

Luca Gemolotto

Education

2021 – 2024

Master's Degree in Computer Science

Università degli Studi di Udine

- Concurrent and Distributed Systems and Languages track
- Thesis: A General Purpose Runtime for Choreographic Programming Languages for Robot Management
- Brief abstract: AbU-ROS is a general-purpose runtime system for choreographic programming of robot swarms, integrating AbU-DSL with the Robot Operating System (ROS). AbU-DSL combines Event-Condition-Action rules and attribute-based communication to enable scalable, modular, and extensible swarm management. This approach bridges higher-level languages and runtime for efficient swarm orchestration.
- Final grade: 110 out of 110

2018 – 2021

Bachelor's Degree in Computer Science

Università degli Studi di Udine

- Research thesis: Bigraphical Modelling of Autonomous Vehicles

Relevant Development Work

Implementation of a TSP solution via distributed Ant Colony Optimization

- Developed a solution for a distributed TSP system by implementing an asynchronous and decentralised variant of the Ant Colony Optimization algorithm, as part of the Distributed Systems course during my Master's Degree.

Implementation of a parallelised variant of the Large Neighbourhood Search algorithm

- Implemented a variant of the LNS algorithm with Nvidia's CUDA as part of the Parallel Architectures course during my Master's Degree .

Participation in Research Groups

March 2024

Internship at Fondazione Bruno Kessler

Fondazione Bruno Kessler Digital Center, Formal Methods Unit

- Worked on the NuRV runtime verification tool and developed a booleanization wrapper for infinite precision variables, at the Formal Methods research unit of the FBK Digital Center

June 2024 – now

Models and Applications of Distributed Systems Laboratory

University of Udine

- Worked with the MADS team on a language for distributed IoT programming.

Participation in Research Projects

June 2024 – now

ARGOS (2023-2025) PNRM project of the Italian Ministry of Defence

University of Udine

- Worked on the research project "An Integrated Platform For Autonomous Agents For Maritime Situational Awareness" (ARGOS) funded by the Direzione degli Armamenti Navali (NAVARM) of the Italian Ministry of Defense as part of my Master's thesis.

Extracurricular Activities

August 2023

SySS23

International Centre for Mechanical Sciences, Udine

- Attended the Third edition of the UniVr/UniUd Summer School on Formal Methods for Cyber-Physical Systems as a student

September 2022

VTSA22

Max Planck Institut für Informatik, Saarbrücken

- Attended the EuroProofNet Summer School on Verification Technology, Systems & Applications 2022 as a student

February 2021 – July 2021

Cyberchallenge.IT

Università degli Studi di Udine

- Training activity on Cybersecurity by the Cybersecurity National Lab
- Member of the local team on the national competition

February 2021 – July 2021

Cybersecurity competitions

Università degli Studi di Udine

- Took part in various cybersecurity competitions (Capture The Flag) with the MadrHacks team

Skills

Languages

Italian – Native language

English – Advanced Level

- First Certificate in English (FCE), Cambridge English – 184/190 (UK Level 2/EU Level C1)

Programming

Python, C, Java, Haskell, Erlang