

Arda Çınar Demirtaş

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Education

Bilkent University

Electrical and Electronics Engineering (CGPA: 3.97/4, Ranking: 3/243)
(Internal transfer from Physics in January 2022)

September 2021 – June 2025 (Expected)

Ankara, Turkey

EPFL (École polytechnique fédérale de Lausanne)

Electrical and Electronics Engineering
Exchange Semester

February 2024 – July 2024

Lausanne, Switzerland

Ari Anatolian High School

International Baccalaureate (IB) Diploma (Grade: 41/45)
Turkish Anatolian High School Diploma (Grade: 98.45/100)

September 2017 – June 2021

Ankara, Turkey

Publications

O.F. Atli, B. Kabas, F. Arslan, A.C. Demirtas, M. Yurt, O. Dalmaz, and T. Çukur, "I2I-Mamba: Multi-modal medical image synthesis via selective state space modeling," *arXiv preprint*, url: arxiv.org/abs/2405.14022, 2024.
(Under review at *IEEE Transactions on Medical Imaging*).

N. Talabot, O. Clerc, A.C. Demirtas, D. Oner, and P. Fua, "PartSDF: Part-Based Implicit Neural Representation for Composite 3D Shape Parametrization and Optimization." (Submitted to *top-tier conference*).

O.F. Atli, B. Kabas, F. Arslan, A.C. Demirtas, M. Yurt, O. Dalmaz, and T. Çukur, "Multi-Contrast MR Image Synthesis with Episodic State-Space Modeling." (Submitted to *ISMRM 2025*).

Awards & Honors

High Honor Student

2021 – Current

Bilkent University

- Been a high honor student at Bilkent University every semester throughout my bachelor's

Scholarship by Ranking in University Placement Exam

2021 – Current

Bilkent University

- Receiving a 50% tuition scholarship throughout all four years of university due to my ranking in the top 0.14% in the national university placement exam (YKS-2021)

Scholarship Based on Merit

2023 – 2024

Bilkent University

- Awarded an 80% tuition scholarship due to my CGPA based ranking within the top 2% of my major

Scholarship for Contribution to Research

2022

National Nanotechnology Research Center (UNAM)

- Awarded a monthly stipend for six months due to outstanding research work in an ERC (European Research Council) funded project at *Simply Complex Lab*, supervised by Serim İlday.

Scholarship Based on Merit

2017 – 2021

Sıtkı Alp Education Foundation (SAEV)

- Received full scholarship throughout my high school studies due to my success in the SAEV scholarship examination

Research Experience

Undergraduate Researcher

July 2023 – Present

National Magnetic Resonance Research Center (UMRAM) (Supervisor: Tolga Çukur)

Ankara, Turkey

- Designed neural networks for multi-modal medical image synthesis using **PyTorch**
- Infused novel variations of state space models (SSMs) into neural networks
- Conducted experiments on BraTS (Brain Tumor Segmentation) and MRI-CT datasets

Undergraduate Researcher

February 2024 – July 2024

CVLab @ EPFL (Supervisor: Pascal Fua)

Lausanne, Switzerland

- Worked on 3D shape abstraction using implicit neural representations with **PyTorch**
- Designed novel losses to apply shape abstraction with geometric primitives like spheres and cones
- Applied cascaded diffusion for shape generation.

Undergraduate Researcher

February 2022 – February 2023

Simply Complex Lab (Supervisor: Serim İlday)

Ankara, Turkey

- Worked on an RL algorithm to trace pattern formation of self-assembling colloidal nanoparticles
- Constructed an RL environment using **OpenAI Gym** with Python
- Developed Python code aimed at constructing and training an RL agent with **PyTorch**

Teaching Experience

Tutor – CS115 (Python Course)

September 2022 – June 2023

Bilkent University

Ankara, Turkey

- Held weekly tutorial sessions to solve Python questions and address students' academic needs
- Answered students' questions about their lab assignments
- Checked students' lab assignments before submission

Work Experience

Industrial Project Intern

September 2024 – Present

Meteksan Defense

Ankara, Turkey

- Working on a radio and drone signal recognition project as part of a year-long course on an industrial design project

Summer Intern

July 2024 – August 2024

Digital Transformation Office of The Presidency of Turkey

Ankara, Turkey

- Constructed an autoencoder for image colorization on natural images

Summer Intern

July 2023

National Magnetic Resonance Research Center (UMRAM)

Ankara, Turkey

- Worked on multi-modal medical image synthesis using diffusion models

Programming Skills

Programming Languages: **Python, MATLAB, L^AT_EX, VHDL, 8051 Assembly**
Frameworks & Toolkits: **PyTorch, TensorFlow, OpenAI Gymnasium, Qiskit**

Volunteering & Student Clubs

Volunteer

August 2022

Internationale Begegnung in Gemeinschaftsdiensten e.V. (IBG)

Klingenberg am Main, Germany

- Helped construct an elevated wooden trail for a prey bird rehabilitation station

Volunteer Tutor

November 2021 – May 2022

Bilkent Social Awareness Projects (SAP)

Ankara, Turkey

- Tutored primary/secondary school children from socioeconomically disadvantaged backgrounds in Natural Sciences, Math, and English

Communications Society Chair / Active Member

November 2021 – June 2023

IEEE Bilkent Student Branch

Ankara, Turkey

- Co-coordinator of the IEEE Bilkent team for the 8th Industrial Design Projects Fair
- Organization team member for Graduate Research Conference '22