

Ahmet Burak Yildirim

PH.D. STUDENT

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Summary

A graduate student working at Bilkent University Generative DLR Lab. Experienced in deep generative models and **seeking a summer research internship opportunity**. Current research focuses on GAN inversion, image inpainting, and adapting 2D models for 3D texture generation.

Education

Bilkent University

Ankara, Turkey

PH.D. IN COMPUTER ENGINEERING

Sep. 2024 - Present

- **CGPA:** 4.00 / 4.00
- **Relevant Coursework:** Deep Generative Models
- **Supervisor:** Asst. Prof. Dr. Aysegul Dundar

Bilkent University

Ankara, Turkey

M.Sc. IN COMPUTER ENGINEERING

Jan. 2022 - May. 2024

- **CGPA:** 4.00 / 4.00
- **Relevant Coursework:** Deep Generative Networks, Deep Learning, Natural Language Processing, Computer Graphics, Neural Networks, Machine Learning, Computer Vision
- **Master's Thesis:** Image Inpainting with Diffusion Models and Generative Adversarial Networks
- **Supervisor:** Asst. Prof. Dr. Aysegul Dundar

Ozyegin University

Istanbul, Turkey

B.Sc. IN COMPUTER SCIENCE

Sep. 2017 - Jan. 2022

- **CGPA:** 3.98 / 4.00
- Full-tuition scholarship due to high ranking in the university placement exam.
- **Relevant Coursework:** Introduction to Machine Learning and Artificial Neural Networks, Machine Learning in Finance, Introduction to Artificial Intelligence, Data Science with Python, Bioinformatic Algorithms
- **Senior Project:** Evaluating and Interpreting Deep Generative Adversarial Networks
- **Senior Project Advisor:** Prof. Dr. Ethem Alpaydin

Selected Publications

UNDER REVIEW

- **A. B. Yildirim**, M. U. Aydogdu, D. Ceylan, and A. Dundar, "MD-ProjTex: Texturing 3D Shapes with Multi-Diffusion Projection," in *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2024.
- **A. B. Yildirim**, H. Yesiltepe, A. Dundar, and P. Yanardag, "FairLoRA: Efficient Bias Mitigation in Text-to-Image Models via Low-Rank Adaptation," in *AAAI Conference on Artificial Intelligence*, 2025.
- **A. B. Yildirim**, V. Baday, E. Erdem, A. Erdem, and A. Dundar, "Inst-Inpaint: Instructing to Remove Objects with Diffusion Models," in *International Journal of Computer Vision*, 2024. [arXiv](#). [GitHub](#). [Webpage](#).

ACCEPTED

- Y. Ekin, **A. B. Yildirim**, E. E. Caglar, E. Erdem, A. Erdem, and A. Dundar, "CLIPAway: Harmonizing Focused Embeddings for Removing Objects via Diffusion Models," in *Conference on Neural Information Processing Systems*, 2024. [arXiv](#). [GitHub](#). [Webpage](#).
- **A. B. Yildirim**, H. Pehlivan, and A. Dundar, "Warping the Residuals for Image Editing with StyleGAN," in *International Journal of Computer Vision*, 2024. [arXiv](#).

PUBLISHED

- **A. B. Yildirim***, H. Pehlivan*, B. B. Bilecen, and A. Dundar, "Diverse Inpainting and Editing with GAN Inversion," in *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2023, pp. 23120-23130. [Paper](#). [Webpage](#).

Work Experience

Generative DLR Lab | Bilkent University

Ankara, Turkey

RESEARCH ASSISTANT

Jan. 2022 - Present

- Working under the supervision of Asst. Prof. Dr. Aysegul Dundar.
- Conducting research focused on GAN inversion, image inpainting, and adapting 2D models for 3D texture generation.

GEM Lab | Virginia Tech

Blacksburg, VA, USA

SUMMER RESEARCH SCHOLAR

May. 2024 - Aug. 2024

- Worked on bias mitigation in diffusion models under the supervision of Asst. Prof. Dr. Pinar Yanardag.
- Experienced in the Low-Rank Adaptation method.

