UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II

PHD PROGRAM IN INFORMATION TECHNOLOGY AND ELECTRICAL ENGINEERING

Seminar announcement

Tuesday 04 March 2025, Time: 15:00 - 16:00

Aula Seminari, Floor 1, Building 3/A, DIETI - Via Claudio, 21 - NAPOLI

Dr. Simone Guarino, Assistant Professor

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Dynamic Risk Assessment in Industrial Applications: Leveraging Bayesian Inference for Enhanced Decision-Making

Abstract: Bayesian inference involves estimating the likelihood of events happening, making it a good approach when assessing risks in complex and uncertain environments. This is especially relevant in industrial applications, where system operations can be disrupted by physical anomalies or malfunctions as well as by malicious cyber activities, wherein attackers may exploit both known and previously undiscovered vulnerabilities to infiltrate the process network. With the ever-evolving nature of cyber threats and the increasing frequency of extreme weather events driven by climate change, the use of Bayesian inference constitutes an essential tool as it enables the continuous updating of risk estimates by incorporating new information and prior knowledge. Bayesian inference not only provides updated probabilistic estimates but also creates opportunities for a deeper understanding of risks, ultimately improving the decision-making process. This seminar will focus on key applications of Bayesian inference in risk assessment, with a particular emphasis on the use of Bayesian networks in industrial scenarios.

Lecturer short bio: *Simone Guarino is an assistant professor at the University Campus Bio-Medico of Rome. He received the Ph.D. degree in cyber-security for operational technologies and the M.Sc. degree (cum laude) in biomedical engineering from the University Campus Bio-Medico of Rome, in 2024 and 2020, respectively. His research interests focus on developing AI-driven solutions for cyber-physical risk assessment, anomaly detection, and incident response in industrial control systems.*

For information: Dr. Francesco Vitale (DIETI, UniNA) – francesco.vitale@unina.it *(organizer)*

Attendance at the seminar is in-person. Participants are requested to send an e-mail to the organizer by 28 February 2025. In the email, students abroad need to motivate the request for remote attendance, indicating the place and period they are spending in a foreign institution. Once authorized, the students can attend the seminar remotely at the following link:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_N2FlMzQ1NjItY2VhNi00ODMzLWE5YjktM2U3ODVkODIzN2U0%40thread.v2/0?context=%7b%22Tid%22%3a%222fcfe26a-bb62-46b0-b1e3-28f9da0c45fd%22%2c%22Oid%22%3a%2256429112-25f3-4940-a091-b0dd7dd7b528%22%7d