Adil Kaan Akan

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Education

Koc University **Istanbul, TR**
Ph.D. in Computer Science, GPA: 4.0, Advisor: Yucel Yemez 2022–Present
Research: Object-centric learning, Generative models, Temporal action localization, Image synthesis

Koc University **Istanbul, TR**
M.Sc. in Computer Science, GPA: 3.96, Advisor: Fatma Guney 2020–2022
Academic Excellence Award recipient
Research: Stochastic video prediction, Future instance segmentation, Trajectory Prediction
Thesis: Stochastic Future Prediction in Real World Driving Scenarios
Coursework: Deep Learning (A+), Computer Vision (A+), Computer Vision for Autonomous Driving (A+), Deep Unsupervised Learning (A+), Non-Convex Optimization for Deep Learning, Deep Multi-Task Learning and Meta Learning

Middle East Technical University, **Ankara, TR**
B. Sc. in Computer Engineering, GPA: 3.83 (ranked $5^{th}/249$ in the dept.) 2015–2020

Experience

Codeway Digital **Istanbul, TR**
AI Research Scientist Jan 2023–Present
- Specializing in generative AI research, with a primary focus on advancements in the image domain
- Implementing, optimizing, and deploying cutting-edge generative AI models, including Stable Diffusion, resulting in improved image quality and faster processing times
- Played a key role in the team effort to develop and launch the company's first proprietary in-house generative AI model, from conception to deployment

Kuartis Technology and Consulting **Ankara, TR**
Computer Vision Engineer Feb 2020–Aug 2020
- Focused on real-time object detection for self-driving cars
- Deployed real-time object detectors and trackers on NVIDIA Drive AGX platform

ImageLab, METU **Ankara, TR**
Undergraduate Researcher Sep 2018–Aug 2020
- Brain decoding with fMRI data using machine and deep learning
- Visualization of object detectors and their receptive fields
- Adversarial image generation

Computer Vision Lab, ETH Zürich **Zurich, CH**
Research Intern at Computer-assisted Applications in Medicine group (CAiM) Jun 2019–Sep 2019
- Worked on development of a Biomedical Data Analysis tool
- Analyzed high dimensional biomedical data with image processing techniques
- Designed a UI where users can use computer vision techniques without any prior knowledge
- Presented research project on Amgen Scholar's Symposium at Cambridge University

ImageLab, METU **Ankara, TR**
Resarch Intern Jun 2018–Sep 2018
- Worked on brain decoding with fMRI data using machine and deep learning techniques
- Outcome of the project was a publication

Publications

A. K. Akan, Y. Yemez, "Slot-Guided Adaptation of Pre-trained Diffusion Models for Object-Centric Learning and Compositional Generation", International Conference on Learning Representations, 2025.

Gorkay Aydemir, **A. K. Akan**, F. Guney, "ADAPT: Efficient Multi-Agent Trajectory Prediction with Adaptation", Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV), 2023.

Gorkay Aydemir, **A. K. Akan**, F. Guney, "Trajectory Forecasting on Temporal Graphs", Arxiv preprint, arXiv:2203.00255, 2022.

A. K. Akan, F. Guney, "StretchBEV: Stretching Future Instance Prediction Spatially and Temporally", In European Conference on Computer Vision (ECCV), 2022.

A. K. Akan, S. Safadoust, E. Erdem, A. Erdem, F. Guney, "Stochastic Video Prediction with Structure and Motion", Arxiv preprint, arXiv:2203.10528, 2022.

A. K. Akan, E. Erdem, A. Erdem, F. Guney, "SLAMP: Stochastic Latent Appearance and Motion Prediction", Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV), 2021.

A. K. Akan, E. Akbas, F. T. Y. Vural, "Just Noticeable Difference for Machine Perception and Generation of Regularized Adversarial Images with Minimal Perturbation", Signal, Image and Video Processing (SIVP), 2021.

A. K. Akan, M. A. Genc, F. T. Y. Vural, "Just Noticeable Difference for Machines to Generate Adversarial Images", IEEE International Conference on Image Processing (ICIP), 2020.

A. K. Akan, B. B. Kivilcim, E. Akbas, S. D. Newman, F. T. Y. Vural, "Modeling and Decoding Complex Problem Solving Process by Artificial Neural Networks" in IEEE Signal Processing and Communications Applications Conference (SIU), 2019.

Research Interests

- Object-centric Learning
- Generative models
- Stochastic future prediction
- Future instance segmentation
- Motion forecasting for autonomous driving
- Adversarial machine and deep learning

Teaching

- **Teaching Assistant** at Koc University
  - COMP100 - Introduction to Computer Science
  - COMP302 - Software Engineering
  - COMP491 - Computer Engineering Design
- **Student Teaching Assistant** at Middle East Technical University
  - CENG230 - Introduction to C Programming
  - CENG223 - Discrete Computational Structures

Skills

Languages: Python, C/C++, Julia
Libraries and Frameworks: PyTorch, Tensorflow/Keras, Scikit-Learn
Tools: Matlab, ImageJ, HDF5, LaTeX