

2015:

A Year of Celebration and Leadership

During this GT Computing 25/50 Anniversary year, there has been no shortage of stories shared at the College of Computing. It's enough to make a dean wonder: In another 25 or 50 years, what stories will be shared of *this* time, of *this* moment in the College's history, and of *these* special individuals who make up GT Computing? What are we doing today that will stand the test of time?

First, we are leading. Launched just 25 years ago, the College of Computing has assumed a leadership role at the Institute that belies our comparative numbers of students or faculty. Two of Georgia Tech's interdisciplinary research institutes—or IRIs, established to direct the Institute's overall top research priorities—are led by College of Computing faculty: **Beth Mynatt** with the Institute for People and Technology, and **Henrik Christensen** with the Institute for Robotics and Intelligent Machines. Meanwhile **Wenke Lee** has positioned the Georgia Tech Information Security Center to be the next research center that makes the leap to IRI status, while **Srinivas Aluru** and **Dana Randall** (pictured below) have co-led a Georgia Tech initiative in data science that has a bright future.



Ellen Zegura, co-creator of our Computing for Good initiative, has taken her zeal for civic-minded computing to a whole new level, successfully transforming this “Tech for Good” mentality into a quality-enhancement plan that will be extended to all of Georgia Tech, beginning in 2016.

And speaking of leadership, that's exactly what the College of Computing has done in Georgia Tech's soon-to-close Capital Campaign. We were the first unit on campus to reach our campaign goal—in November 2013, more than two years ahead of schedule. As of this writing, we stand at 135 percent of our goal. Who knows where we will be on Jan. 1, 2016?

One thing is certain: We will be awash in students. Since 2008, our undergraduate applications are up 642 percent. Our (on campus)



M.S. CS applications have jumped up by more than half just since 2013, and the number of Georgia Tech students minoring in computing has also skyrocketed (it seems students view computing as a type of employment insurance on their diplomas!).

All totaled, in Fall 2015 we are set to enroll more than 5,000 total students—by far the largest total in GT Computing history.

Finally, a quick word about our online M.S. program (OMS CS). Like our groundbreaking undergraduate CS curriculum, Threads, did nearly 10 years ago, OMS CS has made an impact felt throughout higher education. You might have heard that we have a big fan. His name is President Barack Obama, and during his March 2015 campus visit he credited Georgia Tech as a leader in making college more accessible and affordable, with one example being (you guessed it) the OMS CS program.

We're extremely proud of OMS CS because it represents the product of thousands upon thousands of hours of work by dedicated faculty, staff, and administrators—not to mention many hours of hard labor by OMS students, who now know why Yellow Jacket alumni brag that “got out” rather than graduated from Georgia Tech. And this December, we will celebrate the program's first graduates.

Twenty-five years is a long time. When the College of Computing doubles its age, will these stories still be told? I like to think so. From where I sit, they represent the best contributions of one of the best computer science programs in the world.

Before being granted the privilege of serving as its dean, I said that the size and structure of Georgia Tech's College of Computing positioned it well not simply to excel and follow, but to *lead*. And that is exactly what we are doing. Thank you for being part of it.

Best regards,

Zvi Galil

*The John P. Imlay Jr.
Dean of Computing*



College of Computing



Dean: **Zvi Galil**
151 faculty
110 academic faculty
41 research faculty
85 staff

Schools

School of Computer Science (SCS)



Chair: **Lance Fortnow**
49 faculty
38 academic faculty
11 research faculty
10 staff

School of Interactive Computing (IC)



Chair: **Annie Antón**
51 faculty
39 academic faculty
12 research faculty
11 staff

School of Computational Science and Engineering (CSE)



Chair: **David Bader**
17 faculty
12 academic faculty
5 research faculty
5 staff

Research Centers



Algorithms & Randomness Center (ARC)

Director: **Dana Randall** (SCS)
26 affiliated GT faculty



Center for 21st Century Universities (C21U)

Director: **Rich DeMillo** (SCS)
66 affiliated GT faculty



Center for Experimental Research in Computer Systems (CERCS)

Director: **Karsten Schwan** (SCS)
34 affiliated GT faculty



Georgia Tech Information Security Center (GTISC)

