

Arda Çınar Demirtaş

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Education

Bilkent University <i>Electrical - Electronics Engineering (CGPA: 3.97/4, Ranking: 3/243)</i> (Internal transfer from Physics in January 2022)	January 2022 – June 2025 (Expected) <i>Ankara, Turkey</i>
EPFL (École polytechnique fédérale de Lausanne) <i>Electrical and Electronics Engineering</i> Exchange Semester	February 2024 – July 2024 <i>Lausanne, Switzerland</i>
Bilkent University <i>Physics</i> (Internal transfer to Electrical - Electronics Engineering in January 2022)	September 2021 – January 2022 <i>Ankara, Turkey</i>
Ari Anatolian High School <i>International Baccalaureate (IB) Diploma (Grade: 41/45)</i> <i>Turkish Anatolian High School Diploma (Grade: 98.45/100)</i>	September 2017 – June 2021 <i>Ankara, Turkey</i>

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 *CVPR 2025*).
- 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," 2024. (Submitted to *ISMRM 2025*).

Awards & Honors

High Honor Student <i>Bilkent University</i> <ul style="list-style-type: none">• Been a high honor student at Bilkent University every semester throughout my bachelor's	2021 – Current
Scholarship by Ranking in University Placement Exam <i>Bilkent University</i> <ul style="list-style-type: none">• 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)	2021 – Current
Scholarship Based on Merit <i>Bilkent University</i> <ul style="list-style-type: none">• Awarded an 80% tuition scholarship due to my CGPA based ranking within the top 2% of my major	2023 – 2024
Scholarship for Contribution to Research <i>National Nanotechnology Research Center (UNAM)</i> <ul style="list-style-type: none">• Awarded a monthly stipend for six months due to outstanding research work in an ERC (European Research Council) funded project at <i>Simply Complex Lab</i>, supervised by Serim İlday.	2022
Scholarship Based on Merit <i>Sıtkı Alp Education Foundation (SAEV)</i> <ul style="list-style-type: none">• Received full scholarship throughout my high school studies due to my success in the SAEV scholarship examination	2017 – 2021

Research Experience

Undergraduate Researcher

February 2024 – July 2024

CVLab @ EPFL (Supervisor: Pascal Fua)

Lausanne, Switzerland

- Worked on 3D shape abstraction using neural implicit 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

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 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 – CS1115 (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