



# WORLD CLASS EDUCATION

## MAKE AN IMPACT

As part of Kansas State University's College of Engineering, the Computer Science department is committed to offering high quality degree programs. Not only do we educate our graduates to become leaders in the competitive world of technology, we also prepare them to make an impact on all industries through their cutting-edge knowledge and training.

## TOP AREAS

### OF THE TECHNOLOGY INDUSTRY

1. Agriculture
2. Architecture and design
3. Communications
4. E-commerce and marketing
5. Education
6. Energy
7. Engineering
8. Entertainment
9. Financial services
10. Health care
11. Information Technology
12. Internet
13. National defense
14. Social media

## DEGREE PROGRAMS

### UNDERGRADUATE MAJORS

#### Computer Science

Computer science studies the design of computational devices and processes, the transfer and transformation of information, and techniques for making processes efficient and intelligence. The field is both creative and scientific, ranging from the study of theoretical algorithms to the practical problems of designing and implementing software.

#### Top 10 Areas of Specialization for Undergraduate Study

- |                                       |  |
|---------------------------------------|--|
| 1. Software Engineering               | 6. Database and Knowledge Management Systems |
| 2. Cybersecurity                      | 7. Bioinformatics                            |
| 3. Multimedia and Graphics Technology | 8. Enterprise Information Systems            |
| 4. Networks and Mobile Computing      | 8. Computer Science Theory                   |
| 5. Parallel and Distributed Computing | 10. Real-Time Embedded Systems               |

### GRADUATE MAJORS

- M.S. in Computer Science
- M.S.E. in Software Engineering
- Ph.D. in Computer Science

*Both the M.S.E and the Ph.D. in Computer Science are available via distance learning.*

# WORLD CLASS TECHNOLOGY

Students at Kansas State University gain hands-on, high-tech experience with a wide range of operating systems and application software. Whether exploring an Android tablet or a powerful supercomputer, it all begins in the department's own state-of-the-art technology labs.

## Beocat

- Beocat is a Beowulf cluster: a collection of computers networked together to perform massive parallel computations.
- Over 3,500 cores and 3 petabytes of RAM allow Beocat to chew through even the most challenging of operations.
- Student programming opportunities are available through concurrent courses and other undergraduate research.

## Cybersecurity Lab

- Hosts multiple networks of machines capable of emulating hundreds of combinations of hardware and operating system configurations.
- Allows exploration in network weakness and defense techniques, hacking and counter-hacking, software exploits, and cryptography.
- Our program has been named a **Center of Academic Excellence in Information Assurance Education** by the National Security Agency.

## Linux Lab

- Our dedicated Linux Lab allows students to learn about what goes on "under the hood" of operating systems and networking.
- Key concepts include priority based scheduling, system call handlers, memory managers, and networked file systems.
- Variety of operating systems, ranging from an instructional system called Pintos to the more widely used Android operating system.

## Gaming/HPC Lab

- Engage in a hands-on, high-tech experience with a wide range of operating systems and application software.
- Available hardware allows for the exploration of modern gaming interfaces like Xbox Controllers, WiiMotes, and Microsoft Kinect.



# WORLD CLASS FACILITIES

The CS Department is a part of the new 40-million-dollar addition to the Engineering Complex. In close proximity to the rest of the College of Engineering, our new home includes state-of-the-art labs, classrooms, and offices. This building project is part of an initiative by the Kansas legislature to increase the number of Engineering graduates from the three major state universities by 50%.



# WORLD CLASS FACULTY



The Computer Science Department is comprised of approximately 20 highly productive faculty members who form the backbone of our department's strong interdisciplinary teaching and research programs. Our faculty is committed to excellence in scholarly activities in both of these areas. Kansas State University professors are researchers themselves, giving you the state-of-the-art experience that you need to succeed. Lab-based classes make the learning environment more interactive, giving you a chance for extra feedback on homework and projects.

# WORLD CLASS INVESTMENT



## SCHOLARS PROGRAM

The CS Scholars Program is designed to provide high-achieving and inquisitive students opportunities to excel through enhanced courses, smaller class sizes, industry mentoring, and additional scholarships. For more information please visit <http://www.cs.ksu.edu/scholars>.

## SCHOLARSHIPS

For more information about scholarships at Kansas State University, please visit <http://www.k-state.edu/sfa/scholarships/>

## FINANCIAL ASSISTANCE

For more information about financial assistance at Kansas State University, please visit <http://k-state.edu/sfa>.



