

WASHKEWICZ COLLEGE OF ENGINEERING

# Cybersecurity and Cloud Computing Research

Cleveland State University (CSU) offers a proven track record of expertise in cybersecurity and data science in partnership with the Center for Cybersecurity and Privacy Protection. CSU researchers collaborate with government and private industry to develop and deliver innovative engineering solutions in network, information and hardware-oriented security; blockchain, and data science.

## GRADUATE CERTIFICATE ON CYBERSECURITY TECHNOLOGY

This certificate program is designed for those who are trying to expand the knowledge and skills in cybersecurity and offers a rigorous curriculum that not only covers the cybersecurity fundamentals, threats and approaches, but also provides the practical security skills from legal and business perspectives. The program requires 18 credit hours of courses: four required courses and two electives.



### Required Courses:

CIS 554 Computer Networks  
CIS 575 Introduction to Computer Security  
CIS 673 Fundamentals of Cybersecurity  
LAW 765 Privacy Law and Management

### Elective Courses (select 2):

CIS 579 Hardware Security  
CIS 572 Blockchain and Cryptocurrency Programming  
CIS 571 Web Security (to be added in future)  
CIS 574 Digital Forensics (to be added in future)  
CIS 573 Cybersecurity Law and Technology (to be added in future)  
CIS 675 Information Security  
EEC 688 Secure and Dependable Computing  
IST 636 Managing Network/Security Risk



**CLEVELAND STATE  
UNIVERSITY**

In addition, students enrolled in the Ph.D., MCS and MSSE degree program (Master of Computer Science and Master of Science in Software Engineering) are offered the following advanced courses (600-level or above) that are relevant to this group's research. It is strongly recommended that MCS/MSSE students take the thesis option, which requires research under the guidance of a faculty member, culminating in the writing of a thesis.

CIS 600 Advanced Computer Architecture

CIS 606 Analysis of Algorithms

CIS 611 Relational Database Systems

CIS 612 Advanced Topics in Database Systems

CIS 620 Advanced Operating Systems

CIS 632 Mobile Computing

CIS 634 Software Engineering

CIS 635 Software Engineering Metric/Economy/  
Management

CIS 636 Software Quality Assurance

CIS 660 Data Mining

CIS 666 Artificial Intelligence

CIS 675 Information Security

CIS 693 Blockchain and Cryptocurrency

CIS 694 Computer Network II

CIS 694 Anonymous Communication

CIS 694 Android Sensor Programming

EEC 684 Parallel Processing

EEC 688 Secure & Dependable Computing

EEC 693 Computer Vision

EEC 693 Hardware-Oriented Security and Trust

## RESEARCH CAPABILITIES

We create, design and develop innovative cybersecurity and data science solutions:

- Network security and privacy-preserving systems
- Fault- and intrusion-tolerance techniques for the next generation secure and dependable computer systems
- Hardware-oriented security including side channel attacks and fault injection attacks along with Aerosol Jet 200 electronics printing
- Big data processing, blockchain and cryptocurrency
- Cyber-physical security in smart grid
- Security in industrial IoT, such as Rockwell PLC work stations
- Baxter (Rethink Robotics) and Beam Telepresence Robots

## CURRENT PARTNERS AND SUPPORTERS

The Cybersecurity and Cloud Computing Research has numerous partners and supporters, including:

- Center for Cybersecurity and Privacy Protection
- CSU-CWRU IoT Collaborative
- Department of Energy
- Future of Privacy Forum
- GE Lighting, a Savant Company
- National Science Foundation (NSF)
- Ohio Cyber Range Institute (OCRI)
- And many more

## REQUEST MORE INFO

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