Bahri Batuhan Bilecen

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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 a senior student 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. Aydın 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).
- 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

- **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

- **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

- **Languages:** Turkish (Native), English (TOEFL iBT: 105/120), German (Beginner).
- **Hobbies:** Avid classical guitar player. Enjoys reading about architecture, mobile photography, and taking nature walks.