# WORLD CLASS INTERNSHIPS



# WORLD CLASS OPPORTUNITIES



Career possibilities in computing sciences are as numerous and varied as the applications for which computers are used. Software engineering and related occupations are forecast to be one of the fastest growing fields over the next decade. Job opportunities are available in traditional software development and in operational specialties in all areas of the economy: business, banking, communication, manufacturing, agriculture, entertainment, education, and government. The result is impressive starting salaries: exceeding \$65,000 as of Spring 2014 and continuing to rise every year.

## IMPLEMENT YOUR SKILLS

Many internships and co-op opportunities are available to our students that offer valuable professional experiences and contacts in the field before graduation. A wide variety of companies recruit students through the All-University Career Fair, Engineering Career Fair, and employer sponsored recruitment events within the Department of Computer Science. Microsoft, Google, Garmin, and National Instruments are just a few of the companies that actively recruit and employ CS students.

There are a number of on-campus information technology and web development-related jobs available for students to gain hands-on experience. Faculty members also involve students in research at all levels, and research-related employment positions are often available.



### OUR STUDENTS ARE EMPLOYED AT

- National Instruments
- EnVisage Consulting
- Texas Instruments
- General Dynamics
- Rockwell Collins
- Conoco Phillips
- GE Aviation
- Lexmark
- Garmin
- Honeywell
- Microsoft
- CivicPlus
- Lsi Logic
- Amazon
- Google
- SofTek
- Cerner
- Koch

### AND START WITH JOBS AS

- System Programmers
- Software Developers
- Network Specialists
- Technical Managers
- Software Engineers
- Network Engineers
- Technical Support
- Systems Analysts
- Database Admins
- Web Developers
- App Developers
- IT Directors

# WORLD CLASS CLUBS AND ACTIVITIES



## ASSOCIATION FOR COMPUTING MACHINERY (ACM)

The Association for Computing Machinery is the professional organization for computer scientists, and our student chapter sponsors guest speakers, programming contests, game nights, organizes Open House activities, and holds open tutoring sessions for computer science courses.

## WOMEN IN COMPUTING (ACM-W)

The ACM-W student chapter supports and celebrates women in computing by hosting social events that allow students to interact with other technical women, network with female professionals and scholars in computing fields, participate in volunteer activities, and more.

## MAKERSPACE CLUB

Club members have access to a makerspace with over \$10,000 of equipment, including MakerBot 3D printers, Arduino microcontrollers, and a plethora of motors, magnets, and electronic components which can be used to bring their creative visions to life.

## ACM SIGAI

The Association for Computing Machinery (ACM) Special Interest Group (SIG), on Artificial Intelligence. ACM SIGAI works with Machine Learning, Autonomous Robots, Data Science, Game AI and other related branches of AI. The club invites guest speakers, discusses trends in AI and has workshops on programming.

## MOBILE DEVELOPMENT CLUB

Club members develop software for mobile devices like tablets and phones.

## CYBER DEFENSE CLUB

Club members develop their cyber defense skills by hacking or counterhacking in simulated network environments. Opportunities also arise to meet guest researchers from other universities and to compete in national cybersecurity competitions.

## GAME DEVELOPMENT CLUB

Club members work in interdisciplinary teams to develop computer games. The club also sponsors presentations on game programming and development, demonstrates their games at K-State Open House, and hosts game jams.

## GAME NIGHTS

The Association for Computing Machinery (ACM) sponsors game nights throughout the semester. Students, armed with their personal computers, form teams to compete in a multiplayer networked game environment. Luckily, soda and snacks are provided because these parties usually last all night!

## KSU eSPORTS

K-State's competitive video gaming club hosts several tournaments throughout the school year in addition to competing in regional, collegiate, and national leagues and tournaments.

## CS MOVIE NIGHT

Come watch movies featuring the computer technologies of past, present, and future, followed by discussions about the social impact, artistic value, and implications of these great films.

# WORLD CLASS FUTURE

## APPLY TODAY

Take the first step towards embracing your world-class future with Kansas State University's Department of Computer Science by applying online at [www.k-state.edu/admit](http://www.k-state.edu/admit).

**Learn more at**  
**[cs.k-state.edu](http://cs.k-state.edu)**

**Computer Science**  
**Kansas State University**  
**Manhattan, KS 66506**

**Phone: 785-532-6350**



**@K\_StateCIS**

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#### **Notice of Nondiscrimination**

Kansas State University is committed to nondiscrimination in admissions, programs and employment. Inquiries and complaints: Contact Director of Institutional Equity, Kansas State University, 103 Edwards Hall, Manhattan, KS 66506-4801, (Phone) 785-532-6220; (TTY) 785-532-4807.