

Bariscan Kurtkaya

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INTEREST	Generative models, 2D & 3D computer vision, self-supervised representation learning	
EDUCATION	Koc University , MSc in Computer Science and Engineering, Istanbul, Turkey <i>Ranked #1 University in Turkey (QS Rankings 2023)</i> Awarded Koc AI Fellowship (1% Acceptance Rate) Research in 2D & 3D generation and editing with Prof. Yucel Yemez	2023 Fall-2025 Currently 4.00/4.00
	Yildiz Technical University , BSc in Electronics and Communication Engineering, Istanbul, Turkey Research on classifying partially distorted data by utilizing Masked AutoEncoder (MAE) architecture with Assoc. Prof. Nihan Kahraman	2017-2023 with High Honors
PUBLICATIONS - PREPRINTS	[1] <i>RAVE: Randomized Noise Shuffling for Fast and Consistent Video Editing with Diffusion Models</i> , CVPR 2024, 2024 [Paper] [Code] [Website] Ozgur Kara*, Bariscan Kurtkaya* , Hidir Yesiltepe, James M. Rehg, Pinar Yanardag [2] <i>Deep learning-based driver assistance system</i> , Electrica Journal, 23(3), 607-618, 2023. [Paper] [Code] Bariscan Kurtkaya , Arda Tezcan, Murat Taskiran	
RESEARCH EXPERIENCE	Virginia Tech, GemLab VT , Visiting Researcher Supervised by Asst. Prof. Pinar Yanardag <ul style="list-style-type: none">Conducted research on a novel, training-free, zero-shot video editing framework that integrates with pre-trained text-to-image diffusion models. (CVPR 2024)Our proposed method was evaluated as the state-of-the-art method in both qualitative and quantitative evaluations for editing while tackling the shape morphing problem which is not addressed in previous approaches.Focusing on image manipulation and fairness with diffusion models. Georgia Institute of Technology, Rehg Lab , Visiting Researcher Supervised by Prof. James M. Rehg <ul style="list-style-type: none">Proposed novel lightweight image editing approach to harness the power of pre-trained text-to-image latent diffusion models to overcome inconsistency and incoherency in video editing. (CVPR 2024)Constructed a novel and biggest dataset in the literature for a more comprehensive evaluation of video editing which includes various types of motions and editing prompts.The proposed method's space was in the top trending spaces in Hugging Face. Princeton University & Wash. U. St. Louis, McDonnell Center , Researcher Supervised by Asst. Prof. Tansu Daylan <ul style="list-style-type: none">Conducting research on images produced by James Webb Space Telescope, NIRCAM, and MIRI instruments with coronagraph filter as well as performing classification and error measuring.Trained a deep learning model in a self-supervised manner to classify observations from the JWST.Developed a pipeline to create a novel dataset by calibrating raw observations of JWST.Manuscript of the work mostly done and it is under preparation for submission. University of Milan, Laboratory of Applied Intelligent Systems , Visiting Research Intern Supervised by Prof. Alberto Borghese <ul style="list-style-type: none">Did research on the explainability of 'Capsule Networks' with the aim of improving the feature representation of images by understanding the 'dynamic routing' notion and incorporating it with CNNs and Vision Transformers.Did presentation about Capsule Networks to faculty members and Ph.D. students at the University Of Milan. Yildiz Technical University, MeDaLab , Undergraduate Research Assistant Supervised by Assoc. Prof. Nihan Kahraman & Asst. Prof. Murat Taskiran <ul style="list-style-type: none">Lead the research on Driver Assistance System which won a grant from Scientific and Technological Research Council of Turkey (TUBITAK), aiming to improve night driving safety with object detection and lane detection with deep learning and image processing.The paper, 'Deep Learning Based Driver Assistance System' was accepted from 'Electrica Journal'.	2023 Fall - Present 2023 Fall 2022 Fall - 2024 Spring 2022 Summer 2021 Fall - 2022 Spring

