


# MATTIA BIANCO

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## EDUCATION

### ETH Zurich

*Master's Degree in Cyber Security (Minor in Machine Intelligence)*

Relevant Coursework: Hardware Security, Network Security, Applied Cryptography, Security of Wireless Networks, Machine Perception.

Zurich

Sep 2024 - Present

### Politecnico di Torino

*Bachelor's Degree in Computer Engineering*

GPA: 29.3/30, Final Grade: 110/110 with Honours.

Selected for the INTRAPRENDENTI program, a highly selective honors pathway for top-performing students focused on innovative experimental teaching and project-based learning methodologies.

Turin

Sep 2021 - Jul 2024

## WORK EXPERIENCE

### STORM Reply

*Software Development Engineer Intern*

Turin

Dec 2023 - Apr 2024

- Developed a blockchain network prototype for electric vehicle battery information sharing using AWS Managed Blockchain and Hyperledger Fabric.
- Implemented verifiable credentials architecture for battery lifecycle tracking and regulatory compliance with selective disclosure capabilities.
- Authored first technical article on Medium documenting project's architecture and implementation.

### JEToP - Junior Enterprise Torino Politecnico

*Junior Entrepreneur*

Turin

Apr 2022 - Feb 2024

- Progressed from IT Assistant to Senior IT Consultant, leading full-stack web development projects for external clients using TypeScript, CSS, and REST APIs.
- Developed technical leadership skills by managing project timelines, mentoring junior developers, and consistently delivering scalable web applications on schedule.
- Expanded mobile development expertise through international Flutter workshop in Tunisia, contributing to JEToP's university-industry bridge mission.

## SELECTED PROJECTS

### Rowhammer Exploitation

Conducted research on advanced Rowhammer attacks on modern Linux systems as part of Hardware Security course at ETH. Working in a team, performed DRAM reverse engineering using the DRAMA methodology and developed reliable exploits with the Blacksmith fuzzer to bypass TRR protections. Achieved end-to-end privilege escalation from user to root level (Video).

### Geometric Hashing Optimization

Optimized the geometric hashing algorithm for object recognition as part of Advanced System Lab at ETH. Working in a team, systematically improved computational bottlenecks and memory access patterns through AVX2 vectorization and custom data structures. Achieved 810× speedup in hash table construction and 160× in scene matching for 120-point datasets, enabling real-time performance for robotics applications (GitHub repo, report paper).

### Electric Vehicle Battery Passport

Developed blockchain-based EV battery traceability using AWS Managed Blockchain and Hyperledger Fabric. Implemented W3C Verifiable Credentials for tamper-proof lifecycle documentation with selective disclosure mechanisms. Built serverless architecture with Lambda, API Gateway, Cognito authentication, and WebSocket APIs for secure stakeholder data exchange (Medium article).

## SKILLS

<b>Cyber Security:</b>	Binary exploitation, Reverse engineering (Ghidra), Hardware/Microarchitectural attacks, Network & Protocol security (Wireshark, Tamarin Prover), Web/OS security, Applied Crypto (symmetric/asymmetric, PKI, signatures)
<b>Programming:</b>	Python, C/C++, Go, Java, JavaScript, TypeScript, Assembly (MIPS), React Native
<b>Cloud &amp; DevOps:</b>	AWS (EC2, S3, RDS, Lambda, Managed Blockchain), Docker, Git/GitHub, Kubernetes
<b>Databases:</b>	SQL, MongoDB, Neo4J

## OTHER

Sports enthusiast practicing volleyball, skiing, swimming, and karate. Music lover and beginner piano player. Photography enthusiast. Volunteering experience as a summer camp animator.