellowship. She was named one of MIT Technology Review's 35 Innovators Under 35 in 2017, Foreign Policy Magazine's 100 Leading Global Thinkers in 2015 and Becominghuman.ai's 100 Brilliant Women in AI Ethics in 2019. She has served as a Senior Program Committee member for WACV'16, CVPR'18, CVPR'19, NeurIPS'19 and CVPR'20, has organized 9 workshops and tutorials on large-scale recognition, and has given more than 50 invited talks at universities, companies, workshops and conferences.

She completed her Ph.D. in Computer Science at Stanford University in August 2015 and her postdoctoral fellowship at the Robotics Institute of Carnegie Mellon University in June 2017.

In addition to her research, Olga co-founded and serves on the Board of Directors of the AI4ALL foundation dedicated to educating diverse future Artificial Intelligence (AI) leaders. She was the co-founder and co-director of the Stanford AI4ALL summer camp for high school girls; the camp was featured in Wired and a study on its effectiveness was published in SIGCSE'16. Olga is the co-founder and co-director of the Princeton AI4ALL summer camp teaching AI technology and policy to underrepresented high school students. AI4ALL has partnered with 11 universities so far to introduce students from underrepresented groups to AI, and launched a free, project-based online AI education program. In addition, she is the co-founder of the annual Women in Computer Vision workshop at CVPR, the monthly Women in AI tea at Stanford, and the monthly Research Inclusion Social Event at Princeton.

Computing Researchers Respond to COVID-19: Contact Tracing for All? Bridging the Accessibility Gap for Contact Tracing



By Computing Community Consortium (CCC) Council member Katie Siek, Indiana University

Automated, proximity-based contact tracing apps **use Bluetooth** to identify who is near them. In theory, this is a great solution that can be efficiently deployed widely (**albeit with many privacy and protocol considerations addressed here**), however the assumption is that people have access to mobile phones with Bluetooth and use technology similarly.

We know that not everyone has access to smartphones. **Pew** notes that approximately 70% of Americans who make less than \$30,000 a year own a smartphone. Similar stats are seen for Americans who live in rural areas and those with high school education or lower. Whereas just over 50% of older adults 65 and older have smartphones.

Even if people do have phones, **we know that people do not necessarily use their technology similarly.** The current automatic contact tracing apps *assume technology maps 1:1 with people.* I've seen in my own work where participants share smartphones depending on which family member needs the most connectivity within a certain time period. Thus, to be effective in these situations, a contact tracing app would have to log who the user is during the contact time. Similarly, there is an *assumption that participants have their Bluetooth on all the time.* In our work, participants often reported turning Bluetooth and wifi off to save battery power. This was especially true where participants were working long days and needed their phone to have enough battery to connect with loved ones (e.g., a cashier at the grocery store; facilities staff at a hospital).

Even if someone does have a smartphone, *they may not have the hardware or OS* needed to use the automatic contact tracing apps. Current Apple contact tracing runs on **iPhones released in the last 4 years** and **Google requires Android 6.** Although on average, **Americans update their phones a little over every 2 years (27.7 months in 2018 - up two months from a 2016 poll),** we know that **over half of Americans only replace their phones when they no longer work.** The apps will most likely be updated to accommodate more phones, however Bluetooth contact tracing will still be a major power draw meaning that people will not be able to use it for a long period of time (e.g., a work shift). This means that a large subset of the population will be left out of utilizing automatic contact tracing apps.

When we consider these pieces all together, **we know that lower socioeconomic communities have been hardest hit with COVID19** and **rural communities are at risk for lower resources to deal with COVID19,** thus contact tracing is critical for the same populations who most likely will not have access to automatic contact tracing apps.

So what can the computing community do now?

The computing community must **ensure the majority of people, especially those most at risk, can use contact tracing.**

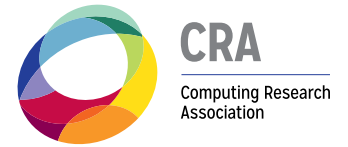
If fully automated contact tracing is selected by a state, we must ensure the systems can be used by everyone. Apps must be available to download on all currently available phones or we have to provide hardware that people can use to participate (e.g., a bluetooth beacon that communicates to the user via text messaging).

