UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II

DOTTORATO DI RICERCA / PHD PROGRAM IN
INFORMATION TECHNOLOGY AND ELECTRICAL ENGINEERING

Seminar announcement

Tuesday 13 December 2022, Time: 16:00 - 18:00
Online on MS TEAMS (Code: n35lrr6):

Link:
https://teams.microsoft.com/l/team/19%3aa6c2Q1p8Xe_WQGcZFuQMMddcSq9AIC4nqQkLQmBafXM1%40thread.t
acv2/conversations?groupId=a4c7fdd7-f2d3-46ae-970f-358cea0f5d0f&tenantId=2fcfe26a-bb62-46b0-b1e3-28f9da0c45fd

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From Cyber Situational Awareness to Adaptive Cyber Defense: Leveling the Cyber Playing Field

Abstract: In the cybersecurity landscape, the asymmetric relationship between defenders and attackers favors the attackers: while defenders must protect a system against all possible ways of breaching it, attackers only need to exploit one vulnerable entry point to succeed. The overarching goal of my research is to reverse such intrinsic asymmetry in favor of the defender. To achieve this goal, two objectives must be pursued concurrently: increasing the defender's understanding of multiple facets of the cyber landscape – referred to as Cyber Situational Awareness (CSA) – and creating uncertainty for the attacker through Moving Target Defense (MTD) or Adaptive Cyber Defense (ACD) techniques. In this talk, I will provide a brief overview of my contributions in these areas and will then discuss in detail one of the specific problems I investigated as part of this effort, i.e., the problem of disrupting stealthy botnets by optimally deploying detection capabilities across the target network. Finally, I will present some results of this research and will discuss future research directions.

Lecturer short bio: *He is an Associate Professor at George Mason University, where he serves as the Associate Director of the Center for Secure Information Systems (CSIS) and the Associate Chair for Research of the Department of Information Sciences and Technology. He received his Ph.D. degree in Computer Science and Engineering in 2005 from the University of Naples Federico II, Italy, and joined George Mason University in 2011 after serving as a postdoctoral researcher at the University of Maryland. His research interests are in the area of Information and Network Security, with particular emphasis on Modeling and Detection of Cyber Attacks, Cyber Situational Awareness, Network Hardening, Moving Target Defense, and Adaptive Cyber Defense. He holds a patent and has co-authored a book, 19 book chapters and over 70 papers in peer-reviewed journals and conference proceedings. Dr. Albanese has participated in sponsored research projects totaling $11.8M, with a personal share of over $3M.*

For information: Prof. Giancarlo Sperlì (DIETI, UNINA) – giancarlo.sperli@unina.it *(organizer)*