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MACHINE LEARNING ENGINEER, PART-TIME, REMOTE

Santa Cruz, CA, USA

Sep. 2021 - Mar. 2022

- Compared the performances of the state-of-the-art face box and facial landmark detection models.
- Analyzed the relationship between the facial landmark locations and the target cursor coordinates.
- Developed an MVP application, which allows people with motor impairments to control their computers. It estimates the pointer location based on the user's head motion by processing the webcam input via deep neural networks.

nEMESys Lab | Ozyegin University

RESEARCH INTERN, REMOTE

Istanbul, Turkey

Jul. 2021 - Sep. 2021

- Worked with Dr. Yuksel Gunal from IBM New York.
- Developed a monitoring system for Kernel-based Virtual Machines.

QuantWiFi

SOFTWARE ENGINEER, PART-TIME

Istanbul, Turkey

Dec. 2019 - Jan. 2021

- Analyzed data retrieved from access points by using machine learning algorithms.
- Integrated Apache Kafka and ClickHouse DB systems to optimize dataflow time.
- Designed a monitoring system with Prometheus and Grafana.
- Did automated testing with Selenium and load testing with Locust.
- Experienced in how to manage a Linux cloud server.

KG Technology

INTERN

Istanbul, Turkey

Jul. 2019 - Aug. 2019

- Initialized the development of Turkcell Paye Kart Backend project.
- Created reporting systems for the Omni POS Backend project.
- Tested Omni POS Android application.

Skynet Information Technologies

INTERN

Denizli, Turkey

Jun. 2018 - Jul. 2018

- Improved the GUI design of a hand terminal application's packaging system.
- Involved in the development of a Customer Relationship Management (CRM) application.

Teaching Experience

Bilkent University

TEACHING ASSISTANT

Ankara, Turkey

Jan. 2022 - Present

- **Introduction to Machine Learning (CS 464):** Assisted with preparing course materials such as homework and tutorials, conducting Google Colab and PyTorch tutorials, and advising course projects in Spring 2022, Fall 2022, Spring 2023, Fall 2023, and Fall 2024.
- **Deep Generative Networks (CS 485 & CS 585):** Assisted with advising course projects in Spring 2024.
- **Algorithms and Programming II (CS 102):** Assisted with conducting a Git tutorial, delivering lab sessions, advising course projects, and grading assignments in Spring 2023.
- **Algorithms and Programming I (CS 101):** Assisted with delivering lab sessions and grading assignments in Fall 2022.
- **Introduction to Python Programming (CS 115):** Assisted with delivering lab sessions and grading assignments in Spring 2022.

Ozyegin University

UNDERGRADUATE TEACHING ASSISTANT, REMOTE

Istanbul, Turkey

Feb. 2021 - Jun. 2021

- **Introduction to Artificial Intelligence (CS 451):** Recorded tutorial videos about the GeniusWeb platform and assisted students in developing automated negotiating agents in Spring 2021.

Ozyegin University

UNDERGRADUATE TEACHING ASSISTANT

Istanbul, Turkey

Sep. 2018 - Jun. 2019

- **Computer Programming (CS 101):** Hold weekly office hours to help students for improving their programming skills and assisted with preparing course materials, conducting tutorials, and delivering lab sessions in Fall 2018 and Spring 2019.

Awards & Certificates

2021 **1st Place Award**, Automated Negotiating Agents Competition (ANAC 2020)

TU Delft

2021 **Course Certificate**, The Complete 2021 Web Development Bootcamp

Udemy

2020 **Mastery Award**, Cloud Application Developer

IBM

2020 **Certificate of Participation**, Online Music Hackathon

Yandex

Extracurricular Activity

IEEE OzU

BOARD MEMBER

Istanbul, Turkey

Oct. 2020 - Jun. 2021

- Chaired PR subcommittee and taught them how to use Adobe Photoshop.
- Organized 34 online events, competitions, and courses.

Ozyegin Psychology Club

ACTIVE MEMBER

Istanbul, Turkey

Oct. 2017 - Jun. 2020

- Designed posters and t-shirts for the II. and III. Psychology Days.

Skills & Hobbies

Programming Python, PyTorch, Java, C, C++, JavaScript, Node.js, HTML, CSS, Bootstrap

Tools Conda, Docker, Git, Prometheus, Grafana, Photoshop

Language Turkish (Native), English (Professional Working Proficiency)

Hobbies Graphic Design, Video Editing, Table Tennis, Squash