Francesco Intoci — Security Research Engineer

✉ francesco.intoci@protonmail.com 📞 +39 3756225627

📍 Zurich, Switzerland 📅 04 Jan 1999

🏳 Italian in Francesco Intoci

🖋 intx4.github.io

EXPERIENCE

Intern - Security Research Engineer, *Huawei* — Jul 2023 – Dec 2023, Zurich, Switzerland
- Working on **Confidential Computing** for ML pipelines, focusing on hardware (**Trusted Execution Environments**) and algorithmic (**Differential Privacy**) based solutions for data privacy.
- Technologies: *C, make, TEE-OS, QEMU, Python, Tensorflow*

Intern - Master Thesis Student, *CYD Campus - Armasuisse* — Oct 2022 – May 2023, Lausanne, Switzerland
- Design and Implementation of an **Information Retrieval Scheme** based on **Homomorphic Encryption** to allow private Lawful Interception in **5G Core** 🔗
- Participation to **Locked Shields 2023** exercise as Blue Team - **main responsible of 5G systems**
- Technologies: *Python, Go, C, Docker, Ansible*

Semester Project - Summer Student researcher, *EPFL* — Mar 2022 – present, Lausanne, Switzerland
- Implementation of a framework for **Privacy-Preserving MLaaS** in cloud environments based on **FHE** and **MPC.** 🔗
- *Technologies: Go, Python, PyTorch*

EDUCATION

EPFL, *CyberSecurity - Master Degree* — Sep 2020 – Mar 2023, Lausanne, Switzerland
- **Excellence's Fellowship** holder (**Top 3% students**)
- *GPA **5.79 / 6.00***

ETH, *CyberSecurity - Master Degree (Exchange Semester)* — Sep 2021 – Mar 2022, Zurich, Switzerland
- **Best Semester Project Award** for *227-0575-00L Advanced Topics in Communication Networks*

Politecnico di Torino, *Computer Engineering - Bachelor Degree* — Sep 2017 – Jul 2020, Torino, Italy
- GPA **110 / 110 cum laude**

SKILLS

Cryptography ● ● ● ● ○
Solid academic background in cryptography. Research and implementation experience (including two publications) and interest in Fully Homomorphic Encryption and Multiparty Computation.

Programming Languages ● ● ● ● ○
Go, Python, C (Fluent).
Bash (Scripting Experience).
Scala, Java, JS (completed course works with).

Software Engineering ● ● ● ● ○
Intimate knowledge of data structures and algorithms, software development best practices and agile methodologies, developed by completing numerous course assignments and internships during my degrees.

Machine Learning ● ● ● ○ ○
Solid knowledge of ML theory and tools (Tensorflow, PyTorch, sklearn) gained from courses, projects and internships. Bonus: experience with privacy and security issues in ML pipelines (Differential Privacy, Privacy-Preserving Inference)

LANGUAGES

Italian	● ● ● ● ●	English	● ● ● ● ○
Spanish	● ● ○ ○ ○	French	● ● ○ ○ ○

PUBLICATIONS

P3LI5: Practical and Confidential Lawful Interception on the 5G Core 🔗
Accepted for publication at **IEEE Conference on Computer and Network Security 2023**.

slytHErin: An Agile Framework for Encrypted Deep Neural Network Inference, *Springer* 🔗
Accepted for publication at **ACNS 2023 - 5th Workshop on Cloud Security and Privacy (Cloud S&P 2023)**.