Decision makers should consider alternatives, such as digitally assisted contact tracing by harnessing GPS functionality that locally tracks where users have been so that a **human contact tracing specialist** can work with a person who tests positive to see where they have been and who has to be contacted. Memory recall is imperfect - especially when one is asked who they have been in contact with over the last two weeks. If an app were to log where a person has been, then the person who was recently diagnosed with COVID19 could use the app to remember who they were with at each location.

In addition, we should have review panels with diverse community members and experts to ensure wherever people encounter contact tracing systems - app or human - their question, concerns, and needs are being addressed.

Computing has incredible potential to contribute to keeping people **safe, connected,** and **informed** during this pandemic. We must continue to rise to the challenge to ensure *everyone* can be safe and confident in participating in this critical intervention to slow the spread.

Request for Community Feedback on BPCnet.org



To the computing community,

With this particularly challenging academic year coming to an end, and the upcoming NSF CISE program submissions, it is a good time to update everyone on the NSF CISE Pilot Program for Broadening Participation in Computing (BPC) Plans. All Medium and Large CISE Core Programs, Secure and Trustworthy Cyberspace (SaTC), and Cyber-Physical Systems (CPS) project proposals require an approved BPC Plan **by the time of award**. CRA and NCWIT have led an effort to develop the [BPCnet.org](https://www.bpcnet.org) portal as a resource for the community to assist in developing Departmental BPC Plans and Individual BPC Plans.

New Resources on BPCnet.org:

The community has been developing additional resources on [BPCnet.org](https://www.bpcnet.org) to simplify the process of writing a BPC Plan (for both Individual and Departmental plans). There is an FAQ link, plan templates, sample BPC Plans, and an extensive Getting Started Guide. There will also be additional virtual workshops later in the summer, and in-person workshops once travel is resumed.

How You Can Help:

The inclusion of BPC plans in a large number of CISE projects is a significant step in making our field inclusive and welcoming, and consequently growing the computing workforce and making it more representative of the users of technology. It will take a community-wide effort, and significant preparation of the community to make this BPC effort successful. To this end, we would like to invite interested people from this group to provide feedback on the contents in the portal. If you are interested in reviewing the portal contents, [please complete our interest form](#).

Thank you for your interest in the NSF BPC Pilot Program, which has contributed to creating a large resource that we expect the community will find valuable. Please let us know if we can answer any questions by contacting bpcmailinglist@cra.org.

Sincerely,

BPCnet.org Steering Committee

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Greg Byrd, North Carolina State University

Tracy Camp, Colorado School of Mines

Wendy DuBow, NCWIT, University of Colorado Boulder

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Column Editor

Expanding the Pipeline
Patty Lopez, Intel

City University of Hong Kong

Worldwide Search for Talent

City University of Hong Kong is a dynamic, fast-growing university that is pursuing excellence in research and professional education. As a publicly-funded institution, the University is committed to nurturing and developing students' talents and creating applicable knowledge to support social and economic advancement.

Professor/Associate Professor/ Assistant Professor Department of Computer Science [Ref. A/430/09]

The Department of Computer Science has internationally known research groups in a number of areas, including bioinformatics, cloud computing, evolutionary computation, information security, machine learning and data science, mobile computing, multimedia computing and graphics, and software engineering. The Department is ranked the 11th best Computer Science Department globally by the US News & World Report (2019).

For further details, please visit <http://www.cityu.edu.hk/hro/en/job/current/academic.asp?ref=uac-a430>.

City University of Hong Kong is an equal opportunity employer and we are committed to the principle of diversity. Personal data provided by applicants will be used for recruitment and other employment-related purposes.

College of Charleston

Assistant Professor of Computer Science

The Computer Science Department at the College of Charleston invites applications for one tenure-track Assistant Professor position starting Fall 2020.

Preference will be given to candidates with expertise in computer graphics, game programming, computational music, spatial audio, motion capture animation, interactive sensor-driven art or sculpture installations, projection mapping, artificial intelligence and machine learning applied in the arts, robotics applied in the arts, computational creativity, multi-user and collaborative systems for the arts, and related areas to support the Computing in the Arts (CITA) program and our other undergraduate and graduate programs.

