Borhan **Javadian**

CYBERSECURITY AND CRYPTOGRAPHY RESEARCHER

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"Be the change that you want to see in the world."

Research Interests

- Red teaming, ethical hacking, and offensive security methodologies
- Privacy-preserving cryptographic systems, including fully homomorphic encryption and zero-knowledge proofs
- Post-quantum cryptography and secure multiparty computation
- Applied cybersecurity, privacy engineering, and secure systems design

Education

Sabancı University *Istanbul, Turkey*

B.Sc. IN COMPUTER SCIENCE AND ENGINEERING, MINOR IN MATHEMATICS *Sep 2021 – Present*

- GPA: 3.73 / 4.00 (as of July 2025) — consistently increasing; primarily impacted by non-technical electives
- CS GPA: Estimated 3.95+ — core technical courses with consistent A grades
- Expected Graduation: June 2027
- Relevant Coursework: Malware Analysis, Network Security, Cybersecurity Applications, Cryptography, Computer Networks, Blockchain and Security Applications

Research Experience

Sabancı University *Istanbul, Turkey*

RESEARCH INTERN – PURE PROGRAM (PROJECT ON HOMOMORPHIC ENCRYPTION OPTIMIZATION) *Jul 2024 – Sep 2024*

- Investigated computational bottlenecks in matrix-vector multiplication over CKKS scheme
- Designed and benchmarked chunking strategies for optimizing encrypted linear algebra
- Worked with Microsoft SEAL and C++ to implement and test performance gains

Projects

DECENTRALIZED FINANCE (DEFI) BLOCKCHAIN APP *Fall 2024*

- Developed a smart contract-based lending and staking dApp using Solidity and React
- Used OpenZeppelin libraries and deployed on Ethereum Sepolia testnet
- Demonstrated frontend-backend integration with Web3.js and MetaMask
- GitHub repository: `github.com/Borhanxj/defi-blockchain-app`

PYTHON-BASED PORT SCANNER *Summer 2024*

- Built a CLI tool for multi-threaded TCP port scanning and banner grabbing
- Included input validation, error handling, and custom scan ranges
- GitHub repository: `github.com/Borhanxj/py-port-scanner`

STRESS LEVEL ANALYSIS – DATA SCIENCE PROJECT *Spring 2025*

- Analyzed correlation between stress, inflation, and social media usage using multiple datasets
- Performed EDA, multi-axis visualization, correlation heatmaps, and hypothesis testing
- Used Python, Pandas, Seaborn, and statistical methods in Google Colab
- GitHub repository: `github.com/Borhanxj/stress-level-analysis`

Skills

Programming	C++, Python, JavaScript, Solidity, Bash, Go (basic)
Cybersecurity	Penetration Testing, Red Teaming, Port Scanning, Network Analysis, Malware Analysis
Cryptography	Homomorphic Encryption (CKKS), Post-Quantum Crypto (learning), Zero-Knowledge Proofs (learning)
Tools & Libraries	Microsoft SEAL, Git, Linux, Kali, Nmap, Burp Suite, Wireshark, Scapy, Hydra, John the Ripper, MetaMask
Data Science	Pandas, NumPy, Matplotlib, EDA, Hypothesis Testing
Mathematics	Abstract Algebra, Number Theory, Linear Algebra, Probability, Discrete Math

Awards & Honors

- Merit-based Scholarship (25%) — Sabancı University, awarded at admission for academic excellence
- Dean's Honor List — Multiple semesters with High Honors (GPA > 3.50)
- World 1st Place — Caribou Mathematics Contest (High School Division)
- Distinction Certificate — University of Waterloo Fermat Mathematics Contest
- Currently preparing for: CompTIA Network+, Security+, and eJPT (Practical Penetration Testing)

Languages

- Persian — Native
- English — Full Professional Proficiency
- Turkish — Full Professional Proficiency
- Azerbaijani — Working Proficiency

Teaching Experience

Sabancı University *Istanbul, Turkey*
LEARNING ASSISTANT — MATHEMATICS & DIGITAL SYSTEMS DESIGN *Fall 2023 – Present*
- Led recitation sessions and problem-solving workshops for undergraduate students
- Assisted in grading, student mentoring, and exam preparation
- Served as assistant for 4 semesters across multiple math and engineering courses

Talks & Conferences

- Attended: Quantum Optimization and Security Conference, led by Dr. Özlem Salehi Köken (Dean's Speaker Series, Sabancı University, 2025)

Courses & MOOCs (Ongoing)

- Cryptography I — Stanford Online (Instructor: Prof. Dan Boneh)