Ismet KERENCILER

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CYBERSECURITY ENGINEER - PhD STUDENT AT INSTITUT POLYTECHNIQUE DE PARIS

KEY STRENGTHS

I spent two years at Télécom St-Etienne studying Computer Science and Network Security. Following this, I specialized in Cybersecurity while pursuing a Double Master's Degree at EURECOM. I have now embarked on a PhD at Télécom Paris (IPP), focusing on advanced cryptographic primitives for decentralized networks. Passionate about Cybersecurity, experience in Research and Development. Proficient in Cryptography and Machine Learning Security, with a solid understanding of **PETs** (Homomorphic Encryption, Multi-Party Computation, etc.) and Distributed Ledger Technologies (**DLT**). Strong communication and client-facing skills, and the ability to thrive in a highly collaborative and innovative environment.

EDUCATION

INSTITUT POLYTECHNIQUE DE PARIS (TELECOM PARIS), PARIS, FRANCE   2024 – 2027
PhD on Advanced Cryptographic Primitives for Decentralized networks
The thesis aims to study cryptography methods applied to decentralized networks, and improve zero-knowledge proofs, particularly the SNARKs, apply zero-knowledge proof techniques to challenges of computation on encrypted data as well as to the challenges of anonymity and accountability. It also addresses the study and improvement of post-quantum versions of these different primitives, especially the SNARKs.

EURECOM, BIOT, PROVENCE-ALPES-COTE D'AZUR, FRANCE   2022 – 2024
Master's Degree in Security Computer Systems and Communications (Cybersecurity)
Courses: System and Network Security, Cryptography, Secure Communications, Security and Privacy for Big Data and Cloud, Machine Learning, Deep learning, Image Security, Malware Forensics, Memory Forensics, Hardware Security, Digital Systems, Management.

TELECOM ST-ETIENNE, SAINT-ÉTIENNE, FRANCE   2020 - 2024
Master's Degree in Computer Science and Networks
Courses: Network Architecture, Software Engineering, Signal and Estimation Theory, Probability and Statistics, Java, C++, Python, JavaScript, HTML/CSS, Database (SQL), OS Linux, Risk management, Business Law, Finance & Accounting.

LYCEE SAINT-LOUIS, PARIS, FRANCE   2018 - 2020
2-Year Bachelor (Mathematics, Physics, Engineering)
CPGE (two-year intensive program preparing for the national competitive exam for entry to French engineering schools), ranked top 10%.

Adversarial Disentanglement Associated with Laplacian Noise of Speaker Representation for Gender Protection   2022 - 2023
EURECOM   Provence-Alpes-Côte d'Azur, France
- Research project on protecting gender information while maintaining speaker verification efficiency using an adversarial auto-encoder (**AAE**) with Laplacian noise. Calibrated noise is drawn from the Laplace distribution during the training of an AAE architecture to achieve this objective. The Laplacian noise is added to the speech data to produce gender-ambiguous voices. This research project has been accepted to the **IHMMSec23** (ACM Workshop on Information Hiding and Multimedia Security).
- Research project supervised by two researchers, Dr. Melek Önen and Dr. Maximiliano Todisco and two PHD students, Ms. Oubaida Chouchane and Mr. Michele Panariello.

EXPERIENCE

Research and Development Intern in Advanced Security Methods   2023 - 2024
IDEMIA   Germany
- Research internship on developing a **privacy-preserving biometric access control system**. Aims to mitigate the vulnerabilities inherent in traditional biometric systems, thereby enhancing both security and user privacy. Explored various Privacy Enhancing Technologies (**PETs**) including Fully Homomorphic Encryption (**FHE**), Multi-Party Computation (**MPC**), Functional Encryption (**FE**), and Function Secret Sharing (**FSS**). The objective is to combine these technologies to build a robust and secure biometric access control system while ensuring high performance for real-world applications. This research project has been accepted to the **IHMMSec24**. Led weekly presentations and prepared comprehensive reports.

COMPETENCIES

Languages: French (Native), English (level B2, TOEIC score: 905/990), Spanish (level A2), Japanese (level A1).
Skills: MPC, FHE, DLT, FSS, DL (GAN, GRU, AAE), Differentially Private Speaker Anonymization, Facial and Voice Privacy.
Computer languages and Tools: Python, Golang, Java, C/C++, JavaScript, Html, SQL, Unix, Bash, VS Code, Pytorch, TensorFlow.

INTERESTS

Volunteer Activity (Nov 2020 - Sep 2021): JeuneEnsemble42, tutoring and homework help.
Sport and other activities: Practice of football for 8 years, Chess, Piano, Boxing, **Web3** Smart Contract Implementation.