

# Christian Sassi

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## EDUCATION

**Master's Degree in Computer Science, Cybersecurity - University of Trento** Trento, Italy  
*Expected graduation in October 2025.* Sep. 2023 – Present

**Bachelor's Degree in Computer Engineering - University of Trento** Trento, Italy  
*Graduated with a final grade of 108 out of 110.* Sep. 2020 – Sep. 2023

## EXPERIENCE

**Researcher Intern – Cybersecurity** Mar. 2025 – Present  
*Fondazione Bruno Kessler (FBK)* Trento, Italy

- Adapted the **DAICS** framework into a **distributed federated learning** pipeline for anomaly detection in ICS networks.
- Integrated **adaptive aggregation** and **client selection** from **FLAD** framework, improving training efficiency and robustness.
- Benchmarked the system on the **SWaT dataset**, achieving faster convergence and improved detection accuracy.
- Contributed to model development and experimentation using **TensorFlow**, **NumPy**, and **Pandas**.

**Software Engineer Intern – Embedded Systems** Feb. 2023 – Jun. 2024  
*University of Trento* Trento, Italy

- Validated **SPARK SR1020 UWB IoT devices** through specification-based testing, ensuring system reliability and integration readiness.
- Optimized **C-based firmware** for real-time **UWB communication**, reducing response time by **50%**.
- Developed **Python tools** to analyze audio packet behavior, improving debugging and performance tuning.
- Collaborated in a **10-person multidisciplinary team** to develop secure and efficient **IoT solutions**.

**Freelance Software Developer** Oct. 2022 – Oct. 2023  
*Fiverr* Remote

- Delivered over 60 custom projects in **C/C++**, **Python**, and **Java**, tailored to diverse client requirements.
- Managed full software lifecycle, maintaining a **100% on-time delivery rate**.
- Maintained a perfect **5.0/5.0 client rating** for code quality and communication.
- Built long-term client relationships, demonstrating strong **self-management** and technical execution.

## PROJECTS

**MITRE Embedded Capture The Flag (eCTF) Competition | C, Python**

- Placed **13th out of 116 teams** in a national **firmware security competition** hosted by MITRE.
- Developed secure firmware for Satellite TV using **NaCl**, **Blake2b**, **Argon2id**, and **Monocypher**.
- Performed **reverse engineering** and uncovered **more than 30 vulnerabilities** in competitor firmware through targeted analysis.

**Security Testing Analysis for an E-commerce Platform | Java**

- Performed **static and dynamic analysis** with **SpotBugs** and **OWASP ZAP**.
- Identified **more than 15 issues**, including **SQLi**, **XSS** and **CSRF**, applying structured **vulnerability management**.
- Designed and applied **over 15 targeted fixes** for identified vulnerabilities, improving overall security posture.

## PUBLICATIONS

**Real-time Musical Haptics with Ultra-wideband: A Study on Latency, Reliability, and Perception**  
*L. Turchet, C. Sassi, D. Vecchia, G. Picco* — Published in IEEE Transactions on Haptics on January 6, 2025.

## TECHNICAL SKILLS

**Languages:** Italian, English

**Programming languages:** Python, C/C++, Rust, Java, JavaScript, HTML/CSS, SQL

**Security Skills:** Injection Attacks, Cryptography, Pwn, Reverse Engineering, Web Security

Last updated on July 10, 2025