Filippo Scaramuzza

Parma / Milano, Italy +39 329 705 7977 filippo.scaramuzza1999@gmail.com
linkedin.com/in/filippo-scaramuzza filipposcaramuzza.dev github.com/FilippoScaramuzza

Working Experience

PhD Candidate — **JADS, Tilburg University, 's-Hertogenbosch, Netherlands** — **01 Oct 2024 — Present**

- Working as a PhD Candidate in the Safeguard Lab at the Jheronimus Academy of Data Science, a joint institute between the Eindhoven University of Technology and the Tilburg University.
- My research focuses on Trustworty ML-Enabled Systems, more specifically on the auditing of trustworthy properties in the context of Machine Learning Operations (MLOps).
- My projects are in collaboration with Deloitte NL.

Research Engineer Intern — **ALTEN Labs, Valbonne, France** — **18 Sept 2023 — 15 Mar 2024**

- Conducted a systematic **review of existing literature** on Personal Information Management Systems.
- **Designed and implemented** an architecture of an interoperable and GDPR-compliant software agent for both Personally Identifiable and Non-Personally Identifiable Information management.
- Designed an Interoperability Evaluation Framework for Personal Data Stores and Self-Sovereign Identity Solutions.
- Wrote my **Master's thesis** entitled: "Universal Personal Privacy Agent: Toward Interoperability Between Self-Sovereign Identity and Personal Data Stores".
- Held two **scientific seminars** on these topics, strengthening communication skills with coworkers and stakeholders.

Research Intern — **University of Parma, Parma, Italy** — **01 Apr 2021 — 31 Aug 2021**

- Conducted a systematic **review of existing literature** (both white and grey) on Fog Systems and N-Tier architectures with real examples from local 4.0 Agriculture Industries.
- **Designed and implemented simulations** to test the effectiveness of different service placement strategies with a Python event-based discrete time simulator.
- Wrote my **Bachelor's thesis** entitled: "Simulation of N-Tier Fog Systems with Dynamic Service Placement".

Software Developer Intern — **MaxMara, Reggio nell'Emilia, Italy** — **01 Jun 2017 – 31 July 2017**

- Built program parts in Python (Django), SQL and web technologies in general to **extend** the functionalities of the large **Web Application** used by the company employees.
- Contributed to the successful **release to production** of an application used by the Quality Assurance Team.
- Developed skills in coding best practices and testing methodologies while implementing several **change requests**.

Software Developer Intern — **MaxMara, Reggio nell'Emilia, Italy** — **01 Jun 2016 – 31 July 2016**

- Built program parts in Python (Django), SQL and web technologies in general to **extend** the functionalities of the large **Web Application** used by the company employees.
- Contributed to the successful **release to production** of an application used by the Quality Assurance Team.
- Developed skills in coding best practices and testing methodologies while implementing several **change requests**.

Education

's-Hertogenbosch, NL — **Jheronimus Academy of Data Science (TU/e, TiU)** — **01 Oct 2024 - Ongoing**

- PhD Candidate in Trustworthy Machine Learning-Enabled Systems.

Milan, Italy — **Polytechnic University of Milan** — **01 Oct 2021 — 17 Sep 2023**

- M.S.E. in Computer Science and Engineering, with track in Software Engineering for Complex Systems.

Parma, Italy — **University of Parma** — **17 Sep 2018 — 30 Sep 2021**

- B.S.E. in Computer, Electronics and Telecommunication Engineering, with track in Computer Science.

Pubblications

Published and Accepted Papers

- Quattrocchi, Giovanni, Filippo Scaramuzza, and Damian A. Tamburri. *"The Blockchain Trilemma: An Evaluation Framework."* **IEEE Software (2024)**.
- Filippo Scaramuzza, Damian A. Tamburri, Willem-Jan van den Heuvel. *"Accountability of Robust and Reliable AI-Enabled Systems: A Preliminary Study and Roadmap"* **ICSOC 2024 Workshops** (to be published on July 1st)

Submitted Papers

- Filippo Scaramuzza, Giovanni Quattrocchi, Damian A. Tamburri. *"Engineering Trustworthy Machine-Learning Operations with Zero-Knowledge Proofs"* **IEEE Transactions on Software Engineering**.
- Indika Kumara, Marco Tonnarelli, Filippo Scaramuzza, Stefano Fossati, Damian A. Tamburri. *"Large Language Models for NextGen Infrastructure-as-Code: Opportunities and Challenges"* **DSD/SEAA 2025**

Working Papers

- Marco Tonnarelli, Filippo Scaramuzza, Stefan Driessen, Indika Kumara, Damian A. Tamburri. *Data Domains Adoption: Motivations, Challenges and Lessons Learned from Industry* to be submitted to **IEEE Transactions on Engineering Management**
- Filippo Scaramuzza, Renato Cordeiro Ferreira, Indika Kumara, Giovanni Quattrocchi, Damian A. Tamburri, Willem-Jan van den Heuvel. *Auditable By Design Machine-Learning Operations with Zero-Knowledge Proofs* to be submitted to **ICSE 2026**.

Posters

- Indika Kumara, Stefano Fossati, Filippo Scaramuzza, Marco Tonnarelli, Damian A. Tamburri. *Leveraging Large Language Models for the Next Generation of Infrastructure as Code* **SummerSOC 2025**
- George Manias, Filippo Scaramuzza, Stefano Fossati, Nemania Borivts, Willem-Jan van den Heuvel. *A Unified Microservices-Oriented Cloud Gateway* **SummerSOC 2025**

Teaching Activities

Tutoring

- Prepared and held laboratory sessions for the course *"Introduction to Machine Learning"* course in the pre-master degree *Data Science in Business and Entrepreneurship*.

Technical Experience

Projects

- **Distributed Fault Tolerant Dataflow Platform with MPI** (2023), Python, MPI.
- **Random Maze Generator using Disjoint Sets Data-Structure** (2022), C++.
- **Management WebApp Using the Java Persistence API (JPA)** (2022), Java EE, JPA, MySQL.
- **Online Chess Platform with Multi-Player and AI** (2021), Python, ReactJS.
- **Decentralized cloud storage using Ethereum blockchain and IPFS** (2021), ReactJS, Ganache, IPFS.

Languages and Technologies

- **Lanugages**: C/C++; Java; Python; C#/.NET; SQL; Javascript; Assembly.
- **Relevant Technologies**: Algorithms and Data Structures; LAMP/MERN Stacks; SQL DBMSs; NoSQL Databases; Hadoop/Spark; MPI; Middlewares for Distributed/Parallel Systems; Unix; Git; LaTeX.

Other Information

- **ETS - TOEIC** (Test of English for International Communication).
- **Blood Donor** at AVIS (Association of Italian Blood Volunteers).
- **Interests**: piano, role-play games, socializing with old and new friends, computer games and technology in general.