Director: **Wenke Lee** (SCS)
41 affiliated GT faculty



GVU Center

Director: **Keith Edwards** (IC)
80 affiliated GT faculty

Affiliated Research Institutes



Institute for People and Technology (IPaT)

Executive Director:
Beth Mynatt (IC)
193 affiliated GT faculty



Institute for Robotics & Intelligent Machines (IRIM)

Executive Director:
Henrik Christensen (IC)
77 affiliated GT faculty



→ Outreach

Each year hundreds of Atlanta-area K-12 students whet their appetite for computing—or discover one they never knew they had—through programs organized by the College's Office of Outreach, Enrollment, and Community (OEC). Whether it's after-school workshops in partnership with 17 Atlanta public schools, coding competitions drawing dozens of middle- and high-school competitors, summer computing camps for coders of nearly all K-12 ages, there is something for every aspiring College of Computing student.

9+ Outreach Programs | **1,000+** Students Participating | **17** Partner Schools



→ Community

One hallmark that distinguishes the College of Computing from its peers is the strong community that unites and supports our students. Part of OEC's mission is to foster this community, partly by providing administrative support to our many student organizations. From gaming to cybersecurity, robotics to animation, women to underrepresented minorities—if there's an interest or audience to be represented, we've probably got an org for that.

32 Student Organizations | **990+** Students Participating



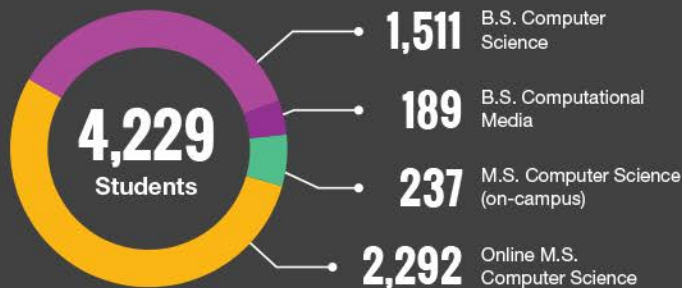
→ Career Services

As much as our students love Georgia Tech, they can't be students forever. To help them succeed in the post-graduation world, we've launched a career services program that started with Career Fairs, moved on to a Fortune 500-studied Corporate Affiliates Program (CAP) that also boasts a significant Georgia footprint, and now encompasses a career adviser in residence who provides experience and advice to help students build their skills and land the best jobs out there.

26 CAP Companies in 2014–15 | **3,257** Unique Student Attendance 2014–15 Career Fairs | **159** Unique Company Attendance 2014–15 Career Fairs

COLLEGE OF COMPUTING

Enrollment (Spring 2015)

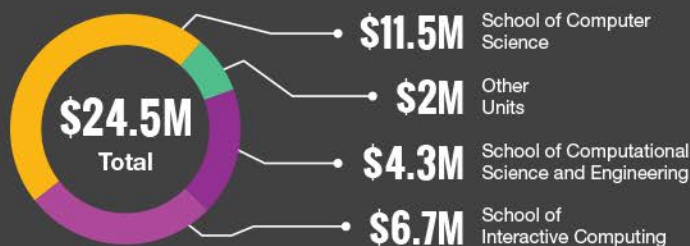


2014–15 Top Research Honors

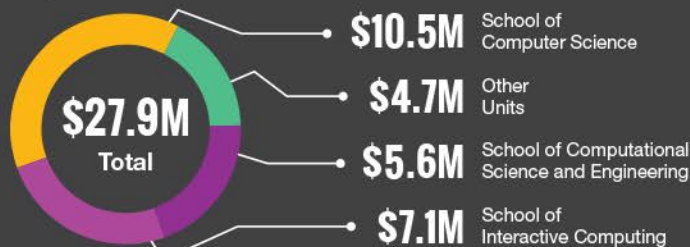
- 1 American Academy of Arts & Sciences Fellow (2 total in College of Computing): **Dick Lipton** (SCS)
- 1 American Association for the Advancement of Science Fellow (9 total): **David Sherrill** (CSE)
- 1 ACM Knuth Prize: **Dick Lipton** (SCS)
- 2 ACM Fellows (15 total): **Mark Guzdial** (IC) & **Shamkant Navathe** (SCS)
- 3 IEEE Fellows (17 total): **Aaron Bobick** (IC), **Henrik Christensen** (IC) & **Ling Liu** (SCS)

