

# Computer Science



Information technology (IT) jobs comprise five of the top ten salaries in the U.S., according to the Bureau of Labor Statistics' forecast of the 30 fastest growing jobs through 2014. Almost all of these jobs are in the areas of software engineering and systems analysis. Money magazine has rated software development as one of the "Top Ten Best Jobs" to hold, rating it highly for pay, flexibility, and creativity. Software development requires a demanding skill set for job entry, and Stevens' computer science programs provide a world-class foundation for these rewarding careers. Research shows the U.S. workforce faces a growing shortage of professionals with skills in software development, a burgeoning demand for IT jobs, and a drop in the number of IT graduates.

## CS Majors—You Have Options

The Department of Computer Science at Stevens Institute of Technology offers three majors. All share a common core curriculum that develops problem solving and software development skills, as well as the software engineering and project management skills that any modern IT professional will need. A two-semester senior-year capstone project course shared by all majors gives students invaluable experience in exercising these skills. The course is modeled on business software development practices, so that you will experience a transition from academia

to business. You will work with real-world clients to produce useful, well-engineered software products. Many projects are sponsored by companies or government agencies, such as the Federal Aviation Administration (FAA), Johnson & Johnson, and Siemens.

## Computer Science Major

The Computer Science (CS) major provides a firm grounding in software systems, emphasizing both practical development skills and CS foundations, while providing a great deal of flexibility for specialization. Students have complete freedom in choosing elective courses. To provide some guidance, the department has defined optional "concentrations" of electives that permit the student to drill down into specific topics—networks, graphics, software engineering, and the design of computer games are popular choices. An alternative option for electives is that students may choose an approved "application area" outside of CS. An application area is an integrated set of courses in another field that has close ties to Computer Science. Approved application areas include financial systems and scientific computing.

## Cybersecurity Major

The Cybersecurity (CyS) major is a unique major that provides a rigorous education in the principles of building secure software systems. It combines

## Computer Science

### Cybersecurity

### Information Systems

#### Concentrations and Application Areas:

Networks, Design of Games, Cybersecurity, Financial Systems, Intelligent Design and Manufacturing, Scientific Computing, Enterprise Computing

## Recognized Excellence

Stevens was designated as a National Center of Academic Excellence in Information Assurance Research and Education by the National Security Administration.

## Average Starting Salary

Computer Science department majors, Class of 2009:

**\$68,200**

## Top Employers of Stevens Graduates

BAE Systems  
ExxonMobil  
Hamilton Sundstrand  
ITT Industries  
Johnson & Johnson  
JP Morgan Chase  
Northrop Grumman  
Picatinny  
UBS



CS foundations and fundamentals of software systems with courses in cryptography, privacy and software security, emphasizing both mathematical foundations and practical laboratory experience.

### **Information Systems Major**

The Information Systems (IS) major emphasizes business applications of IT. Building on the common core of all majors in the Computer Science department, IS combines software engineering, Web application, and front-end skills with basic business skills, including economics, accounting, and marketing.

### **Flexible and Comprehensive**

If you are unsure of which Computer Science major you wish to pursue, you will find a lot of flexibility in the first two years of study, allowing you to switch majors with ease.

The CS and CyS majors are traditional computer science curricula, focusing on the internals of software systems, including the hardware-software interface. Courses such as operating systems cover concepts that are found in any large sophisticated software system. The IS major places more emphasis on application development than the software systems majors. Both categories of majors include courses in software systems and applications; the difference is one of relative emphasis.

Much more information can be found on the Computer Science web site: <http://www.cs.stevens.edu>.

### **Access to World-Class Research**

The Stevens Computer Science Department is also the home to world-class research in areas such as computer security, computer graphics, vision and visualization, software engineering, and networks. The quality of this research is demonstrated by the publication and funding records of the faculty of the department. As an undergraduate, you will be encouraged to get involved with faculty in their research. You may also choose to stay at Stevens for graduate work, pursuing Ph.D. research with the faculty you will have come to know during your undergraduate studies.

The Computer Science Department at Stevens offers you a rigorous and rewarding program that stands apart from those of other universities. Stevens has been named a Center of Academic Excellence in Information Assurance Education by the National Security Agency, a program that aims to reduce vulnerability on our national information infrastructure. *The Princeton Review* and *Forbes* have ranked Stevens among the top 20 Most Entrepreneurial Campuses in the nation. A Stevens education will challenge and inspire you, preparing you to become a leader in your field of choice.

### **Computers In Medicine: A Stevens Success Story**

Computer science graduate Daniel Mirota was looking for a practical application of his studies. Through Stevens' co-op program, he spent terms at Siemens Corporate Research in Princeton, NJ, where he was introduced to the world of medical software. "My work there showed me how software can do much more than just run computers," he says. "It can save lives."

Now a fully funded Ph.D. candidate at Johns Hopkins University, Mirota's research continues to focus on computer science in medicine. His area has changed, however — he is currently focusing on surgical assistant software for sinus surgery. "The goal is to use computer vision techniques to register the endoscopic video directly to a CT scan of the sinus. I've made good progress and I'm now gathering my results into a solid research paper. I've finished my courses, though I will be taking Surgery for Engineers over the summer and then a few courses that interest me in the fall."

Mirota's next research project will be within ultrasound or MRI, after which he will decide upon a research direction for his thesis. "It will be somewhere with the realm of registration and tracking algorithms," Mirota says.

### **Office of Undergraduate Admissions**

Castle Point on Hudson

Hoboken, NJ 07030

ph: 800.458.5323

fax: 201.216.8348

email: [admissions@stevens.edu](mailto:admissions@stevens.edu)

[www.stevens.edu](http://www.stevens.edu)

**STEVENS**  
Institute of Technology