Queen's Centre for Security & Privacy

Distinguished Speaker Series

Dr. Phone Lin

An Intelligent Edge-Based Anomaly Detection Platform for Car Driving

Monday, April 20, 2026, 10:00-11:00 AM

Biosciences Complex – Room 2109

Abstract

Detecting abnormal driving behavior is crucial for preventing traffic accidents, as they are responsible for a significant majority of incidents. However, existing methods for detection often come with high costs or execution restrictions. In this paper, we introduce EADD, an Edge-based Anomaly Detection platform for Driving behavior. EADD overcomes these limitations by detecting abnormal driving behavior without the need for additional sensors or restrictions. Additionally, EADD boasts low computational requirements and enables real-time detection on mobile devices like the Raspberry Pi 3 Model B.

Biography

Prof. Phone Lin is an internationally recognized expert in mobile communications networking, with deep expertise at the intersection of artificial intelligence, edge computing, and semiconductor-enabled systems for IoT and vehicular applications. The research at his Lab focuses on data-driven anomaly detection and prediction, Internet of Cars (IoC)/V2X communications, federated learning on resource-constrained edge devices, and AIoT service platforms. Recent research contributions of his group include Kubernetes-powered personalized federated learning platforms for Internet of Medical Things (IoMT), intelligent edge-based anomaly detection systems for car driving (EADD platform), defenses against poisoning attacks in federated learning, and AI-driven platforms. He has received numerous prestigious honors for his contributions to research, teaching, and innovation, including IEEE Fellow (2017), Fellowships from Sigma Xi (2024) and AAIA (2023), and major national awards such as Taiwan's NSTC Outstanding Research Award (2026), MOST Outstanding Research Award (2016), and the Y. Z. Hsu Technology Invention Award (2024). His distinctions also include the K. T. Li Breakthrough Award (2018), Ten Outstanding Young Persons of Taiwan Award (2009), and recognition as Top Associate Editor of IEEE Transactions on Vehicular Technology (2008–2009). Prof. Lin has actively engaged in international research collaborations across the United States, Japan, and Canada, and has authored numerous peer-reviewed journal and conference papers. He has also played key leadership roles in major IEEE conferences, frequently serving as a speaker, distinguished lecturer, and Technical Program Committee Chair or Co-Chair for flagship venues such as IEEE GLOBECOM, ICC, and IWCMC.