

Graduate Programs in Computer Science

THE UCF DIFFERENCE

PIONEERING RESEARCH

The department's faculty and students are very active in research that impacts many facets of modern society including: ways to make computers more intelligent (vision, image processing, and machine learning), ways to make computers easier to use and better at education and training (virtual reality, human-computer interfaces, and computer graphics), ways to make computers help communication (networking and mobile computing), ways to make computers more reliable and secure (cyber security and privacy, digital forensics, and software engineering), and advances in fundamental understanding (bioinformatics, systems biology, theory of computing, quantum computing, and artificial intelligence).

WORLD-CLASS FACULTY

Graduate students work alongside and publish with distinguished researchers who are internationally renowned for their scholarly contributions. They publish about 180 journal papers, conference papers, books and book chapters annually.

POTENT PARTNERSHIPS

Our research partners include the National Science Foundation, NASA Shared Services Center and NASA Kennedy Space Center, the Gates Foundation, the Office of Naval Research, the National Institutes of Health, General Dynamics, U.S. Army RDECOM, U.S. Army Research Office, JHT Inc., Oak Ridge National Laboratory, the U.S. Department of Energy, CyberRisk Partners, the Royal Bank of Canada, Jackson Technologies, the Air Force Research Lab (AFRL), and Sarnoff Corp.



NATIONALLY-RANKED TEAMS

#1 North America, #10 World: In 2018, the UCF Programming Team earned its best world finish in the ACM International Collegiate Programming Contest. From 13,000+ regional teams that try, only 150 or fewer elite teams make it to the world final "superbowl of smarts." UCF has achieved a top-three regional placement for 36 consecutive years, a record unmatched by any similar U.S. team.

Best in Nation: Students on UCF's Cyber Security Competition Teams have won five national titles. In 2014, 2015 and 2016, the team won Raytheon's national Collegiate Cyber Defense Competition. In 2018, they won the U.S. Department of Energy's CyberForce National Competition. They also won the 2017 Global Cyberlympics U.S. title and placed third in the world. The competitors belong to Hack@UCF, a student club that started in 2012 and has 300+ members.

PRIME LOCATION

Orlando is in the center of the I-4 High Tech Corridor with an industrial base that includes software, defense, space, simulation and training, financial services and entertainment. The Central Florida Research Park, adjacent to UCF, is the nation's 7th largest with more than 10,000 employees and 120 companies including General Dynamics, Raytheon, and the Institute for Simulation and Training.

GRADUATE DEGREES OFFERED

MASTER'S

Computer Science
Data Analytics
Digital Forensics

DOCTORAL

Computer Science

FACULTY HONORS

Our faculty are members and fellows of professional societies, including IEEE (4 fellows), the International Association of Pattern Recognition (1 fellow), International Society for Optics and Photonics (1 fellow), and the American Association for the Advancement of Science (1 fellow).

Professors James Baker and Elaine Weyuker are National Academy of Engineering members inducted for their fundamental contributions to the field.

ALUMNI AND STUDENTS SAY

"UCF stands for opportunity, and that is what it gave me – and opportunity to learn from the best faculty, to experience a highly conducive research and work environment, and an opportunity to build a better future for myself."

—Imran N. Junejo, Ph.D., '05, '07,
Associate Professor of
Computer Science in Dubai

"My four years as a doctoral student at UCF were a magical time filled with scientific inquiry, engineering rigor and creative imagination."

—Assem Kaylani, Ph.D., '01, '08,
Lead Software Engineer,
GE Transportation

"When I was in China, a friend told me that UCF's Center for Research in Computer Vision offered many challenging research opportunities. Working on my Ph.D. at UCF helped me get my internship and my job at Google."

—Yicong Tian, '16



UCF

**College of Engineering
and Computer Science**



FACULTY FACTS

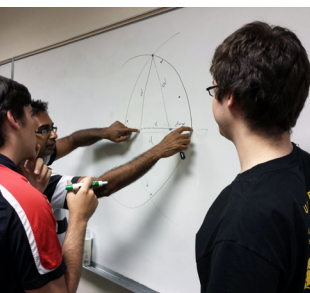
Trustee Chair Prof. Mubarak Shah, director, UCF Center for Research in Computer Vision, is one of the world's most cited authors in computer vision. He is known for his research in video surveillance, visual tracking, human activity recognition, visual analysis of crowded scenes, and video registration.

Prof. Charles Hughes, director, Synthetic Reality Lab (SREAL Lab), has deep interdisciplinary collaborations. His TeachLivE system uses a mixed-reality classroom of simulated students to train teachers in working with challenging students. This system has been adopted by universities nationwide and is supported by the Bill & Melinda Gates Foundation.

Prof. Hassan Foroosh is co-principal investigator on the NASA project "Global Observations of the Limb and Disk," UCF's largest research contract (\$55 million). This project will launch a satellite to observe the sun's interactions with Earth's atmosphere. Dr. Foroosh leads the team that will archive and process images from the satellite. He received the Pierro Zamperoni award from the International Association for Pattern Recognition.

Associate Prof. Kenneth Stanley is famous for several evolutionary neural network algorithms he has developed, particularly Neural Evolution of Augmenting Topologies (NEAT) and Hyper-NEAT. Stanley and UCF Ph.D. graduate Joel Lehman developed a new search technique, Novelty Search, featured in the book *Why Greatness Cannot be Planned: The Myth of the Objective* (Springer, 2015).

Associate Prof. Gita Sukthankar, director, UCF Intelligent Agents Lab, focuses her research in activity and plan recognition. She is lead editor of the widely-acclaimed book, *Plan, Activity, and Intent Recognition: Theory and Practice* (Morgan Kaufmann, 2014). She serves on the National DARPA Information Science and Technology study group.



RESEARCH FOCUS AREAS

- Computer Vision
- Image and Video Processing
- Machine Learning and AI
- Virtual and Augmented Reality
- Human-Computer Interaction
- Computer Graphics
- Software Engineering and Systems
- Databases and Data Analytics
- Parallel Computation
- Networking and Mobile Computing
- Computer Security and Digital Forensics
- Bioinformatics and Systems Biology
- Theory of Computing, Algorithms, and Quantum Computing

RESEARCH CENTERS AND CLUSTERS

- Center for Research in Computer Vision
- Interactive Systems and User Experience Research Cluster of Excellence
- Cyber Security and Privacy faculty cluster
- Genomics and Bioinformatics faculty cluster

ALUMNI STARS

ALAN EUSTACE, Ph.D., '84

Former senior VP of Knowledge, Google. He joined Google in 2002 when the company was in its fourth year. Previously he was director of HP's Western Research Lab. He is also the current world-record holder for making the highest-altitude free-fall jump.

J. GREG HANSON, Ph.D., '87

President of Excellence in Business, a Washington, D.C.-based IT firm. He has more than 30 years in technology leadership positions. He was the first Chief Information Officer of the United States Senate.

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ADMISSION

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College of Engineering and Computer Science