

EAGER: SaTC-EDU: Cybersecurity Education in the Age of Artificial Intelligence: A Novel Proactive and Collaborative Learning Paradigm



Challenge:

- There is an education and training gap to foster the qualified cyber-workforce that understands the usefulness, limitations, and best practices of artificial intelligence (AI) technologies, specially machine learning (ML), in cybersecurity domain.
- This gap will throttle aspirations in the advance of AI and intensify the shortage problem in cybersecurity workforce.

Solution:

- This project aims to design and implement a virtual, proactive, and collaborative learning paradigm that can engage learners with diverse background and enable effective retention and transfer of the multidisciplinary AI/ML-cybersecurity knowledge.
- This transformative learning paradigm will inspire a wide range of learners to proactively and collaboratively formulate new AI-specific threats in cybersecurity domain and develop innovative trustworthy and robust AI/ML solutions.

Scientific Impact:

- The success of this project will help the general public understand the security implications of AI.
 - This project also has the ability to transform education at the intersection of cybersecurity and AI/ML; shed light on explainable AI in cybersecurity; and grow a cybersecurity workforce that possesses AI competencies.

Broader Impact and Broader Participation:

- The proposed paradigm will benefit a larger range of learners, especially minority and underrepresented students.
- We will disseminate the research results via: (1) hosting workshops with hackathon activities; (2) participating AI and cybersecurity related conferences; (3) publishing articles in peer-reviewed journals; (4) exchanging experiences and results with collaborating institutions and organizations; and (5) designing outreach activities for K-12 students.