The rapidly-growing Computer Science department has approximately 500 majors who are enrolled in five undergraduate degree programs, and two master's programs. In particular, Computing in the Arts program has over 100 students and offers an interdisciplinary experience by combining computer science and programming with concentrations in art, music, theater, digital media, interaction and game development (<http://cita.cofc.edu>). An earned Ph.D. degree (by August 15, 2020) in Computer Science or closely related field is required.

Apply online at <https://jobs.cofc.edu/postings/9892>

Drexel University

Teaching Faculty Instructor

Drexel University's Department of Computer Science (drexel.edu/cci/academics/computer-science-department) invites applications for full-time teaching faculty positions. Areas of interest include Introductory Computing, Security and Privacy, Artificial Intelligence (including Machine and Deep Learning), Software Engineering and Data Science. The Computer Science Department is housed in the College of Computing and Informatics (drexel.edu/cci) which is located in a brand new building with state-of-the-art classrooms, research and student labs, and abundant space to promote collaboration and innovation. The College and Department are foremost leaders in educating computing and information professionals, combining high-quality teaching and research in a multidisciplinary and collaborative environment. The College offers a variety of B.S., M.S., and Ph.D. degrees spanning all areas of computing and informatics, including new M.S. degrees in Artificial Intelligence and Machine Learning and Data Science. Teaching Faculty (Instructor) Computer Science Dept will teach at the undergraduate (and possibly graduate) levels and serve as a curricular leader within their designated primary area. Excellence in teaching and teaching innovation, as well as dedication to working with students, is essential in this role. Applicants should possess a strong interest in course and curriculum development and online teaching as well.

Applications can be submitted at <https://careers.drexel.edu/en-us/job/494736/teaching-faculty-instructor-computer-science-dept>.



EMORY
UNIVERSITY

**Department of
Computer Science**

Southern Illinois University Carbondale

*Position/Rank: Two Assistant Professor,
9-month, continuing appointment, tenure-
track positions in the School of Computing*

Appointment beginning August 16, 2020.

Qualifications/Requirements:

Ph.D. in computer science or related field by date of appointment. Candidates must show evidence of high quality ongoing and future research and teaching competency for computer science courses at both the undergraduate and graduate level. Specialty in Computer Security, Graphics and Game Development, Cyber-Physical Systems (CPS), or applicants in other specialized areas will be considered.

Application Deadline: June 8, 2020, or until filled.

Application Procedure:

Applicants should send a letter of interest, teaching philosophy, research philosophy, curriculum vitae, and provide the names and contact information for at least three references – all application materials to be sent directly via email to [hiring@cs.siu.edu](mailto: hiring@cs.siu.edu) or mailed to: Director, School of Computing, Engineering A0319 Mail Code 4511, Southern Illinois University Carbondale, 1230 Lincoln Drive, Carbondale, IL 62901. Questions may be directed to the Director, via [hiring@cs.siu.edu](mailto: hiring@cs.siu.edu). Visit www.cs.siu.edu for information about the School.

Visiting Assistant Professor in Computer Science

Emory University

Atlanta, GA

Emory University's Computer Science Department invites applications for full time positions, with the possibility of renewal for up to three years, at the rank of Visiting Assistant Professor in Computer Science. These are 9-month, non-tenure track appointments, with a 5-course teaching expectation for the 2020-2021 academic year.

Applicants must have a PhD in Computer Science or a related discipline and will be expected to contribute to the Department's mission of excellence in undergraduate education, with a demonstrated commitment to the success of our entry-level courses. All areas of specialization will be considered.

Applications consisting of a cover letter, CV, statement of teaching philosophy and career goals, and evidence of teaching excellence, and three letters of recommendation (at least one of which addresses your teaching) should be uploaded to Interfolio using the following website:

<https://apply.interfolio.com/75742>

Informal inquiries are also invited at [csvap@emory.edu](mailto: csvap@emory.edu). Review of applications will start immediately and will continue until the position is filled. For additional information about the department, please see: <http://www.cs.emory.edu>.

