SCHOOL OF COMPUTER SCIENCE (SCS)

Start Making Your Impact in Computer Science.

If you’re serious about computing and its potential to improve the lives of many people, you belong in Carnegie Mellon University’s School of Computer Science.

Since our founding in 1965, we’ve consistently been named among the nation’s top CS schools. We focus on teaching you computational thinking and fundamentals that will prepare you for internships as early as your first year. We emphasize collaboration. You’ll work shoulder-to-shoulder with the most talented CS students in the country. When you graduate, you’ll be prepared to walk into any research or industry team and begin making an impact from day one. Students studying computer science at Carnegie Mellon live and study with some of the world’s top talent across the university in the arts, engineering, business and humanities.

PROGRAMS

<table>
<thead>
<tr>
<th>Artificial Intelligence (BS)</th>
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<tr>
<td>Computational Biology (BS)</td>
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<tr>
<td>Computer Science (BS)</td>
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<tr>
<td>Bachelor of Computer Science and Arts (BCSA)*</td>
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<tr>
<td>Additional Majors:</td>
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<tr>
<td>Human-Computer Interaction**</td>
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<tr>
<td>Robotics**</td>
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* Interdisciplinary major offered in conjunction with the College of Fine Arts
** May be taken as a secondary major only

SCS Admitted Student Averages

<table>
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<tr>
<th>SAT-ERW</th>
<th>SAT-M</th>
<th>ACTE</th>
<th>ACTM</th>
<th>ACTC</th>
</tr>
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<tbody>
<tr>
<td>750-800</td>
<td>790-800</td>
<td>35-36</td>
<td>35-36</td>
<td>35-36</td>
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Middle 50% ranges

GRADUATED CLASS – SPRING 2019

Nearly half (47.5%) of undergraduates in the School of Computer Science are female, well above the national average of 18.7%.

FACULTY

Notable Faculty

> Mary Shaw received the 2012 National Medal of Technology and Innovation and the 2017 Doherty Award for Sustained Contributions to Excellence in Education. The Doherty Award is Carnegie Mellon’s top education award.

> Libratus, an AI developed by Computer Science Professor Tuomas Sandholm and former Ph.D. student Noam Brown, made history by defeating four of the world’s best professional poker players in 2018. More recently, the duo worked with Facebook AI to create Pluribus, an AI that defeated leading poker pros in six-player No-Limit Texas Hold’em. Sandholm and Brown received the prestigious Marvin Minsky Medal for their research in this area.

> Howie Choset, the Kavčič-Moura Professor of Computer Science, received the prestigious 2019 Engelberger Robotics Award for Education for his leadership of CMU’s undergraduate robotics degree program. The award also honored his robotics research in multirobot collaboration, surgery, manufacturing, infrastructure inspection, and search and rescue.

SCS Faculty Awards

Nobel Prize
A.M. Turing Award
Conde Nast Portfolio Brilliant Award
Pop/Sci Annual Brilliant 10
Guggenheim Fellowship Award
Sobelev Institute Gold Medal
Honda Prize
and more

* Pittsburgh undergraduate research and teaching track faculty
Alumni Accomplishments

The late professor Randy Pausch (CS 1988) co-founded Carnegie Mellon’s Entertainment Technology Center, led researchers who created Alice, a revolutionary way to teach computer programming, and received public fame for delivering The Last Lecture, which was later published in book form and co-written by the late Jeff Zaslow (DC 1980).

Luis von Ahn (CS 2005), a consulting professor in the Computer Science Department and co-founder of the language-learning platform Duolingo, won the prestigious 2018 Lemelson-MIT Prize — a $500,000 award that honors mid-career inventors. The prize recognizes his groundbreaking inventions, as well as his commitment to youth mentorship and improving the world through technological invention.

Student Startups

> Heather Knight (CS 2016) graduated with her Ph.D. in Robotics from Carnegie Mellon’s Robotics Institute and owns Marilyn Monrobot Labs in NYC, which creates socially intelligent robot performances and sensor-based electronic art. She founded the Robot Film Festival and Cyborg Cabaret, and was on the 2011 Forbes List for 30 under 30 in Science.

Top Employers

Google  facebook  Affirm  APT  Microsoft  UBER  ATG  amazon.com

IRg: A Distributed Graph-Based Framework for Information Retrieval

Large-scale information retrieval (IR) is essential for applications like web and e-commerce search, but it still lacks a scalable framework that can express and optimize a wide variety of models. IRg, a graph-based distributed framework for IR, aims to solve this problem by representing terms and documents beside their statistics and relationships as a graph structure. This research won the 2019 Alumni Award for Undergraduate Excellence.

**DID YOU KNOW?**

1. The School of Computer Science launched the nation’s first bachelor of science in artificial intelligence. The program and its curriculum focus on how complex inputs — such as vision, language and huge databases — can be used to make decisions or enhance human capabilities. Five SCS departments partnered to create the program.

2. Our computer science students learn systems/application skills but also acquire a deep understanding of theoretical and mathematical foundations of computation, making them highly desirable for both industrial positions and advanced graduate work.

3. Our Computational Biology Department offers a BS in computational biology. The department, the first of its kind to be created within a computer science school, emphasizes developing rigorous and theoretically sound computational approaches to modeling and understanding how biological systems function.

4. Our Robotics Institute was the first of its kind in the world and remains the leader in research, education and innovation in robotics.

5. Students in the School of Computer Science can study abroad in various locations, including Carnegie Mellon University in Qatar’s CS program, located in Doha’s Education City.

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*Percentages recorded as of January 2019

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**RESEARCH**

BLT: Exact Bayesian Inference with Distribution Transformers

This work offers a static analysis for solving the Bayesian inference problem for finite-state probabilistic programs featuring categorical random variables and looping control flow. The analysis was then incorporated in the BLT tool, which infers output distributions for probabilistic programs with possibly nonterminating loops. The work, which won the 2019 Allen Newell Award for Excellence in Undergraduate Research, holds implications for procedural programming with recursive and first-order functions.

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**GRADUATE SUCCESS**

80% EMPLOYED  3% NOT REPORTED  1% PLANS PENDING  16% GRAD SCHOOL

170 GRADUATES IN 2018*

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*Percentages recorded as of January 2019

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November 2019