
Education

- 2023 – **Doctorate**, *Middle East Technical University (METU)*, Turkey, Cryptography
Polynomial optimisations in Lattice-bases cryptosystems
- 2019 – 2023 **Undergraduate with Honors**, *TOBB University of Economics and Technology*, Turkey, Computer Engineering
- *Relevant Coursework*: Internet Security Protocols (BIL 448), Data Communications and Networking (BIL 452), Systems Programming (BIL 214), Operating Systems (BIL 461)
 - *Further Electives*: Approximation Algorithms (BIL 436), Introduction to Cybersecurity (BIL 420), Machine Learning (BIL 470), Data Mining (BIL 476), Microprocessors (BIL 362)

Skills

Programming	GNU C (C11), C++20, Rust, Java 8, C#9, Python 3.10	Protocols & Formats	OAuth 2.0, SSH, TLS, X509, WireGuard
Frameworks	Axum, Django, .NET Core	Databases	PostgreSQL, SQLite

Experience

- December 2023 – **Software Engineer**, *Internet Systems Consortium*, BIND 9
- Implementing new features, reviewing patches and experimenting with new designs for improving BIND9.
- September 2022 – **Intern Developer**, *STM Defence Industries and Engineering*.
- December 2022
- Worked on internal attack surface analysis tooling. Automated analysis further while adding more detail. Increased modularity and containerized sections that need scalability.
 - Wrote articles in two quarterly public reports about noteworthy developments in cybersecurity worldwide.
- June 2022 – **Teaching Laboratory Assistant**, *TOBB University of Economics and Technology*.
- August 2022
- Assisted in teaching C to engineering students. Supervised students in sessions, helped them in their questions and graded their lab assignments.
- September 2021 – **Junior Developer**, *TRK Technology*.
- April 2022
- Set up and configure essential infrastructure such as PKI (X.509 and SSH Certificate-Based Authentication), IAM, log aggregation, playbooks and alerting; centralizing user identity, logs, security management and more.
 - Profiling the usage of PostgreSQL and tuning queries, tables and parameters, improving database efficiency.
 - Development of trading oriented data scraping tools for internal use, diversifying sources to use in applications.
 - Design and development of an in-house data processing and model training system in Rust, reducing expensive recomputations, minimizing persistence costs.

May 2021 – **Intern Developer**, *ALTAY Information Technologies Defense Industrial and Trade Inc.*

- Developed the prototype of a parallel NVENC accelerated custom video encoding solution for bespoke deployments in C++20.
- Assisted in server-to-server authentication and OAuth 2.0 (with OIDC) usage, making the user authentication interoperable.
- Assisted in the development of business microservice solutions.

February 2020 – **Teaching Laboratory Assistant**, *TOBB University of Economics and Technology*

- Assisted in teaching C++ to Electrical and Electronics Engineering students and graded their lab assignments.

Languages

Turkish Native

English Professional Proficiency

TOEFL iBT: (2022): 106/120

Projects

WitchAuth, *Rust, SQLite*

IAM server tailored for the needs of small communities and coops.

Pipelined AES, *Verilog*

Implemented the AES block cipher in hardware. Each step is pipelined alongside a depth-16 S-Box circuit as derived in IACR Paper 2011/332.

Predicting H1N1 and Seasonal Flu Vaccine, *Python (scikit-learn)*

Entered the DrivenData's Flu Shot Learning: Predict H1N1 and Seasonal Flu Vaccines competition for BIL 470's project. Placed 354 out of 3204 at the time with a AUROC score of 0.8545.

Embedded Fourier Transformation, *C (ARM Thumb)*

Implemented DFTs and signal handling for STM32-F4 series microcontrollers for BIL 362's project.