

Ahmet Emre Eser

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EDUCATION

Sabanci University

Bachelor of Science in Computer Science and Engineering

Istanbul, Turkey

Sep 2021 – Jun 2025

- Full Scholarship
- GPA: 3.77 / 4.00
- High Honor Award: Fall & Spr 2021-22, Fall & Spr 2022-23, Spr 2023-24
- Completed 28% more ECTS engineering credits than required

Sabanci University

Bachelor of Science (dual degree) in Electrical Engineering

Istanbul, Turkey

May 2023 – Discontinued (Sep 2024)

- Completed more than 70% of required and elective electronics coursework.

Robert College of Istanbul

High School Diploma

Istanbul, Turkey

Aug 2016 – Jun 2021

- Admits the top 0.01% of ~1.2M entrants of the nation-wide high school placement exam
- Member of the selective global [G30 school alliance](#)

EXPERIENCE

Computer Architecture Research Assistant

Sabanci University

Sep 2024 – Present

Istanbul, Turkey

- Designing a multi-core hardware-aware neural architecture search (HWNAS) accelerator
- Tasks: Algorithm-level specification, architectural specification, RTL design, literature review
- Advised by [Prof. Ozcan Ozturk](#)

Computer Architecture Research Intern

EPFL / Ecole Polytechnique Federale de Lausanne, PARSA Lab

Jun 2024 – Sep 2024

Lausanne, Switzerland

- Implemented a VA translation prefetcher for [Midgard Virtual Memory Framework](#) in Chisel HDL
- Advised by [Prof. Babak Falsafi](#)

RTL Design Co-op

ADI / Analog Devices Integrated

Sep 2023 – Jun 2024

Istanbul, Turkey

- Implemented NIST compliant elliptic curve digital signature and key exchange operations on hardware in *Verilog*
- Developed elliptic curve digital signature and Diffie-Hellman software for the [MAXQ Systems on Chip](#) in *C*
- My work is planned to be implemented on silicon in Q1 2027
- Received full time return offer and positive reviews

Teaching Assistant - CS401: Computer Architecture

Sabanci University

Feb 2024 - May 2024

Istanbul, Turkey

- Presented problem session content, graded exams & homework, held office hours

Research Assistant - Cryptographic Accelerator Design

Sabanci University

Sep 2023 – Apr 2024

Istanbul, Turkey

- Worked on RISC-V ISA extension for post quantum cryptography algorithm (Kyber, Dilithium, NTT) acceleration
- Implemented number theoretic transformations in Assembly language for reference metrics
- Advised by [Prof. ErKay Savas](#)

RTL Design Intern

ADI / Analog Devices Integrated

Jun 2023 – Sep 2023

Istanbul, Turkey

- Implemented elliptic curve point operations on hardware in *SystemVerilog* for a cryptography coprocessor
- Developed a regression testing script for our elliptic curve cryptography accelerator in *Python & Shell*
- Optimized area of our elliptic curve cryptography coprocessor
- Received co-op conversion offer

Back-end Software Development Intern

TUBITAK Bilgem

Jan 2023 – Feb 2023

Istanbul, Turkey

- Developed an email microservice for the [Safir-Depo](#) suite's note taking app using Quarkus and Apache Kafka

Learning Assistant - CS204: Advanced Programming

Sabanci University

Sep 2022 - Jan 2023

Istanbul, Turkey

- Assisted problem sessions, held office hours

SKILLS

Hardware Description Languages: Verilog/SystemVerilog (Fluent), Chisel (Fluent), Bluespec Verilog (Basic)
Architectures: RISC-V (Knowledgeable), AVR (Knowledgeable), MIPS (Knowledgeable), ARM (Basic), x86 (Basic)
Tools: Cadence Virtuoso, Git, Verilator, QEMU, OpenOCD, Vivado, Linux/Unix, SVN, SBT, Makefile, Jenkins
Programming Languages: C/C++ (Fluent), Python (Fluent), Bash (Intermediate), SQL (Intermediate), Rust (Basic), TCL (Basic), Matlab (Basic)
Frameworks & Libraries: OpenMP (Intermediate), CUDA (Intermediate), NS-3 (Intermediate), FreeRTOS (Intermediate), Flex-Bison/Yacc (Basic)
Languages: English (Fluent), German (Intermediate), Turkish (Native)

TEST SCORES

GRE General: Quant: 168/170, Verbal: 163/170, AWA: 3.5/6
TOEFL IBT: Overall: **113/120** - Reading: 30/30, Listening: 29/30, Speaking 26/30, Writing: 28/30

PROJECTS

- Messenger with Signal Protocol** | *Python, Cryptography* Dec 2023
- Encryption, decryption and secure messaging via the Signal protocol
- 32 bit OS for x86** | *C, QEMU, x86 asm* July 2023 - Sep 2023
- Bootloader and VGA drivers functional, boots into kernel
- Sobel Edge Detection Module** | *Verilog* May 2023
- Reads color input image from SRAM, outputs result through VGA
 - Area: 130 std cells, avg 14.45 cell pins on Xilinx Spartan 3E
- Bluetooth Environmental Sensing Beacon** | *Embedded C, ESP-IDF, FreeRTOS, Bluedroid* Apr 2023
- Interfaces with two I2C sensors, advertises sensor data through low energy GAP protocol
- Global Smoking Statistics Database** | *SQL* Apr 2023
- Morse Code Processor Module** | *Verilog, Vivado* Feb 2023
- Deciphers Morse code input in real time and outputs to a 7 segment display array
- Elevator Control Module** | *Verilog, Vivado* Jan 2023
- Manages coinciding calls according to priority logic

EXTRA CURRICULARS & VOLUNTEERING

- Convention Organizer and Coordinator - Informatics Days 2022** Aug 2022 - Dec 2022
Crossing Paths Foundation Istanbul, Turkey
- Organized a day long event hosting ~20 professionals from leading tech companies and ~300 students from all around Turkey at Sabanci University campus
 - News Clipping (TR)
- Volunteer** Jul 2022 - Mar 2023
Crossing Paths Foundation Redwood City, CA (remote)
- Arranged YouTube interviews with engineering professionals
 - Wrote social media posts regarding organized events
- Promotional Representative** Feb 2022 - Jun 2022
Sabanci University Istanbul, Turkey
- Guided visitors in campus tours