# Domenico Uomo

Computer Engineer

## Social Network

Linkedin Personal Page

Facebook Personal Page

## Languages

Italian

English

## Hard Skills

- Data Science
- Computer Science and Programming
- RAMS Engineering
- Cybersecurity

## Soft Skills

- Teamwork
- Attitude to Learn
- Problem Solving
- Driving License B

## Working Experience

03/2022 – current
**PhD student** — Scuola Superiore Sant'Anna di Pisa
PhD Eu-Rail. Research on ERTMS

03/2022 – 10/2024
**Researcher Fellow** — Scuola Superiore Sant'Anna di Pisa

- **Research topic: Failure prediction in Software Defined Flying Ad-hoc networks**: Deployment of an SDN ad hoc network with an AI system to predict failures.
  - Programming with Python3.8
  - Artificial Intelligence/Machine Learning
  - Mininet-WiFi for simulation, P4 switch (BMv2)
  - Capacity and scalability test: ANOVA for factor importance and significance, JMeter, Spirent Traffic Generator, MatLab
- **Dependability Analysis of a Railways signalling network**: Determination of reliability function and availability for a safety-critical network, testing of the topology and proposal of alternative architectures.
  - Reliability Block Diagram, MatLab
  - Study of network protocol: MRP, VRRP, OSPF, RSTP, Link Aggregation Protocol
  - Testing of Hirschmann MAR/MACH and CISCO device, Spirent traffic generator

10/2020 –02/2022
**Technology consultant - Data Engineer/Analyst** — DXC - Technology

- **NSIS - NSG:** Big data analysis and engineering.
  - SQL Database: Vertica, PostgreSQL, Oracle
  - Data Visualization: Tableau, QLik Sense
- **Contact Tracing:**
  - Neo4J

## Other Experience

10/2023 — Presenter at 6G-PDN workshop — ACM mobihoc - Washington, DC

02/2023 — Millimeter Wave Plug-Tests event — ETSI - Nice

## Publications

2023
**Failure Prediction in Software Defined Flying Ad-hoc Network**
DOI: 10.1145/3565287.3617611
Authors: Uomo Domenico, Sgambelluri Andrea, Castoldi Piero, De Paoli Emiliano, Paolucci Francesco, Cugini Filippo

2024
**Edge Orchestration Framework for AI-assisted Link Failure Forecasting and Recovery**
DOI: 10.1109/ICTON62926.2024.10647881
Authors: Castoldi, P., Uomo, D., Sgambelluri, A., Cugini, F., Paolucci, F.

2024
**P4 FANET In-band Telemetry (FINT) for AI-assisted wireless link failure forecasting and recovery**
DOI: 10.1016/j.comnet.2024.110599
Ismail, L., Uomo, D., Sgambelluri, A., Alhamed, F., Paolucci, F

## Education

## Degree

2017 – 2020 **Master Degree in Computer Science and Engineering** University of the Studies Federico II
Thesis: on Real-time Virtualization for railways signalling as a service. Score: 110/110 with honours

2013 – 2017 **Bachelor Degree in Computer Engineering** University of the Studies Federico II
Thesis: Real-Time data-streaming with STORM: features and uses cases

## Academic Internship

2019 – 2020 **Master Thesis**

- **On Real-Time Virtualization for railways signalling as a service**: feasibility study of a virtualized implementation of safety-critical system using XEN as hypervisor
    - Design of Experiment, ANOVA, parametric and non-parametric test to determine statistical importance and significance of several parameters.
    - OS and Hypervisors: preempt-RT Linux, XEN, QEMU, Mils

## Summer School

09/2023 AIoTwin - Smartedge Summer school University of Zagreb - Dubrovnik

09/2023 Restart Tech Camp on 5g and open RAN La Sapienza - Rome