

STEFANO BERLATO

Computer Scientist

Ph.D. Student@UniGE/FBK, De Cifris Member.
Keen on Cloud-IoT security and Cryptography.
Football coach, KH fan and D&D master.



Contacts

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Teaching

University of Trento - 2020 > on going

Teaching Assistant for the Computer Science course "Programmazione 1"

University of Genoa - 2023

Teacher at the Cybersecurity and Critical Infrastructure Protection Master

Education

University of Genoa and Fondazione Bruno Kessler (FBK) - 2020 > on going

PhD student 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" 110L

University of Trento - 2014 > 2017

Bachelor degree in Computer Science 110L

Skills

Computer Science

Applied Cryptography, Authentication, Authorization, Reverse Engineering, Android, Basic DevOps knowledge, Software Engineering (Kotlin)

Languages

Italian (mother tongue), English (C1)

Experience

Researcher
(Nov 2023 - on going)



Fondazione Bruno Kessler (FBK), Trento (Italy)

Research on applied cryptography, analysis of security and access control in Cloud-Edge-IoT applications.

Ph.D. Student
(Nov 2020 - Oct 2022)



University of Genoa, Genoa (Italy)
Fondazione Bruno Kessler (FBK), Trento (Italy)

Research on cryptographic access control in cloud-edge-IoT scenarios (eHealth, Cooperative Connected and Automated Mobility). Design of an architectural model for optimal enforcement of cryptographic access control policies.

Assistant Researcher
(Oct 2018 > Oct 2020)



Fondazione Bruno Kessler (FBK), Trento (Italy)

Research activities on access control in the Cloud, mobile and automotive security. Research activities on Cooperative, Connected and Automated Mobility (5G-CARMEN project). Study and design of reverse engineering protections for Java and Android Apps.

Master Thesis



University of Trento, Trento (Italy)
Fondazione Bruno Kessler (FBK), Trento (Italy)

A Pragmatic Approach to Handle "Honest but Curious" Cloud Service Providers: Cryptographic Enforcement of Dynamic Access Control Policies.
Awarded 3rd prize at Thesis Award «Innovating information security» 15th edition - 2019, Clusit
github.com/StefanoBerlato/Master-Thesis

last update: 27-10-2023

Publications

Stefano Berlato, Alessandro Colombo, Roberto Carbone, Silvio Ranise.

Cryptographic Enforcement of Fine-grained Access Control Policies With Attribute-based Encryption*

In *Italian Conference on CyberSecurity (ITASEC23)*

**not published in conference proceedings*

Stefano Berlato, Umberto Morelli, Roberto Carbone, Silvio Ranise.

End-to-End Protection of IoT Communications Through Cryptographic Enforcement of Access Control Policies

In *36th Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec'22)*

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, Roberto Carbone, Silvio Ranise.

Cryptographic Enforcement of Access Control Policies in the Cloud: Implementation and Experimental Assessment

In *18th International Conference on Security and Cryptography (SECRYPT 2021)*

Android Reverse Engineering (Jul > Oct 2018)



2ASPIRE, Trento (Italy)

Research and analysis of best practices against malicious Reverse Engineering (RE) to increase the company's knowhow in Android RE anti-tampering and anti-debugging protections.

Business Development Course (Feb > Jul 2018)



University of Trento, Povo (Italy)

"Joni is a tool meant to help blind and visually impaired people to keep in touch with the world". Validate business idea through concrete analysis on the field and market research with the goal to make news and podcasts accessible by the blind community.

github.com/StefanoBerlato/Joni

University Assistant: IT Assistant



University of Trento, Trento (Italy)

150 hours working contract under the "Information Systems Management" office, Support the deployment of the Digital University project, a new platform serving as Knowledge HUB within the university itself.

Bachelor Thesis



University of Trento, Trento (Italy)

Development of a web based Interface for the Orchestration of Machine Learning Components.

github.com/StefanoBerlato/Bachelor-Thesis

Android App - Course (Feb > Jun 2017)



University of Trento, Trento (Italy)

Glumo is an Android application for helping people who suffer from diabetes with features like automatic alarms and emergency SMS. Design of monitoring services with direct BT connection with modern glycemic sensors.

github.com/StefanoBerlato/Glumo

youtu.be/D86wqLJcGT

Publications (cont.d)

Marco Centenaro, Stefano Berlato, Roberto Carbone, Gianfranco Burzio, Giuseppe Faranda Cordella, Roberto Riggio, and Silvio Ranise.

Safety-Related Cooperative, Connected, and Automated Mobility Services: Interplay Between Functional and Security Requirements

In *IEEE Vehicular Technology Magazine* (2021)

Marco Centenaro, Stefano Berlato, Roberto Carbone, Gianfranco Burzio, Giuseppe Faranda Cordella, Silvio Ranise, Roberto Riggio.

Security Considerations on 5G-Enabled Back-Situation Awareness for CCAM

In *IEEE 3rd 5G World Forum (5GWF'20)*

Stefano Berlato, Roberto Carbone, Silvio Ranise, Adam J. Lee.

Exploring Architectures for Cryptographic Access Control Enforcement in the Cloud for Fun and Optimization

In *15th ACM ASIA Conference on Computer and Communications Security (ASIACCS 2020)*

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*, Issue number 52 (2020)

Subreviewer Activity

- 2019: ICISS
- 2020: SECRIPT, FPS, ICISS, DPM, DBSEC, SACMAT
- 2021: SECRIPT, DPM, SACMAT, ITASEC, DBSEC, FPS
- 2022: CODASPY, SECRIPT, DBSec, FedCSIS, ICISSP, FPS
- 2023: DBSec, ITASEC, SECRIPT, CODASPY, SACMAT, ICISS, FPS
- 2021: ScienceDirect - JISA

Reviewer Activity

- 2023: EURASIP - JIS
- 2024: ICIN, WWW

Open-source projects

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

Javascript plugins for Web SCADA (Jun > Sept 2016)



Heas srl, Schio (Italy)

Design of 2 plugins for the web-based SCADA platform ATWISE® in compliance with high-level HMI industrial standards. Developed gestures and tablet-style functionalities, dynamic object instantiation and linking to PLC data.

Web Development - Course (Feb > Jun 2016)



University of Trento, Trento (Italy)

Agile design and development of a website with Java backend. Implementation of Model-View-Control while employing the DAO pattern for decoupling logic from storage.

github.com/StefanoBerlato/eater

Supervised Theses

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