Luca Volonterio

IT & Cybersecurity Professional

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Professional Profile

Computer Science graduate with a Master's in Cybersecurity (CYBERUS Erasmus Mundus programme, top 5% of applicants) and hands-on experience across software engineering, cybersecurity, and ML-based systems. Currently a Scientific Trainee at the European Commission's Joint Research Centre in Karlsruhe, contributing to IT system migration and secure data handling in a regulated institutional environment.

Experienced from secure C/C++ and Java backend development to Python-based data pipelines and graph neural network models for real-time threat detection. Comfortable across technical domains and international teams, with a track record of ownership in both research and production contexts.

Education

Université Libre de Bruxelles (ULB) — Brussels, Belgium
Master CYBERUS in Cybersecurity — Sept 2025 – Sept 2026

- **Advanced Technical Courses :** Mobile and Wireless Network Security, Embedded Systems Security, Digital Forensics and Reverse Engineering, Cryptanalysis, Machine Learning Security
- **Academic Excellence :** Awarded full Erasmus Mundus scholarship - ranking in the top 5% of international applicants
- **Contact Person :** Jan Tobias Mühlberg (professor for Embedded Systems Security)

Université Bretagne Sud (UBS) — Brittany, France
Master CYBERUS in Cybersecurity — Sept 2024 – Jul 2025

- **Cybersecurity Fundamental Subjects :** Cryptology, Penetration Testing, Secure Programming, Security by Design, Risk Analysis and Management, Network Security, Operating Systems Security
- **Contact Person :** Guy Gogniat (Associate Professor **&** Program Coordinator)

Tallin University of Technology (TalTech) — Tallin, Estonia
The Cyberlandscape: Cyberthreats and Cyberactors (Winter School) — Jan 2025

- **Curriculum Highlights:** Explored critical domains including Cyber Threat Intelligence, Incident Handling, and Cyber-Physical Systems security. Visited the NATO Cooperative Cyber Defence Centre of Excellence (CCDCOE) and the TalTech Estonian Maritime Academy.
- **Legal & Regulatory Frameworks:** Analyzed the intersection of International Law and cybersecurity, including emerging standards like the EU's Cyber Resilience Act and industry frameworks such as NIST.

Università degli Studi dell'Insubria — Lombardy, Italy
Bachelor of Science in Computer Science — Sept 2021 – Jul 2024

- **Final Grade :** 110/110 cum laude (Highest Honors)
- **Selected Topics :** Computer Architecture, Operating Systems, Networks, Computational Theory, Data Structures and Algorithms, Discrete Mathematics
- **Contact Person :** Mauro Ferrari (Head of Department of Theoretical and Applied Sciences)

Ostbayerische Technische Hochschule Amberg-Weiden — Bavaria, Germany
Exchange Year in Digital Technology Management — Sept 2022 – Sept 2023

- **Selected Topics :** Secure Network Management, Advanced C++, Machine Learning, Cloud Technologies
- **Practical Experience :** Hands-on experience with SPLUNK SIEM and the Scapy framework for network packet analysis

Professional Experience

Scientific Trainee — Karlsruhe, Germany
European Commission — Mar 2026 – Aug 2026

- Part of the JRC.G.I.3 unit – Safety of the Nuclear Fuel Cycle
- Contributing to the **migration** of an internal system, coordinating with various stakeholders.
- Drawing up **requirements** for an internal cross unit system that handles sensitive data and developing

Proof of Concept solution.

- Gaining direct familiarity with JRC Karlsruhe's **institutional environment** and compliance requirements. Applying IT-security principles in a **regulated**, high-stakes environment.

Research Intern Remote
Babeș-Bolyai University Apr 2025 – Jun 2025

- Designed and implemented a high-performance log-parsing and **graph construction pipeline in C++**, transforming router traffic into rich graph representations suitable for security analysis.
- Developed and evaluated **intrusion detection models in Python** using PyTorch Geometric, performing inference on the constructed graphs to detect malicious behaviour in real time.

Intern Milan, Italy
ALTEN Feb 2024 – Jun 2024

- Developed an AI-based bot capable of analyzing and resolving service tickets, bachelor thesis titled **AI-Driven Bot Implementation for Process Automation: Towards Autonomous Control**
- Implemented Robotic Process Automation for IT Infrastructure Management, following best practices for reliability, logging, and safe handling of operational data.

Full Stack Developer Milan, Italy
WebRatio Jun 2021 – Sep 2022

- Developed and maintained Java back-end services and SQL schemas for enterprise applications, paying attention to input validation, access control, and secure data handling.
- Participated in requirements and solution engineering, learned about software engineering and cloud solutions
- Contact : Massimo La Rosa (Service Director)

Tools & Technologies

- **Software & Security:** Secure programming (C, C++, Java, Python), network analysis (Scapy, SPLUNK SIEM, other network analysis tools), SQL and database security
- **Machine Learning & Data:** Python, PyTorch, TensorFlow, experience with Graph Neural Networks, data preprocessing and evaluation pipelines
- **Systems & Dev Tools:** Git, Docker, Linux environments, AWS, Selenium WebDriver, CI/CD and modern software engineering practices

Technical Interests

- Cybersecurity, threat detection, and security monitoring
- Cloud infrastructure, automation, and emerging technologies
- ML-based techniques for real-world security and data analysis
- Software reliability, system performance, and secure architecture

Additional Skills

Professional Skills

- Analytical Thinking and Big Picture Vision
- International Collaboration
- Strong cross-cultural communication skills
- Security Analysis & Thinking like an attacker

Languages

- Fluent in **Italian (C2), English (C1), Spanish (C1)**, and knowledgeable in **German (B1) and French (B2)**

Personal Interests

- Curious and creative individual with a lifelong love for music - classical piano, performing with orchestras, and music production
- Enjoys traveling, swimming, and immersing myself in cybersecurity challenges
- Always keen on learning new things and exploring ways to combine technical skills with creative passions