College FY15 Research Activity

New Awards

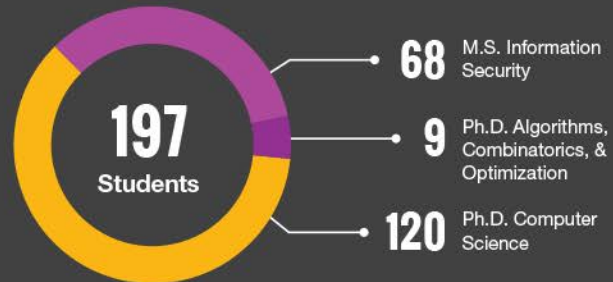


Expenditures



SCHOOL OF COMPUTER SCIENCE

Enrollment (Spring 2015)



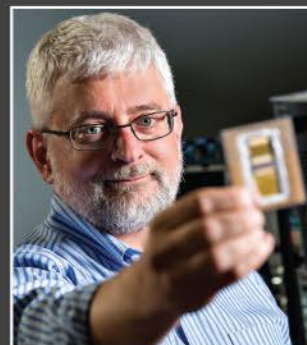
Research Areas

- Computer Architecture
- Databases
- Information Security
- Programming Languages & Software Engineering
- Networks
- Systems
- Theory

Research Highlights



Assistant Professor Taesoo Kim has attracted more than \$7 million in research awards since joining Georgia Tech in 2014. His latest projects include cyber-attack tolerance for naval warships, a new curriculum to educate next-generation security analysts, and DARPA-funded work to ensure data integrity between Internet hosts and applications.

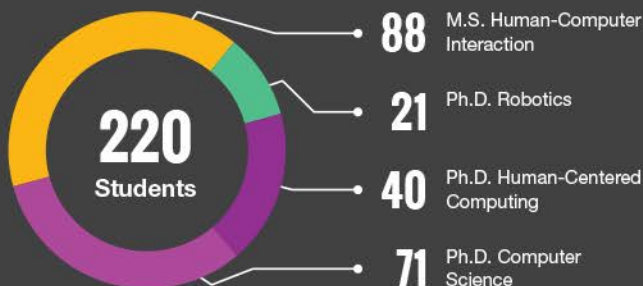


As the 2015 IEEE Computer Society President, **Professor Tom Conte** is leading a project called “Rebooting Computing” that looks toward a post-Moore’s Law re-examination of computing hardware and software. Conte wants to help shape the next Golden Age of computing performance—with or without an Internet of Things or the cloud.

Watch our research impact come alive in an interactive visualization: cc.gatech.edu/researchviz

SCHOOL OF INTERACTIVE COMPUTING

Enrollment (Spring 2015)



Research Areas

- Artificial Intelligence & Machine Learning
- Enterprise Transformation
- Geography, Graphics & Animation
- Human-Centered Computing & Cognitive Science
- Information Visualization & Visual Analytics
- Learning Sciences & Technology and Computing Education
- Privacy & Information Security
- Robotics & Computational Perception
- Social Computing & Computational Journalism
- Ubiquitous & Wearable Computing
- Virtual & Augmented Environments

Research Highlights



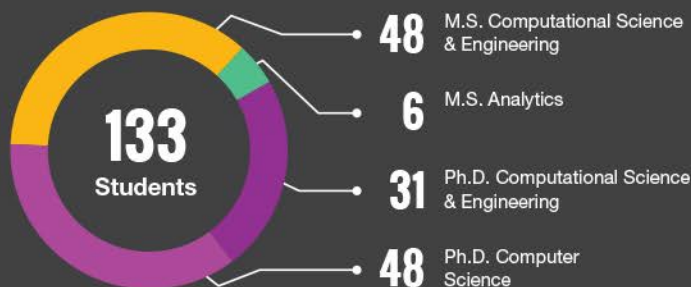
To advance robots into truly smart, intuitive machines, they still need to tackle the realms of human creativity. **Associate Professor Mark Riedl** has proposed an alternative to the Turing Test, "Lovelace 2.0," to better decipher machine creative intelligence. Overall Riedl works to develop artificial intelligence approaches to automated story generation and interactive storytelling for entertainment, education, and training.



Assistant Professor Munmun De Choudhury studies mental health and social media, seeking patterns in language and online behavior that can reveal, for example, how self-identity changes after a individuals become engaged to be married, or when new mothers begin to sink into post-partum depression.

