2022 NSF Research Experiences for Undergraduates (REU)
Secure and Privacy-Preserving Cyber-Physical Systems
Software and Hardware Approaches May 23 – July 29, 2022

This Summer Research Experiences for Undergraduates (REU) site, funded by NSF Division of Computer and Network Systems, focuses on cybersecurity challenges in future cyber-physical systems (CPS) including smart and safe cities, self-driving cars, industrial internet of things (IIoT).

Project Objectives
• Opportunities to conduct cybersecurity-related 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 such as blockchain for security CPS, hardware and software attacks on IIoT, security in deep learning.

See this site for details https://www.cae.tntech.edu/~mmahmoud/REU/REU.htm

Topic Areas
• Securing CPSs using Revolutionary Blockchain Technology
• Secure Communication Schemes for Smart Power Grid
• Hardware Intrinsic Security Threats in IIoTs
• Security Vulnerabilities in Deep Learning Architecture’s Deployment to edge devices in CPSs
• Anomaly Detection using Graph Streams to Protect Cyber Networks
• Formal Security Analysis for IIoT Systems
• Secure Industrial Control Systems (ICSs)

Activities
• Cybersecurity-related research and short courses
• Short course on Deep Learning Deployment in Hardware
• Preparation of research papers and posters
• Hands-on training with real equipment
• GRE and NSF GRFP preparation

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 2022

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 Feb. 15, 2022

Applications Available Online
https://www.tntech.edu/engineering/research/cmr/reu
All qualified applicants are encouraged to apply, including minorities, women, veterans and individuals with disabilities.

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
March 1, 2022

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