# STEFANO BERLATO

## Computer Scientist, PhD

Researcher, De Cifris member
Keen on applied cryptography, cybersecurity, and cloud native
Football coach, KH fan, and D&D master

(this is a curated selection of my research activities; please refer to my website for more details)

## Contacts

## Skills

**Research Interests**

Applied cryptography, authentication, authorization, cloud native applications, devops, reverse engineering, automotive

**Languages**

Italian (mother tongue), English (C1)

## Teaching

**University of Trento - 2020 > on going**
**Teaching Assistant** for the Computer Science course "Programmazione 1"

**University of Genoa - 2023 > on going**
**Teacher** at the "Cybersecurity and Critical Infrastructure Protection" specialization course

## Education

**University of Genoa and Fondazione Bruno Kessler (FBK) - 2020 > 2023**
**PhD** in Security, Risk and Vulnerability, Cybersecurity and Reliable Artificial Intelligence curriculum

**University of Trento - 2017 > 2019**
**Master degree** in Computer Science "ICT Innovation - Security&Privacy"

**University of Trento - 2014 > 2017**
**Bachelor degree** in Computer Science

## Experience

### Researcher (Nov 2023 > on going)
**Fondazione Bruno Kessler (FBK), Trento (Italy)**
Research on applied cryptography and access control for securing cloud native applications

### PhD Student (Nov 2020 > Oct 2023)
**University of Genoa, Genoa (Italy)**
**Fondazione Bruno Kessler (FBK), Trento (Italy)**
PhD on cryptographic access control for performance aware end-to-end protection of data in cloud-edge-IoT applications

### Assistant Researcher (Oct 2018 > Oct 2020)
**Fondazione Bruno Kessler (FBK), Trento (Italy)**
Research activities on cloud, mobile, and automotive security. Design and implementation of protections against reverse enginnering for Java and Android

### Android Reverse Engineering (Jul > Oct 2018)
**2ASPIRE, Trento (Italy)**
Investigation of anti-tampering and anti-debugging protections against malicious reverse engineering

### Javascript plugins for Web SCADA (Jun > Sept 2016)
**Heas srl, Schio (Italy)**
Design of plugins for the web-based SCADA platform ATVISE® compliant with HMI industrial standards.. Developed gestures and tablet-style functionalities, dynamic object instantiation, and linking to PLC data

## Selected Publications

Stefano Berlato, Matteo Rizzi, Matteo Franzil, Silvio Cretti, Pietro De Matteis, Roberto Carbone. **Work-in-Progress: A Sidecar Proxy for Usable and Performance-Adaptable End-to-End Protection of Communications in Cloud Native Applications** in *1st Workshop on Operating Systems and Virtualization Security (OSVS 2024)*

Stefano Berlato, Silvio Cretti, Domenico Siracusa, and Silvio Ranise. **Multi-Objective Microservice Orchestration: Balancing Security and Performance in CCAM** in *27th Conference on Innovation in Clouds, Internet and Networks (ICIN 2024)*

Davide Pizzolotto, Stefano Berlato, and Mariano Ceccato. **Mitigating Debugger-based Attacks to Java Applications with Self-Debugging** in *ACM Trans. Softw. Eng. Methodol (TOSEM)*

Stefano Berlato, Marco Centenaro, Silvio Ranise. **Smart Card-Based Identity Management Protocols for V2V and V2I Communications in CCAM: a Systematic Literature Review** in *IEEE Transactions on Intelligent Transportation Systems (T-ITS)*

Stefano Berlato, Roberto Carbone, Silvio Ranise, Adam J. Lee. **Formal Modelling and Automated Trade-Off Analysis of Enforcement Architectures for Cryptographic Access Control in the Cloud** in *ACM Transactions on Privacy and Security (TOPS)*

Andreas Heider-Aviet, Danny Roswin Ollik, Stefano Berlato, Silvio Ranise, Roberto Carbone, Van Thanh Le, Nabil El Ioini, Claus Pahl, Hamid R. Barzegar. **Blockchain Based RAN Data Sharing** in *IEEE International Conference on Smart Data Services 2021 (SMDS 2021)*

Stefano Berlato, Mariano Ceccato. **A Large-Scale Study on the Adoption of Anti-Debugging and Anti-Tampering Protections in Android Apps** in *Journal of Information Security and Applications (JISA)*

## Editorial Work and Community Service

- reviewing activity: 35+ papers for both conferences and Q1 journals (e.g., IEEE TIFS)
- part of the organizing committee for TAC 24

## Supervised Theses

Marco Soldera, *bachelor in Computer Science at the University of Trento (2024)*
**A Risk Assessment Methodology for VSNF Placement in Cloud Native Applications**

Simone Brunello, *bachelor in Computer Science at the University of Trento (2024)*
**Cryptographic Access Control for Balancing Trust, Protection, and Performance**

Ion Andy Ditu, *bachelor in Computer Science at the University of Trento (2023)*
**Leveraging Trusted Execution Environment for Efficient Revocation and Security in Cryptographic Access Control**

Erica Elia, *master in Mathematics at the University of Trento (2023)*
**A Key Recovery Protocol based on Threshold Secret Sharing for Cryptographic Access Control in the Cloud: The CryptoAC Use Case**

Enrico Marconi, *bachelor in Computer Science at the University of Trento (2022)*
**Combining Blockchain-as-a-Service and Cryptographic Access Control for Secure Data Sharing Across Multiple Organizations**

Alessandro Colombo, *bachelor in Computer Science at the University of Trento (2022)*
**Attribute Based Encryption for Advanced Data Protection in IoT with MQTT**

Veronica Cristiano, *master in Mathematics at the University of Trento (2021)*
**Key Management for Cryptographic Enforcement of Access Control Policies in the Cloud: The CryptoAC Use Case**

Chaudhry Muhammad Suleman, *master in Computer Science at the University of Trento (2021)*
**Cyber-security Risk Assessment for Cooperative, Connected and Automated Mobility: Application to Cooperative Lane Merging**

## Open Source Projects and Software

- Kotlin Multiplatform for OpenABE
  github.com/StefanoBerlato/kotlin-multiplatform-openabe