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Berkehan Ercan

YouTube Page
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Education

Bachelor's Degree in Electrical and Electronics Engineering **Sep 2021 - Jun 2025 (expected)**
Bilkent University

Member of IEEE Bilkent Student Branch

Orhan Arikan's Research Team **Jan 2023 - Ongoing**
In Orhan Arikan's Research Team on Novel Semantic Communications
Currently publishing an academic paper on Journal of the Franklin Institute titled
Practical Hardware Implementation of a Multi-Sensor Homogeneous Goal-Oriented Semantic Communications Network
Investigated novel Semantic Information Theory and simulated possible hardware implementations of memristive device based AI accelerators.

High School Diploma **Sep 2017 - Jun 2021**
Ted Ankara College

I was on the Mathematics-Science Track. Graduated with excellent grade.

International Baccalaureate Diploma **Sep 2017 - Jun 2021**
Ted Ankara College

Diploma Point: 38/45
High Levels: English B, Chemistry, Mathematics Analysis and Approaches
Standard Levels: Turkish A: Literature, Environmental Systems and Societies, Physics
Chemistry Extended Essay: Bio Degradation Capabilities of Poly-lactic acid Polymer (PLA)

Experience

Post-5G Communication Research and Development Intern Engineer **Jun 2023 - Aug 2023**
Huawei Technologies *Ankara, Turkey*

- Neuromorphic Computation

  I contributed as an intern to investigate the feasibility and the implementation procedure of novel neuromorphic computation units called Resistive Processing Units (RPUs). We have demonstrated TOPS acceleration and increase in power efficiency on Image Classifying Deep Neural Networks using this novel computation framework.

- Semantic Information Theory

  I also worked on implementation of semantic data extraction in an edge computing scenario.

Personal Projects

DIY Analog Computer **Aug 2022-Ongoing**
Personal Project

- Designed and built an Analog Computer capable of solving various differential equations, modelling real-world phenomena.

DIY 10.6GHz Doppler Radar **Jan 2024- Feb 2024**
Group Project

- We have designed and built a functioning Continuous Wave X-Band Doppler radar out of old satellite dish parts. It can accurately measure radial speed of an object within a distance of 10 meters. Developed a GNURadio flowchart to process beat frequency data in real-time to generate a velocity spectrum and waterfall graph.

Skills

Programming-Markup	Python, MATLAB, C, FORTRAN 90-95, LaTeX, Markdown
Hardware Design	VHDL, Xilinx Vivado, Arduino, ESP-IDF
Communication	Turkish (native), English (professional proficiency), Spanish (beginner)
Other	Licensed Amateur Radio Operator, Call sign: TA2NXB Amateur Astronomer