

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, 2024 – Current

- Investigating acceleration techniques for CKKS bootstrapping

Sabanci University

Research group on foundations of homomorphic encryption

İstanbul, TR

September 28, 2024 – November 13, 2024

- Presenting recent academic papers on the RLWE/PLWE problems
- Ferruh Özbudak, Kamer Kaya

Sabanci University

Program for Undergraduate Research (PURE)

İstanbul, TR

Summer 2024

- Developing accelerators for homomorphic encryption
- Supervisor: Erkey 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

<i>Derived Algebraic Geometry</i> Alexander Zahrer, Lucy Grossman, Marcus Nicolas, Outline	Online Spring 2025 – Current
<i>Higher Structures</i> Kadri İlker Berktaş, 2 talks contributed.	Middle East Technical University Spring 2025 – Current
<i>Serre's Local Algebra</i> Özgür Kişisel, 2 talks contributed, notes (incomplete).	Middle East Technical University Spring 2024
<i>Categorical Quantum Mechanics</i> Cihan Okay	Bilkent University Spring 2024

CONFERENCES & WORKSHOPS ATTENDED

• <i>Thirtieth Gökova Geometry / Topology Conference</i>	May 25-30, 2025, Muğla, TR
• <i>Mapping Class Groups and Beyond</i>	May 14-18, 2025, Ankara, TR
• <i>Real World Crypto Symposium</i>	March 26-28, 2025, Sofia, BG
• <i>4th Annual FHE.org Conference</i>	March 25, 2025, Sofia, BG
• <i>8th Homomorphic Encryption Standards Meeting</i>	March 23, 2025, İstanbul, TR

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`, `libxlswwriter`
- 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
Liberior 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