Fighting disease with data

News Engineering Research Building topped off

The College marked a milestone in the construction of its $200 million, 130,000-square-foot Engineering Research Building on Oct. 16, 2019, approximately, 10 years since its initial groundbreaking. Faculty, students and community members celebrated the historic day. Internationally renowned architect Zaha Hadid designed the building.

FROM THE CHAIR

The VCU Department of Computer Science provides leadership in the digital economy.

With substantial funding from federal agencies and industry, our faculty are working with their research communities to publish in top academic journals and present at conferences. Our undergraduate and graduate students regularly participate in computational events and other camp-based summer programs.

We have had remarkable growth in our data science, cybersecurity and software engineering specializations, especially for computer science majors. We are also training the future of digital security at VCU students, including those with no traditional background to prepare them to be successful in this new economy.

Krzysztof (Kryš) Cios, Ph.D., D.Sc., M.B.A.
Chair of the Department of Computer Science

GROWTH

Next Engineering Research Building topped off

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UNDERGRADUATE SPECIALIZATIONS:
- Cybersecurity
- Data science
- Software engineering

AREAS OF RESEARCH:
- Cybersecurity
- Data science
- Biostatistics
- Cryptography
- Natural language processing
- Machine learning
- Mobile and edge computing
- Quantum machine learning
- Robotics
- Software engineering
- Wireless networks

40 ACTIVE RESEARCH GRANTS
17 INVENTION DISCLOSURES SINCE 2014
4 GRADUATE PROGRAMS

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17 INVENTION DISCLOSURES SINCE 2014
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Computer science professor named Commonwealth Cyber Initiative Fellow

The Commonwealth Cyber Initiative (CCI) has named Milton Wang, Ph.D., a CCI fellow. Wang is a professor of computer science in the VCU College of Humanities and Sciences and director of VCU’s Cybersecurity Center.

The CCI was established in 2014 to advance cyber innovation and secure Virginia’s global research in the digital economy. CCI fellows are leaders in digital identity, cybersecurity and related emerging areas across the Commonwealth. The CCI fellows are brought together to focus on identifying and addressing the Commonwealth’s cybersecurity needs, which include policy, research, education and training.

Digital forensics for national security

When Ahmed, Ph.D., assistant professor of computer sciences, received a 2017 NSF I-Corps Plus Faculty-Industry Partnership Grant from the Virginia Venture Fund (VVF), his focus was to understand how to use various data analytics and electronic techniques to solve real-world problems for national security. The VVF provided seed money to help faculty members and student entrepreneurs develop platforms that could then be sold to the military, law enforcement or other agencies.

Ahmed’s award supports his research to develop digital forensics technologies for detecting cyber and network attacks. The new approach utilizes digital evidence gained from activations, examinations and other cyber forensic tools. The research team, which includes researchers at the National Institute of Standards and Technology and other offices, is focused on research in national security with the U.S. National Institute for Law Enforcement and Social Justice.

Undergraduates research natural language processing

Brandon Bank, a computer science and mathematics major from Virginia Tech, is one of the students who has been working on natural language processing. His research is part of a larger project led by professor of computer science Brian Draxler, who is also a faculty member in the Department of Computer Science.

Draxler and his team are studying how to improve machine learning algorithms by using natural language processing techniques. Their goal is to develop a system that can understand natural language and generate natural language responses.

Students

A new approach to identity recognition cameras

Dr.新兴学 student Hsin-Hao Weng received a $10,000 grant from the National Science Foundation’s CyberCorps® Scholarship for Students program. His project aims to improve computer vision algorithms to better recognize human faces in crowded environments.

Weng is a computer science student at the University of Virginia, where he is working with Dr. Deepak Garg, an associate professor in the Computer Science Department. His project focuses on developing a novel approach to identify people from their faces in crowded spaces.

 Assessing risk of premature birth

Tennille Adams, Ph.D., associate professor and director of a program in computer science, has received a $750,000 grant from the National Institutes of Health to study the role of cytokines in the development of premature births. Her team will use a combination of in vitro and in vivo models to study the role of cytokines in the development of premature births.

The grant will allow Adams and her team to study how cytokines interact with fetal tissues to influence the development of premature births. The researchers will also investigate how changes in cytokine levels during pregnancy can contribute to premature births.

A cane that steers, a glove that finds things

Chung He, Ph.D., professor of computer science, is an internationally recognized leader in relay robotics. His research focuses on the development of intelligent robotic systems that can navigate complex environments. He is the principal investigator of a $2.5 million grant from the National Science Foundation to develop a new approach to autonomous robotics.

The grant will allow He and his team to develop a new approach to autonomous robotics that uses machine learning algorithms to enable robots to make decisions in real time. The research will also include the development of a new platform for testing and evaluating autonomous robotic systems.

LORD Best Paper Award at IROS

A paper by the VCU, published in the Proceedings of the International Conference on Intelligent Robots and Systems (IROS), was awarded the LORD Best Paper Award at IROS 2019. The paper, titled “A scalable and efficient framework for indoor robotics,” was co-authored by VCU faculty members and student researchers.

The paper proposes a new framework for indoor robotics that can efficiently navigate complex environments. The framework uses a combination of machine learning and computer vision algorithms to enable robots to make decisions in real time. The research has the potential to significantly improve the performance of indoor robotic systems.