

# Why Study Computer Science?

Computer science is now a critical tool for pursuing an ever-broadening range of topics, from outer space to the workings of the human mind. In most areas of science and in many liberal arts fields, cutting-edge work depends increasingly on computational approaches.

The undergraduate program at Brown is designed to combine breadth in practical and theoretical computer science with depth in specialized areas. These areas range from traditional topics, such as analysis of algorithms, artificial intelligence, databases, distributed systems, graphics, mobile computing, networks, operating systems, programming languages, robotics and security, to novel areas including games and scientific visualization.

State-of-the-art facilities are accessible to students 24 hours a day and include specialized high-end equipment such as an immersive virtual-reality Cave and a motion-capture lab.

More information on the CS department can be found at <http://www.cs.brown.edu>. Also, please feel free to email [dept@cs.brown.edu](mailto:dept@cs.brown.edu) (or call 401.863.7600) with any questions or to set up a visit.



Matt Lerner, A.B. Lead Program Manager, Windows User Experience, Microsoft

***“A computer science degree will be a huge help if you’re interested in technology. The credibility you’ll have with other techies and your ability to understand technical issues will be invaluable.”***

## Life After Brown

Brown’s Computer Science graduates are in-demand in both academia and industry. Many graduates go on to top graduate schools and enter academia; Brown CS graduates have become chairs of major CS departments (including those at MIT and the University of Washington). Others have become high-level executives at companies like Macromedia, Microsoft, Sun, and TiVo. Some have won Oscars for their work in film animation, and still others have started innovative high-tech companies.

## Be Involved



Jeff Beall, A.B., Sc.M. Lead Technical Director, Shrek II, now Studio Pipeline Architect, PDI/Dreamworks

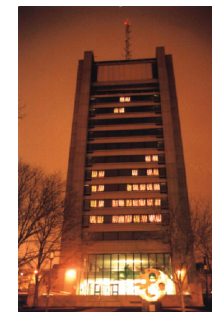
***“The people I met during my time there – both the professors and fellow students – became a very important part of my life. I still hang out with friends I made from my Brown CS days.”***

Much of the life and learning of a student takes place outside of class. The Brown CS Department hosts several student groups, including WICS (Women in Computer Science) and the CS DUG (Departmental Undergraduate Group), as well as impromptu study groups and film screenings.

Brown CS undergrads keep up the “hipster nerd school” image Brown acquired in Douglas Coupland’s *Microserfs*. They are known for both the high quality and creativity of their work. One student project turned Brown’s Sciences Library into a 10-story-high Tetris game

that was covered by the New York Times.

In another example, a software engineering course built a complex system for Brown’s SafeRIDE shuttle service. The final product, which included high-end wireless work, was so successful that not only has it revolutionized Brown’s shuttle system, but some of the students spun off a company to market the system to other universities.



World’s Tallest Tetris

## Interact with Faculty



***“I started TA’ing during the second semester of my freshman year and TA’d almost every semester semester after that.”***

Natasha Gelfand, Sc.B. PhD student, Stanford

The Computer Science Department at Brown encourages student-faculty interaction in several ways: a low faculty-student ratio means more individual attention, the majority of CS faculty involve undergraduates in their research (and are routinely co-authors on papers), and many students work as teaching assistants (TAs), helping faculty design and teach courses. TAs enjoy an incredible learning experience rarely gained from simply taking a course.

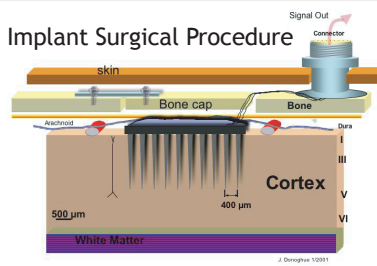
Senior faculty often teach introductory courses and students learn not only from such faculty’s extensive experience but are also involved in giving feedback on books in progress; thus their input shapes not only what students will learn at Brown but at other schools as well.



# Interdisciplinary Options

The Department encourages interdisciplinary work. Established interdisciplinary majors include:

- ✓ Applied Math-CS
- ✓ Mathematics-CS
- ✓ Computational Biology
- ✓ CS-Economics

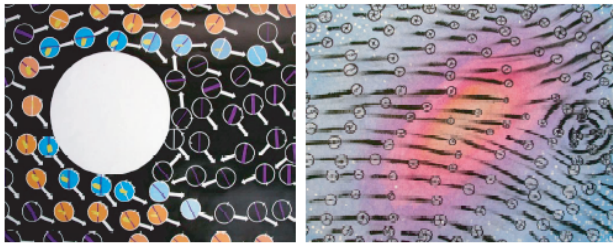


Professor Michael Black has teamed with faculty in other departments, including Neuroscience and Applied Math, to create neural implants that translate

thoughts about motion into actual movement of prosthetic limbs. Human trials are now under way through a spin-off company.

Brown students can also design their own majors. Recent individually designed majors have included:

- ✓ Cognitive Science-CS
- ✓ English-CS
- ✓ Physics-CS



Brown and Rhode Island School of Design (RISD) undergraduates explore artistic contributions to better scientific visualization in Professor David Laidlaw's joint Brown-RISD course, Virtual Reality Design for Science.



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Brown University  
Computer Science

The  
Undergraduate  
Experience

From - PhD student Morgan McGuire's games research, with undergraduates Brandon Diamond and Hari Khalsa and PhD student Peter Sibley: an improved data structure for better quality real-time rendering of large and dynamic height fields on programmable hardware.