

# COMPUTER SCIENCE



*"I've always loved math and problem solving. Computer science allowed me to work with both those things, as well as be creative."*

– Rebecca Freedman, '13

**As a major in computer science at Millersville, you will be exposed to state-of-the-art equipment, theory and concepts. Our faculty of highly motivated and knowledgeable professors will guide you through the courses and prepare you to join one of the most exciting and innovative professions.**

## BACHELOR OF SCIENCE (B.S.)

There are two components of the B.S. degree in computer science. The first is the core, which all computer science majors must take. The second is an elective section, in which each student selects three courses, based on personal interest and career goals, from among advanced topics in computer science. This allows students to tailor their coursework to their own needs, while ensuring that every student receives the same fundamental background in the canonical areas of computer science.

## MINOR IN COMPUTER SCIENCE

Majors in other disciplines may take a minor in computer science.

## MINORS OF INTEREST TO COMPUTER SCIENCE

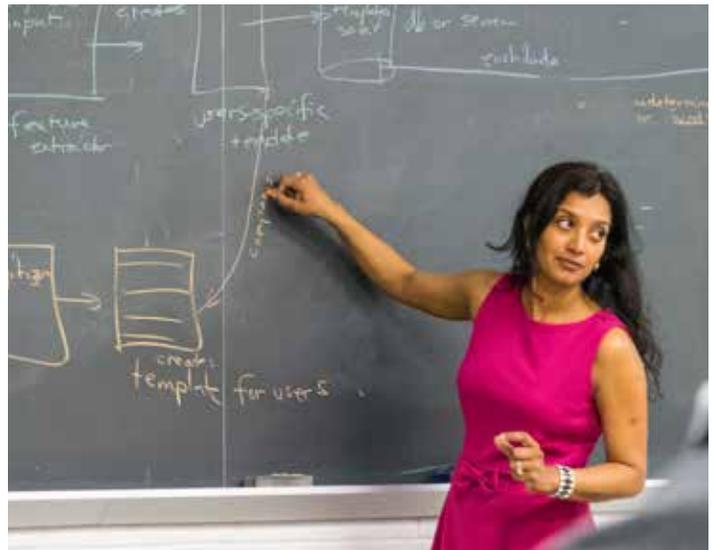
Since computer science impacts every discipline in some way, any minor can combine with computer science to create a career track. Here are some of the potential minors for computer science majors.

- Biology
- Economics
- Entrepreneurship
- Geospatial Applications
- Graphic Communications
- Management
- Mathematics
- Music
- Physics
- Studio Art

## CAREERS

A computer science student has many possibilities for a career. Our graduates may pursue graduate degrees or directly enter careers in:

- Artificial Intelligence
- Bioinformatics
- Database Systems
- GIS Systems
- Computer Networks
- Graphics and Game Development
- Human-Computer Interaction
- Information Science and Business Applications
- Mobile Application Development
- Scientific Computing
- Security
- Software Engineering
- System Administration
- Web Development





## FACULTY

At Millersville, your professors (not graduate assistants) teach every class. Each student is assigned a faculty advisor who acts as your mentor throughout your academic career, a responsibility our faculty takes very seriously. Faculty members are active learners, engaged in research projects that welcome and encourage student collaboration. Student/faculty research is available as an opportunity to enhance and personalize the computer science undergraduate education at Millersville.

## FACILITIES

**Linux Lab** – One of the instructional labs, the Linux Lab consists of 27 PCs that run Arch Linux. Installed software includes IDEs and editors like Eclipse, Emacs, Vim and Netbeans. Supported languages include Java, C/C++, Python, Perl, Lisp, OCaml, Haskell, Prolog and D.

**Windows Lab** – One of the instructional labs, the Windows Lab consists of 27 PCs that run Microsoft Windows. Installed software includes IDEs and editors like Visual Studio, Eclipse and Netbeans. Supported languages include Java, C/C++ and C#.

**Intelligent Machines Lab** – One of the two research labs, the Intelligent Machines lab, directed by Dr. Roger Webster and Dr. Gary Zoppetti, contains several PCs and iMacs. All machines have high-end graphics cards to handle graphics and haptic research. This lab is also equipped with a flat-screen display for large group presentations.

**Adaptive Computing Lab** – The second research lab, the Adaptive Computing lab, directed by Dr. Blaise Liffick, is dedicated to human-computer interaction and assistive technology for the disabled. It contains several iMacs and PCs, and iPad tablets. The lab also contains a collection of interface devices, including alternative keyboard and pointing devices, eye-tracking devices and an augmentative communication device.

## CLUBS & ACTIVITIES

**Symposium Lectures** – The department presents a symposium on interesting research topics and applications of computer science.

**Computer Science Club** – Computer science majors organize and run a club, holding several social, career and technical events each year.

**Programming Team** – The programming team successfully competes in state and national contests.

**Cyber Defense** – The cyber defense team participates in the Collegiate Cyber Defense Competition and has qualified for nationals several times.

## STUDENT/FACULTY RESEARCH

Student participation in research is considered an integral part of the Millersville programs and provides an opportunity for students to apply their problem-solving skills to open-ended, unstructured, “real world” problems. Millersville’s Department of Computer Science has received nearly \$2 million in research funding from the National Science Foundation and other external funding agencies.

## INTERNSHIPS

Many options are available for students to benefit from hands-on experience through cooperative education programs and internships. These opportunities provide valuable and practical on-the-job experience, as well as enable students to earn college credits and, in most cases, a stipend or salary.

### Companies with which Millersville computer science students have done internships:

- |                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| 12:34 MicroTechnologies          | Meteor Tower Films, LLC                                |
| Aspire Ventures                  | Millersville University Information Technologies       |
| Clipper Digital/Clipper Magazine | NIST (National Institute for Standards and Technology) |
| DENTSPLY International           | Naval Surface Warfare Center, Philadelphia Naval Yards |
| DMI, Inc.                        | Seisan Consulting                                      |
| Dell Computer                    | Sharp Innovations                                      |
| H2OS Inc.                        | UPS                                                    |
| Havis, Inc.                      | Voith                                                  |
| Hershey Foods                    | Williams Apothecary                                    |
| IDenticard Systems               | Williams Forrest                                       |
| JAARS Inc.                       |                                                        |
| KSM Technology Partners, LLC     |                                                        |
| Listrak                          |                                                        |
| M Associates                     |                                                        |

## ACCREDITATION

The B.S. degree in computer science is accredited by the Computing Accreditation Commission of ABET, <http://www.abet.org>.

***“The Millersville University computer science program emphasizes foundational skills that transcend any single technology or platform. Analytical thinking, logical reasoning and team collaboration are essential to solving real-world problems.”***

– Michael Root, ‘11