EASTERN MICHIGAN UNIVERSITY

COLLEGE OF ENGINEERING & TECHNOLOGY

2021 NSF Research Experiences for Undergraduates (REU) Cyber and Physical Systems Security Framework in a Modern Connected Smart Cities Environment: Hardware, Software, and Communication Approaches JUNE 1 —AUG. 10, 2020

This Summer Research Experiences for Undergraduates (REU) site, funded by NSF Division of Computer and Network Systems, focuses on cybersecurity challenges related to future cyber and physical systems security (CPSS) in a modern connected smart and safe cities environment including hardware and embedded system security, self-driving cars security, internet of things (IoT), machine/deep learning, and communication security.

Project Objectives

- ➢ Opportunities to conduct CPSS research and gain valuable experience in topics of national interest.
- ➢ Allow interns to self-assess their interest in cybersecurity and graduate studies.
- ➢ Learn advanced subjects in CPSS; hardware, software, IoT, communications, and machine/deep learning security.

Topic Areas

- ➢ Hardware based Security
- ➢ Securing CPSS using IoT sensors and internet Technology
- ➢ Secure Communication Schemes for Smart Autonomies Vehicles
- ➢ Machine/Deep Learning Architecture's Deployment to Edge Computing in CPSS
- ➢ Anomaly Malware Detection using Protect CPSS Networks

Eligibility

- ➢ U.S. citizen or permanent resident
- ➢ Electrical engineering, computer/software engineering, computer science or any other related disciplines with a 3.0 or higher GPA
- ➢ Sophomore, junior or senior
- ➢ Must graduate after September 2020

Application Process
- ➢ Transcripts
- ➢ Application form
- ➢ Two recommendation letters
- ➢ Personal statement
- ➢ Resume
- ➢ See website for more details

All REU interns living on campus who are under 22 years of age must show proof of adequate immunization against

Meningococcal Disease (Meningitis) on or after 16th birthday.

Application Deadline
Screening will begin on March 1, 2020

Applications Available Online

https://www.emich.edu/cet/reu/reu.php
All qualified applicants are encouraged to apply, including minorities, women, veterans and individuals with disabilities.

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Activities

- o Hardware security-related research and short courses
- o Autonomies Vehicles on Deployment and security
- o Preparation of research papers and posters
- o Hands-on training with real equipment
- o GRE and NSF GRFP preparation

Award Information
- ➢ $6,000 stipend for 10 weeks
- ➢ On-campus housing included
- ➢ Food allowance
- ➢ Round-trip travel expenses up to $600
- ➢ The total is approximately $9,000

Announcement of Awards

April 1, 2020