Iowa State University

CYBERSECURITY
SEMINAR SERIES:

Dr. George Amariucai

Infrastructure-Less Environments: How to Establish Security by Leveraging Wireless Interactions, Time and Community

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Monday, Oct. 31, 2016

11 a.m.- noon, Coover Hall 2222

Join Online: https://iastate.zoom.us/j/998232544

As wireless devices become more ubiquitous, resource becomes increasingly scarce and mobile devices will have to adaptively and opportunistically switch frequency bands, and rely on peer devices for relaying information. In this highly-dynamic environment, standard security paradigm, based on authentication servers, public-key certification authorities and key hierarchies, faces new challenges. This talk focuses on alternative ways of establishing security in the absence of a standard security infrastructure. The talk first discusses new scheme for infrastructure-less key establishment in ad-hoc networks and shows how routing metadata can be used to establish secret keys between communication parties in a mesh network using the Dynamic Source Routing protocol. Second, it defines, explains and presents a new time-based key establishment paradigm. Lastly, it discusses the role that community can play in the security of access and communication.

George T. Amariucai received a PhD in Electrical and Computer Engineering from Louisiana State University in 2009. He is an adjunct associate professor in the Department of Electrical and Computer Engineering at Iowa State University. His research, sponsored by three grants from NSF and one grant from NSA, is focused on cybersecurity and its intersections with information theory, cryptography, wireless communication, machine learning, human-computer interaction, and verifiable computation. He is also passionate about engineering education, and is an active supporter of flipped classroom paradigm, and received the Warren B. Boast undergraduate teaching award and Greek Community's Outstanding Faculty Recognition.

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