

Computer Science Seminar Series

National Capital Region

Automotive Intrusion Detection Systems

Speaker: Dr. Gedare Bloom

Howard University

Friday, October 27, 2017

1:00PM- 2:00PM, NVC T3

Abstract

The security of every vehicle on the road is necessary to ensure the safety of every person on or near roadways, whether a motorist, bicyclist, or pedestrian. Features such as infotainment, telematics, and driver assistance greatly increase the complexity of vehicles: top-of-the-line cars contain over 200 computers and 100 million lines of software code. With rising complexity comes rising costs to ensure safety and security. This talk discusses methods to improve vehicular security by detecting remotely launched cyber attacks against a moving automobile, and identifies challenges inherent in responding to those attacks in a manner that ensures the safety of humans in close proximity to the vehicle. The primary method of protection discussed is a distributed in-vehicle network intrusion detection system (IDS).

Biography



Gedare Bloom is an assistant professor in the Department of Electrical Engineering and Computer Science at Howard University where he directs the Embedded Systems Security Lab. His research expertise is computer system security with particular focus on real-time embedded systems used in critical infrastructure that have measurable lifetimes in decades. The techniques he applies to solve problems along the hardware-software interface range from computer architecture, computer security, cryptography, operating systems, and real-time analysis. He is a maintainer for the RTEMS open-source hard real-time operating system, which is used in robotics, unmanned vehicles, satellites, space probes, automotive, defense, building automation, medical devices, industrial controllers, and more. He received the Ph.D. in Computer Science from The George Washington University.