Emory University is an Equal Opportunity/Affirmative Action/Disability/Veteran employer. Women, minorities, persons with disabilities, and veterans are encouraged to apply. Emory University is committed to student and faculty diversity, equity, and inclusion.

Emory University
400 Dowman Drive, Suite W401
Atlanta, Georgia 30322

An equal opportunity, affirmative action university

Tel 404.727.7580
Fax 404.727.5611
[mathCS-info@listserv.cc.emory.edu](mailto: mathCS-info@listserv.cc.emory.edu)
<http://cs.emory.edu/>

SIU Carbondale is an Affirmative Action/ Equal Opportunity Employer of individuals with disabilities and protected veterans that strives to enhance its ability to develop a diverse faculty and staff and to

increase its potential to serve a diverse student population. All applications are welcomed and encouraged and will receive consideration.

University of Massachusetts Dartmouth

Full-Time Lecturer Position in Computer and Information Science

The Department of Computer and Information Science (CIS) in the College of Engineering at the University of Massachusetts Dartmouth invites applications for a full-time lecturer position beginning in September 2020.

The department is particularly interested in candidates in the area of cybersecurity or any related field in computer science. This is a 9-month, non-tenure-track position with primary responsibilities for online graduate instruction as well as undergraduate and graduate classroom instruction. Initial appointment is up to 2 years, with the possibility of renewal.

<http://careers.umassd.edu/dartmouth/en-us/job/502608/fulltime-lecturercomputer-information-science>

Screening of complete applications will begin immediately and continue until the positions are filled. Apply online at <http://www.umassd.edu/hr/employmentopportunities/>

More information about the Computer and Information Science Department can be found here: <https://www.umassd.edu/engineering/cis/>

UMass Dartmouth is an Affirmative Action, Equal Opportunity, Title IX Employer.

The University of Massachusetts reserves the right to conduct background checks on potential employees.

University of New Hampshire

Lecturer In Computer Science

The Department of Computer Science of the University of New Hampshire (UNH) invites applications for a benefits-eligible, non-tenure-track Lecturer position to begin August 24, 2020. The principal role of this position is to support the department's undergraduate degree programs. The teaching assignment will include first-year programming courses and some combination of computer science, information technology, and/or data science courses. The ideal candidate will have demonstrated success as a teacher and at least a master's degree in a computing-related discipline. UNH actively creates an educational environment that fosters diversity, inclusion and quality engagement for all.

To see more details and to apply go to <https://jobs.usnh.edu/postings/35970>.

University of South Florida

Instructor - Computer Science and Engineering

The University of South Florida invites applications for Instructor I and II positions in **Computer Science and Engineering**

Computer Science and Engineering is seeking to hire full-time Instructors at Level I and II, who can teach a broad range of core and elective courses at the undergraduate and graduate levels in computer science, computer engineering, information technology, and cybersecurity. Candidates must have

completed a PhD in computer science or a related engineering area from an accredited institution. Preference will be given to candidates with both industry experience and teaching experience in an ABET accredited program. Special emphasis is on candidates who have an interest in implementing BPC efforts in a department with a large number of students. This recruitment is for non-tenure earning full-time Instructor positions. Successful candidates are expected to start in fall 2020 or spring 2021.

Computer Science and Engineering (<http://www.usf.edu/engineering/cse/>) has 28 tenure-track/tenured faculty members, 11 instructors, 1 visiting instructor, 6 staff members/advisors, and offers BS, MS, and PhD degrees, serving nearly 2000 undergraduates, 120 masters, and 100 PhD students. USF CSE has a strong working relationship with the Florida Center for Cybersecurity. Department ranks include twelve NSF CAREER awardees, one National Academy of Inventors (NAI) Fellow, six IEEE Fellows, three IAPR Fellows, four AAAS Fellows, and three AIMBE Fellows. The Computer Engineering graduate program was ranked 50th among US public universities by US News and World Report (2019). USF CSE is in the top sixth (rank 29) of Computer Science departments at U.S. public universities, according to the most recent Academic Analytics data based on Scholarly Research Index. USF CSE faculty members have 40 issued patents, own 12 copyrights, and have executed eight license/option agreements between FY12-FY16.