TEACHING EXPERIENCE & TALKS	<p>Koc University - Graduate Teaching Assistant 2023 Spring</p> <ul style="list-style-type: none"> • COMP 510 - Computer Graphics <p>Koc University - Graduate Teaching Assistant 2023 Fall</p> <ul style="list-style-type: none"> • COMP 106 - Discrete Mathematics for Computer Science and Engineering <p>Akbank MultiGroup - Speaker 2023 Spring</p> <ul style="list-style-type: none"> • I have been invited to give an advanced-level talk on deep learning based object detection models at the Akbank MultiGroup MoreThan101 seminar. <p>Tech Istanbul - Istanbul Metropolitan Municipality - Speaker 2022 Fall</p> <ul style="list-style-type: none"> • I volunteered to give a lecture to low income individuals on cutting edge deep learning algorithms to give them leg up in the industry. <p>University of Milan - Visiting Research Intern 2022 Summer</p> <ul style="list-style-type: none"> • Gave a talk about Capsule Networks to faculty and graduate students in the computer science department at the University of Milan in a Seminar.
PROFESSIONAL EXPERIENCE	<p>Ollang Media Technologies, AI Research and Development Engineer 2021-2022</p> <ul style="list-style-type: none"> • Conducted research and implementations on Ollang's Text-To-Speech and Transformer-based machine translation technology. • Was in charge of implementing the company's text-to-speech and transformer-based NLP models. Besides, I represented the Ollang AI department to Microsoft Turkey GM, CTO, and Customer Success Lead. • Established the research department for machine translation, AI dubbing, and noise cancellation research. Through this, Ollang becomes able to support consumers in more than 60 languages. <p>AGC, Software Engineer Intern 2020 Summer</p> <ul style="list-style-type: none"> • Undertook the unmasked people detection project, which includes Object Detection algorithms, due to the Covid-19. • Developed the unmasked people detection project due to the Covid-19 spread. Developed the project with YOLO algorithm core to get real-time results. <p>Yildiz Technical University IEEE CAS Team, Software Team Member 2018 - 2019</p> <ul style="list-style-type: none"> • Contributed to the Semi-Autonomous Underwater Robot implementing the software for solving computer vision tasks. • Developed the project by implementing the software for solving several computer vision tasks, including text recognition and object localization from the real-time video stream. • Awarded several times in national and international project competitions organized by scientific organizations, including TUBITAK, Turkish Defense, and MATE-ROV competition from the USA.
SCHOLARSHIPS	<ul style="list-style-type: none"> • Koc AI Fellowship (1% Acceptance Rate) 2023-2025 • 2209 TUBITAK¹ Research Project Grant Holder 2022
ACHIEVEMENTS	<ul style="list-style-type: none"> • Awarded 1st, and 3rd place as in the US-based MateRov Semi-autonomous Underwater Systems competition organized under the sponsorship of NSF, in consecutive years. • Awarded 4th place in the Undersecretariat of Defense Industry award in the Underwater Systems category. • Awarded 3rd place in the Teknofest Turkiye award in the Underwater Systems category. • Hugging Face Ambassador • Microsoft Ambassador • High Honors from Yildiz Technical University • Top 0.25% among 150 thousand - Turkish National Postgraduate Entrance Exam and Academics • Top 1% among 2 million - Turkish National University Entrance Exam
EXTRA CURRICULAR	<ul style="list-style-type: none"> • Competed in Berlin Marathon, Barcelona Half Marathon, Istanbul Marathon as fully-sponsored Nike Pacer Athlete • Runner athlete sponsored by Adidas • Pro volleyball player in Turkey Volleyball League • Volleyball player in Yildiz Technical University Team • Amateur performer (covered by top platforms such as Tepkikolik Channel - 2.54 Million Subscribers)
LANGUAGES	<ul style="list-style-type: none"> • Turkish - Native • English - TOEFL 92

¹The Scientific and Technological Research Council of Turkey