



# Bahri Batuhan Bilecen

1st year PhD student at ETH Zurich  
bbatuhanbilecen@gmail.com

scholar page (4GUUoH4AAAAJ)   
[linkedin.com/in/bbatuhan](https://www.linkedin.com/in/bbatuhan)   
[github.com/three-bee](https://github.com/three-bee) 

## **Education**

- **ETH Zürich** Zürich, Switzerland  
*PhD in Computer Science (Informatik)* September 2025
  - **Bilkent University** Ankara, Turkey  
*MSc in Computer Engineering* September 2022 - May 2025
  - **Middle East Technical University (METU)** Ankara, Turkey  
*BSc in Electrical and Electronics Engineering* September 2018 - August 2022

# Experience

- Graduate Researcher** Zurich, Switzerland  
VLG @ ETH Zürich September 2025

  - Working on representation learning and controllable generative models, under the supervision of Prof. Siyu Tang, Prof. Bernt Schiele, and Dr. Jan Eric Lenssen.
  - Working on a ETHAR & Google collaborated project, with Dr. Vassilis Choutas, and Dr. Thabo Beeler.

**Graduate Researcher** Ankara, Turkey  
DLR @ Bilkent September 2022 - Present

  - Focused on 2D & 3D generative networks, under the supervision of Prof. Aysegul Dundar.
  - Mentored undergraduate and graduate students, graded assignments, and proctored exams. Reviewed manuscripts submitted to respectable conferences and journals (*IEEE TIP, IEEE MM, ECCV, CVPR, ICCV, NeurIPS*).

**Research Engineer** Ankara, Turkey  
ASELSAN Research September 2022 - January 2025

  - Focused on inverse problems in image restoration, compressed sensing, and statistical signal processing applications, under the supervision of Dr. Alper Gungor and Dr. Mustafa Ayazoglu.

**Part-Time Research Engineer** Ankara, Turkey  
ASELSAN Research November 2021 - August 2022

  - Developed mobile device-friendly, deep learning-based super-resolution networks. Participated in CVPR and ECCV workshops as an author.

**Undergraduate Researcher** Ankara, Turkey  
METU Center for Image Analysis (OGAM) July 2021 - June 2022

  - Conducted comparative performance analyses on frame-based and event-based optical flow algorithms, under the supervision of Prof. Aydin Alatan.
  - Performed controlled hands-on experiments on a DAVIS event camera, testing its dynamic range and latency.

**Part-Time Computer Vision Engineer** Ankara, Turkey  
STM Inc. August 2020 - April 2021

  - Worked on real-time background subtraction, video dehazing, and object-tracking solutions for unmanned aerial vehicles (UAVs).
  - Refactored C++ code for real-time optimization, which is now used in the company's UAV products.

## **Honors & Scholarships**

- Max Planck ETH Center for Learning Systems and ETH AI Center doctoral fellow (2025-2028).
  - 2025 Best CS MSc thesis award, given by the IEEE CS Turkey Branch.
  - Given merit scholarships by Bilkent University (2022-2025), METU Development Foundation (2018-2022), and The Ministry of National Education of Turkey (2010-2018).

## Selected Publications & Preprints

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- **B. Batuhan Bilecen**, Korrawe Karunratanakul, Vasileios Choutas, Thabo Beeler, Bernt Schiele, Jan Eric Lenssen, Siyu Tang. "InvAct: View and Scene-invariant Atomic Action Learning from Videos." In submission, 2026. ([🔗 project page](#))
- **A.Berke Gökmen, Yiğit Ekin, B. Batuhan Bilecen**, Ayşegül Dündar. "RoPECraft: Training-Free Motion Transfer with Trajectory-Guided Optimization on DiTs." NeurIPS 2025. ([🔗 project page](#))
- **B. Batuhan Bilecen**, Yiğit Yalın, Ning Yu, Ayşegül Dündar. "Reference-Based 3D-Aware Image Editing with Triplanes". CVPR 2025 (Spotlight). ([🔗 project page](#))
- **B. Batuhan Bilecen**, A. Berke Gökmen, Furkan Guzelant, Ayşegül Dündar. "Identity Preserving 3D Head Stylization with Multiview Score Distillation". ICCV 2025. ([🔗 project page](#))
- **B. Batuhan Bilecen, A. Berke Gökmen**, Ayşegül Dündar. "Dual Encoder GAN Inversion for High-Fidelity 3D Head Reconstruction from Single Images", NeurIPS 2024. ([🔗 project page](#))
- Alper Güngör, **B. Batuhan Bilecen**, Tolga Çukur. "Bayesian Conditioned Diffusion Models for Inverse Problems". In submission.
- Ahmet Burak Yıldırım, Hamza Pehlivan, **B. Batuhan Bilecen**, Ayşegül Dündar. "Diverse Inpainting and Editing with GAN Inversion", ICCV, 2023. ([🔗 project page](#))
- Alperen Kalay, **B. Batuhan Bilecen**, Mustafa Ayazoğlu. "Towards Clip-Free Quantized Super-Resolution Networks: How to Tame Representative Images", BMVC, 2023.
- **B. Batuhan Bilecen** and Mustafa Ayazoğlu. "Bicubic++: Slim, Slimmer, Slimmest - Designing an Industry-Grade Super-Resolution Network", NTIRE Workshop @ CVPR, 2023. (**Challenge 1st place**) ([🔗 project page](#))
- Mustafa Ayazoğlu and **B. Batuhan Bilecen**. "XCAT - Lightweight Quantized Single Image Super-Resolution Using Heterogeneous Group Convolutions and Cross Concatenation", AIM Workshop @ ECCV, 2022.
- **B. Batuhan Bilecen**, Alparslan Fişne, Mustafa Ayazoğlu. "Efficient Multi-Purpose Cross-Attention Based Image Alignment Block for Edge Devices", Embedded Vision Workshop @ CVPR, 2022.

## Projects

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- **ALKAN WASP & SAKA** March 2020 - September 2021
  - Built custom-frame and autonomous quad-copters with ALKAN UAV Team, named Wasp and Saka, as finalists of 5th and 6th TUBITAK (*The Scientific and Technological Research Council of Türkiye*) International Unmanned Aerial Vehicle Competitions, respectively. The competition was held under TEKNOFEST.
  - Learned the basics of *ArduPilot*, *MAVLink*, *DroneKit*, *ROS*, and *Gazebo*. Led the team with software setups and prepared tutorials. Modified ArduPilot C++ open source code to add our custom flight modes and controllers.
- **University Departmental Projects** 2019 - 2025
  - **Advanced Signal Processing & Data Science:** Investigated SVD and applications to classical and deep priors in inverse problems in image restoration.  ([doc link](#))
  - **Neural Networks:** Derived the backpropagation for MLPs and RNNs, and implemented from scratch in Python. ([🔗 project page](#))
  - **Computer Architecture:** Designed a fully custom 16-bit instruction set architecture and a suitable multi-cycle CPU with *Verilog*. ([🔗 project page](#))
  - **Microprocessors:** Designed a frequency-based motor controller with ARM Cortex M4. Wrote the code in *ARM Assembly*, using the Thumb 2 instruction set. ([🔗 project page](#))
  - **Logic Design:** Designed a point-of-sale device using Cyclone V FPGA. Utilized *Verilog* and wrote a VGA protocol handler from scratch. ([🔗 project page](#))

## Skills & Interests

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- **Languages:** Turkish (Native), English (Proficient), German (Beginner).
- **Hobbies:** Avid classical guitar player. Enjoys reading about architecture, mobile photography, and taking nature walks.