The College of Engineering at the University of South Florida comprises seven departments, serving nearly 7,000 students and offers

ABET-accredited undergraduate degrees in seven programs, as well as 12 master's and eight doctoral degrees. The College is ranked #54 among public universities in the USNWR 2020 Best Engineering Graduate Program Rankings. The College has 12 major research centers and institutes, and is actively engaged in local and global research activities with foci on sustainability, biomedical engineering, computing technology and transportation. For the fiscal year 2018-2019, the College had \$36 million in research expenditures.

The University of South Florida, established in 1956 and located in Tampa, is a high-impact global research university dedicated to student success. The USF System includes three separately accredited institutions: USF, USF St. Petersburg and USF Sarasota-Manatee. Serving more than 50,000 students, the USF System has an annual budget of \$1.8 billion and an annual economic impact of \$4.4 billion. USF ranks in the top 25 nationally for research expenditures among public universities, according to the National Science Foundation. In 2018, the Florida Board of Governors designated USF as a Preeminent State Research University, placing USF in the most elite category among the state's 12 public universities. USF is a member of the American Athletic Conference.

With more than 16,000 employees in the USF System, the University of South Florida is one of the largest employers in the Tampa Bay region. At USF you will find opportunities to excel in a rich academic environment that fosters the development and advancement of our employees. We believe in creating a talented, engaged and driven workforce

through on-going development and career opportunities. We also offer a first class benefit package that includes medical, dental and life insurance plans, retirement plan options, tuition program and generous leave programs and more.

An application package should include a cover letter, curriculum vitae, statement describing teaching experience and goals, and the names and contact information of at least three references (one of which must be the current immediate supervisor of the applicant). Applicants must electronically submit the application packet as one PDF file to the following website: <https://www.usf.edu/work-at-usf/careers/index.aspx>. Applicants with less than five years of relevant full-time teaching experience should apply for an Instructor Level 1 position, search for Job Opening ID #25122. Applicants with five or more years of relevant full-time teaching experience may apply for an Instructor Level 2 position, search for Job Opening ID #25123. Applications will be considered starting immediately until the positions are filled.

The University of South Florida is an Equal Opportunity/Equal Access/Affirmative Action Institution. Women and minorities are strongly encouraged to apply. Dual career couples with questions about opportunities are encouraged to contact the Department chair. To request disability accommodations in the application and interview process, please notify Khoa Dinh, the EOL Coordinator at (813) 974-9272 at least five working days in advance.

University of Tennessee Knoxville

Research Position in Performance Analysis

This full-time position is in the area of performance measurement and modeling, including the Exa-PAPI project (<http://icl.utk.edu/exa-papi/>).

We are looking for a Research Scientist who can work on the design and development of high-quality software (C++) that builds on our current projects and extends them with performance monitoring capabilities for new and advanced hardware and software technologies. Experience with C++, high-performance computing performance tools, large-scale systems, compiler technology, and large software systems are all desired skills. However, candidates with a solid computer science foundation and excellent systems and programming skills are encouraged to apply.

These projects are leading the technology in performance analysis of scientific applications running on state-of-the-art hardware and in the modernization of code. This role will offer opportunities for publication, for travel that will involve interacting with research partners and participating in the research community, and for special training in new and emerging technologies that are relevant to the work.

The prospective hire will have the distinction of working at the Innovative Computing Laboratory (<http://www.icl.utk.edu/>), a world-class research lab at the University of Tennessee, Knoxville. He

or she will also have close and frequent collaboration with industry partners, including Intel, NVIDIA, AMD, and IBM.

Education

A PhD in computer science or a related field with a demonstrable background in computer science, particularly in computer architectures and parallel processing; or an MS in computer science or a related field plus 3-5 years of relevant research or work experience.

Experience

Technical experience in system software, parallel computing, scientific applications, low-level libraries; prior experience and expertise with systems programming, benchmarking, performance analysis toolkits, C, C++, and Fortran. Significant experience developing large software systems is a significant plus.

