

Matteo Franzil

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PROFESSIONAL PROFILE

Skilled young researcher with theoretical and technical experience in network management, monitoring, and security. Highly motivated and resourceful, is capable of working independently with minimal supervision and in a team. Works well under pressure, and excels at time management, problem solving, multitasking, and organization. He is also a proficient communicator and teacher, with a passion for sharing knowledge and learning from others.

RESEARCH INTERESTS AND KNOWLEDGE AREAS

- Network Monitoring and Observability
- Virtualization and Containerization
- Edge and Cloud Infrastructures
- Cloud Orchestration
- Cyber and Network Security
- Software-Defined Networking
- Machine and Deep Learning
- Network Configuration and Automation

EDUCATION

- **PhD in Information Engineering and Computer Science** Nov 2024 — ongoing
University of Trento *Trento (TN)*
 - Research area: Opportunistic Monitoring for Cloud-to-Edge Environments
 - Grant funded by Fondazione Bruno Kessler
- **Master's Degree in Computer Science** Sep 2020 — Oct 2022
University of Trento *Trento (TN)*
 - Areas: Systems and Networks, Cloud Computing, Cyber Security
 - Mark: 110L/110
- **Bachelor's Degree in Computer Science** Sep 2017 — Lug 2020
University of Trento *Trento (TN)*

EXPERIENCE

- **Researcher** Mar 2022 — Nov 2023
Fondazione Bruno Kessler *Trento (TN)*
 - **PhD Student** (Nov 2024 —)
See Education section for details
 - **Researcher** (Nov 2023 — Oct 2024)
 - **Junior Researcher** (Nov 2022 — Oct 2023)
 - **Intern** (Mar 2022 — Jul 2022)
Research internship on efficient real-time telemetry solutions for end-host and edge networks.
- **Teaching Assistant** Oct 2020 — ongoing
University of Trento *Trento (TN)*
 - **Databases (undergraduate)** (Oct 2024 — ongoing)
 - **Programming 1 (undergraduate)**
Laboratory lectures and course management (Sep 2023 — Sep 2024)
Exercise lecturing, hands-on exam preparation and dedicated student support (Oct 2020 — Dec 2021)
 - **Probability (undergraduate)**
Laboratory lectures and course management (Mar 2023 — Feb 2024)
Exercise lecturing, hands-on exam preparation and dedicated student support (Mar 2021 — Jun 2022)

LANGUAGES

- **Italian:** Mother tongue
- **French:** A2
- **English:** Cambridge Level 3 Certificate — C2
- **Spanish:** A2

LATEST WORKS (FULL LIST AVAILABLE IN PORTFOLIO)

- **Exploiting Kubernetes Image Pull for Denying Availability of Clusters** Jan 2024
L. A. Dias Knob, M. Franzil, D. Siracusa
Under review
Keywords: Kubernetes, APIs, Denial-of-Service attacks, containerd
- **Carbon-Aware Spatio-Temporal Workload Shifting in Edge-Cloud Environments: A Review and Novel Algorithm** Aug 2024
N. Asadov, V. Coroamă, M. Franzil, S. Galantino, M. Finkbeiner
Under review
Keywords: Scheduling, energy efficiency, edge computing, cloud computing
- **Work-in-Progress: A Sidecar Proxy for Usable and Performance-Adaptable End-to-End Protection of Communications in Cloud Native Applications** July 2024
S. Berlato, M. Rizzi, M. Franzil, S. Cretti, P. De Matteis, R. Carbone
in 1st Workshop on Operating Systems and Virtualization Security (OSVS 2024)
Keywords: Sidecar proxies, end-to-end encryption, cloud native
- **Real-Time Monitoring of the QUIC Protocol** Oct 2022
Master's Degree Thesis
Keywords: QUIC, programmable data planes, eBPF, XDP, end-host monitoring

LATEST PROJECTS (FULL LIST AVAILABLE IN PORTFOLIO AND GITHUB)

- **FLUIDOS: Flexible, scaLable and secUre decentralIzeD Operating System** May 2023 — ongoing
Task Leader of T6.3, “Cost-effective and energy-aware infrastructure”.
Exploration of machine learning techniques for predicting energy demand of edge computing tasks.
<https://cordis.europa.eu/project/id/101070473>
- **Fast and Scalable Shortest Path Recovery for Multi-Domain Segment Routing Networks** Nov 2022 — Mar 2023
Efficient shortest path recovery algorithms for Segment Routing deployments
Project funded by Cisco Systems Inc.

TECHNICAL SKILLS

Network and system administration

Linux network stack (iptables, eBPF, XDP)
Bash scripting, Ansible, Terraform
Hardware and software deployment and maintenance
LAN design and management

Cloud and Virtualization

Docker, Kubernetes
Azure, Google Cloud Platform, AWS, OpenStack
Proxmox, MaaS, VMWare/ESXi, Hyper-V
Ansible, Terraform, Falco, Prometheus, Grafana

Development

Python: NetworkX, OpenCV, Numpy, TensorFlow
HTML, CSS, JavaScript
Python-, Java-, PHP- and JS-based frameworks

Cyber Security

Metasploit, Nmap, Wireshark, OpenVAS, Nessus
Fortinet/FortiOS, Juniper, Cisco platforms

Other

LaTeX typesetting, Databases, SQL (PostgreSQL, MySQL)
Rust, Lua, Go, R, C, C++

OTHER SKILLS

Multimedia skills

Photography, photo editing, graphics design, video production

Miscellaneous

Event management and organization, computer building, systems management and maintainance

FINAL REMARKS

Acconsento alla pubblicazione del mio CV in ottemperanza alle disposizioni di legge dettate in materia di trasparenza (D.Lgs. 33/2013).

Trento, 29 novembre 2024