

INTERESTS

Higher structures, homotopy theory, lattice-based cryptography, homomorphic encryption

EDUCATION

Middle East Technical University
BSc in Mathematics, GPA: 4.00/4.00

Ankara, TR
2022–2026

RESEARCH EXPERIENCE

Sabanci University
Cryptography and Information Security Group

İstanbul, TR
August 29 – Current

- Investigating acceleration techniques for CKKS bootstrapping

Sabanci University
Meetings with faculty members

İstanbul, TR
September 28 – November 13

- Presenting recent academic papers on post-quantum cryptography

Sabanci University
Program for Undergraduate Research (PURE)

İstanbul, TR
Summer 2024

- Developing accelerators for homomorphic encryption
- Supervisor: Erkay Savaş

PUBLICATIONS

- [1] **E. İzbudak** and A. Ş. Özcan, “Practical bootstrapping of CKKS ciphertexts with HEonGPU”, Work in progress, 2025.

EXPOSITORY PRESENTATIONS & TALKS

All Morphisms Are Equal, But Some Morphisms Are More Equal Than Others
DRP Türkiye, Report, Slides

Sabanci University
September 5, 2024

Sparse Packing for CKKS
Slides

Sabanci University
Summer 2024

Fast Multiplication and PLWE-RLWE Equivalence
Slides

Online
Fall 2024

Lattice-Based Foundations of Homomorphic Encryption
Slides

Middle East Technical University
Fall 2024

Cryptanalysis of PLWE Based on Zero-Trace Quadratic Roots
Slides

Online
Winter 2025

LEARNING SEMINARS

Derived Algebraic Geometry

Kadri İlker Berktaş, 1 talk contributed.

Middle East Technical University

Spring 2025 – Current

Serre's Local Algebra

Özgür Kişisel, 2 talks contributed, notes (incomplete).

Middle East Technical University

Spring 2024

Categorical Quantum Mechanics

Cihan Okay

Bilkent University

Spring 2024

CERTIFICATES

- LFD103, The Linux Foundation, February 2023
- LFC108, The Linux Foundation, March 2025

SCHOLARSHIPS AND AWARDS

- TMD Cahit Arf Scholar January 2024 - Current
- TOG-Bezmen Merit Scholarship 2022 - Current

SKILLS

- Python, Rust, Shell Scripting
- \LaTeX , Git, Linux Administration (Gentoo)
- Cryptography, Digital Forensics

LANGUAGES

- **English:** Fluent
- **French:** Basic reading
- **Turkish:** Native

MISCELLANEOUS

Community contributions

- Tor Project, Relay Operator December 2020 – Current
Supporting global internet freedom by maintaining a secure bridge.
- Gentoo, Proxied Maintainer August 2022 – Current
Maintained packages: `sc-im`, `mutt-wizard`, `libxlszwriter`
- Qubes, Technical Documentation Writer November 2020 – December 2020
We have produced the `split-ssh` method.

Founding projects

- Libeior.org, Founder, System Administrator February 2023 – January 2024
Libeior was an organization providing secure and free e-mail/XMPP accounts.
- Liberpub, Founder, System Administrator July 2022 – January 2024
Liberpub was an online printing service with no initial cost for the author.

Freelance experience

- Upwork, Freelance Software Developer July 2022 – September 2023
Projects include: \LaTeX to MathJax conversion, PDF harvesting and manipulation