SCHOOL OF COMPUTATIONAL SCIENCE AND ENGINEERING

Enrollment (Spring 2015)



Research Areas

- Analytics & Visualization
- Cybersecurity
- Data Science & Engineering
- High Performance Computing
- Machine Learning

Research Highlights



Associate Professor Rich Vuduc is addressing fundamental questions of how to automatically analyze, tune, and de-bug software for the parallel machines that have become integral to modern high-performance computing. He works with both multi- and manycore architectures applied to the simulation of natural and engineered systems.



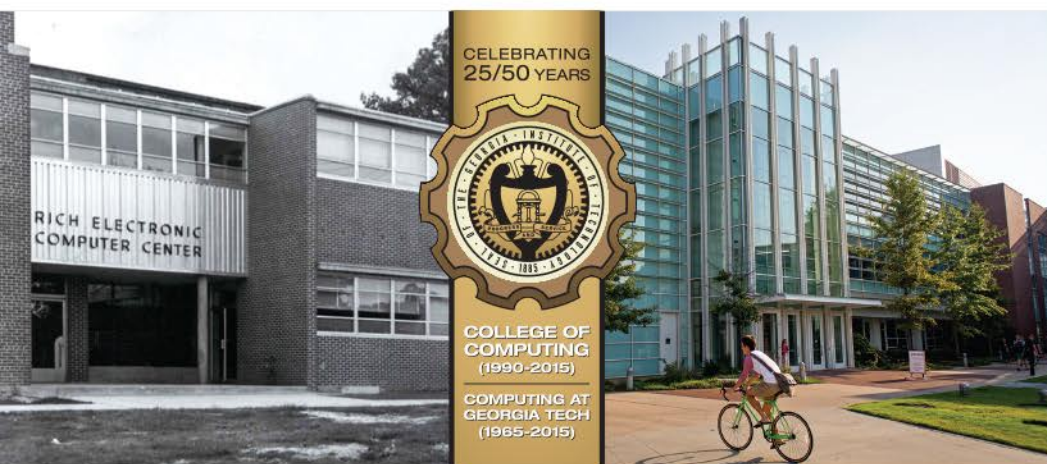
The new, interdisciplinary field of computational sustainability has a champion in **Assistant Professor Bistra Dilkina**, who leverages computational capabilities to find sustainable solutions for such applications as wildlife management, the spread of invasive species or disease, and social network structures.

➡ GT Computing 25/50 Anniversary

2015 has been a year of celebrating Georgia Tech's 50-year history of computer science and its vision to establish in 1990 only the nation's second college devoted to the study of computing. The GT Computing community has spent the year engaged in well-deserved revels, including a January kickoff party, a March visit by Vint "Father of the Internet" Cerf, an April tour through history guided by founding Dean Peter Freeman, the 10th anniversary of CSE, an exhibit of wearable computing hardware co-curated by Professor Thad Starner (IC), and the capping event, "Sunbird: A Symposium on the Future of Computing," in October. It has been year to recognize and toast Georgia Tech's contributions to the ever-growing world of computing.

Watch our anniversary come alive:

gtcomputing25-50.gatech.edu



➡ Alumni

9,509 Total Alumni

Top Countries

1. United States - 8,532
2. India - 227
3. South Korea - 111
4. China - 71
5. France - 70

Top U.S. States

1. Georgia - 4,175
2. California - 982
3. Florida - 439
4. Texas - 322
5. Washington - 321

Top Degrees Awarded

Between the College of Computing's formation on July 1, 1990, and Summer 2015, it has awarded some 8,480 degrees. Here are the Top 10 degrees by number awarded:

1. B.S. Computer Science - 4,397
2. M.S. Computer Science - 2,325
3. Ph.D. Computer Science - 520
4. M.S. Human-Computer Interaction - 273
5. B.S. Computational Media - 247
6. M.S. Information Security - 215
7. B.S. Information & Computer Science - 189
8. M.S. Information & Computer Science - 109
9. M.S. Computational Science & Engineering - 80
10. Ph.D. Human-Centered Computing - 41

Watch the world of GT Computing alumni come alive in an interactive visualization:
cc.gatech.edu/alumniviz

Georgia Tech College of Computing



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