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Hamid Reza Saadi Dadmarzi

Education

Koç University, Istanbul, Turkey *2023/11 – Present*
M.Sc. in Computer Science
Research focus: Password based authentication schemes (SMPC), Post-Quantum Cryptography, and privacy-preserving ML.

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran *2017/09 – 2020/08*
M.Sc. in Applied Mathematics
Research focus: Quantum error correcting codes, Surface codes, information theoretic cryptography.

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran *2018/09 – 2020/08*
Minor in Physics.

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran *2014/09 – 2017/08*
B.Sc. in Applied Mathematics
Ranked in the top 5% among all students.

Research Experience

Secure Multi-Party Computation (SMPC)

1. *Updatable Distributed Password-Protected Sharing (UpSPA)* (*Will be submitted soon*) Designed and strengthened an updatable SMPC scheme; authored ideal/real simulation proofs under malicious adversaries; improved protocol design; and evaluated performance in `Rust`, `Golang`, and `Docker`.

2. *Post-Quantum Secure SPA Framework (First Author)* (*In Development*) Extending the UpSPA concept to a post-quantum secure framework using a KEM with three target properties; constructing UC-security proofs for adaptive malicious adversaries and benchmarking performance against UpSPA and existing SSO schemes.

Privacy-Preserving Machine Learning

1. *CURE Project Contributor Completed:* Assisted in developing privacy-preserving ML models using `Lattigo` (Golang), implementing and debugging CKKS-based FHE and bootstrapping modules.

2. *Frequency Domain DP-FL (First Author) In Progress:* Leading the development of a frequency-domain differential privacy framework for communication-efficient federated learning, integrating Fourier-based grouping with tight DP accounting.

PQC Application Atlas (Ongoing)
Independently curating a comprehensive survey on post-quantum cryptography applications; organized 90+ papers (2020present) into 19 domains within Overleaf, to be released as a public reference website inspired by the Error Correction Zoo.

Honors & Awards

- Recognized as an Outstanding Teaching Assistant for the Computer Networks and Security course; awarded a top-up conference travel allowance (8,000 TL), Spring 2025.
- Awarded double major recognition from the Exceptional Talent Center at the university.

- Admitted to the Master of Science program without a national entrance exam, recognized by the Exceptional Talent Center.
- Ranked in the top 5% among all students in the B.Sc. program.

Skills

- **Languages:** Persian (Native), English (Working Professional Proficiency), Turkish (Elementary).
- **Programming:** Rust, Python, Go (Golang), MATLAB.
- **Typesetting:** LaTeX.
- **Data manipulation & ML:** NumPy, pandas, SciPy, scikit-learn, TensorFlow.
- **Quantum information:** Qiskit, PyQuil.
- **Optimization:** `scipy.optimize`, CVXPY.
- **Data analysis & visualization:** Tableau, Excel, Power BI.
- **Go libraries:** Lattigo.

Academic Services

- External reviewer for *IEEE Transactions on Information Forensics & Security (IEEE TIFS)*, *ACM ASIACCS 2024*, *ACM ASIACCS 2026*, *ACNS 2026*, *Journal of Information Security and Applications (JISA, 2025)*, *Royal Society Open Science (2024)*, and *Turkish Journal of Electrical Engineering & Computer Sciences*.
- Mentored two interns during Summer 2025; mentoring four interns from Fall 2025 through Summer 2026.

Teaching Experience

Amirkabir University of Technology

• Time Series Analysis	Fall 2019
• Multivariable Calculus	Spring 2019
• Introduction to C Programming	Fall 2018
• Partial Differential Equations	Fall 2018
• Foundation of Matrix and Linear Algebra	Spring 2018
• One Variable Calculus	Fall 2017
• Introduction to Probability	Spring 2017
• General Physics (Electricity and Magnetism)	Spring 2017
• Foundation of Mathematical Analysis	Spring 2017
• Introduction to Set Theory and Logic	Fall 2016–Spring 2018

Koç University

• Introduction to Python Programming	Fall 2023
• Discrete Structures	Spring 2024
• Data Structures & Algorithms	Fall 2024
• Computer Networks & Security	Spring 2025, Spring 2026
• Modern Cryptography	Fall 2025

Conferences & Workshops

- **Frontiers in Mathematical Science 6th Conference**, Sharif University of Technology, Tehran — July 2018
- **Frontiers in Mathematical Science 5th Conference**, Institute for Research in Fundamental Sciences (IPM), Tehran — July 2017
- **Second Summer School for Undergraduate Students in Iran**, Institute for Advanced Studies in Basic Sciences, Zanjan — July 2017
- **Workshop on Mathematics of Information-Theoretic Cryptography**, Institute for Mathematical Sciences, Singapore — Sept. 2016
- **First Summer School for Undergraduate Students in Iran**, Institute for Advanced Studies in Basic Sciences, Zanjan — July 2016
- **Workshop on Game Theory**, Amirkabir University of Technology, Tehran — June 2016