Job Skills

The following skills are required: extensive knowledge of programming techniques, strong low-level system programming abilities, high proficiency in C/C++, a basic understanding of the Fortran language, technical writing and presentation skills, excellent communication skills, and a strong publication record.

How to Apply

For consideration, send CV and contact information for three references to:

Dr. Heike Jagode at jagode@icl.utk.edu

Dr. Anthony Danalis at adanalis@icl.utk.edu

University of Virginia

Open Rank Professor of Data Science - Data Analytics and Data Systems Engineering

The School of Data Science at the University of Virginia (UVA) seeks applicants for Open Rank Tenured/Track faculty, starting with the August 2020 academic year, who will excel in research, teaching and service in one or more of the following areas:

- Data analytics and machine learning: foundational machine learning, statistics, operations research, unstructured data, image analysis, social and digital media, game theory, mechanism design, learning theory; and
- Data Intensive Applications and Systems: Infrastructure design, data management and supporting architectures, dynamic resource allocation and scheduling, design of hybrid cloud architectures, mobile cloud computing, and collaborative methods for cloud federations.

Duties include research, teaching (residential and online), mentoring and advising students, and service to the school and university. The new faculty may conduct research and teach courses throughout the curricula in data science.

Candidates must have earned or be on track to earn a PhD in Engineering or Computer Science or a closely related field. By June 2020, candidates must be on track to graduate with degree conferral by the appointment start date. Candidates must have a record of excellence in research in applications of data science to problems in appropriate domain(s), as appropriate for the candidate's

rank. A demonstrated commitment to teaching excellence to is required. Evidence of an explicit commitment and activities promoting diversity and advancing understanding and outcomes for underrepresented groups is essential. Appointment with tenure requires documented excellence in research and teaching and a proven national reputation.

TO APPLY:

Please visit the School of Data Science hiring page: <https://datascience.virginia.edu/pages/join-our-team>.

For questions about this position, please contact Don Brown at deb@virginia.edu. For questions about the application process, please contact Rhiannon O'Coin at rmo2r@virginia.edu

The selected candidate will be required to complete a background check at time of offer per University Policy.

The University of Virginia, including the UVA Health System and the University Physician's Group are fundamentally committed to the diversity of our faculty and staff. We believe diversity is excellence expressing itself through every person's perspectives and lived experiences. We are equal opportunity and affirmative action employers. All qualified applicants will receive consideration for employment without regard to age, color, disability, gender identity or expression, marital status, national or ethnic origin, political affiliation, race, religion, sex (including pregnancy), sexual orientation, veteran status, and family medical or genetic information.

Wake Forest University

Teacher-Scholar Postdoctoral Fellow The Program for Leadership and Character

The Program for Leadership and Character and the Department of Computer Science at Wake Forest University seek to fill a Teacher-Scholar Postdoctoral Fellowship for 2020-2021 focused on ethics and character in computer science, technology, and data. The fellow will develop teaching resources and syllabi, teach 2 to 3 courses, and contribute to research on leadership and character within the university context.

The position could start as early as June 1st.

Application details are available at:

https://wfu.wd1.myworkdayjobs.com/en-US/Staff_Career_Website_live/job/Winston-Salem-NC/Teacher-Scholar-Postdoctoral-Fellow-The-Program-for-Leadership-and-Character-and-The-Department-of-Computer-Science_R0002512

Wayne State University

Lecturer

The Department of Computer Science is seeking qualified candidates for open non-tenure track lecturer positions. Positions are anticipated as one-year renewable positions to start in Fall Semester of 2020.

More information about this opportunity, including how to apply, is available at the following link: <https://engineering.wayne.edu/cs/about/opportunities.php>.

Wayne State University is a premier, public, urban research university located in the heart of Detroit where students from all backgrounds are offered a rich, high-quality education. Our deep-rooted commitment to excellence, collaboration, integrity, diversity and inclusion creates exceptional educational opportunities preparing students for success in a diverse, global society. WSU encourages applications from women, people of color, and other underrepresented people. Wayne State University is an affirmative action/equal opportunity employer.