Ali Azmoudeh

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Education

Istanbul Technical University — Istanbul, Türkiye
Ph.D. in Computer Engineering — 2025–Present

Istanbul Technical University — Istanbul, Türkiye
M.Sc. in Computer Engineering, GPA: 3.16/4.00 — 2022–2025
- Thesis: "Facial Expression Analysis For An Online Usability Evaluation Platform"

Tabriz University — Tabriz, Iran
B.Sc. in Computer Engineering, GPA: 2.7/4.00 (last 60 credit:3.12/4) — 2016–2021
- Thesis: "Facial Emotion Recognition"

National Organization for Development of Exceptional Talents(NODET) — Tabriz, Iran
in Mathematics and Phisics — 2009–2016

Experience

Istanbul Technical University — Istanbul, Türkiye
Graduate Research Assistant/SIMIT lab — February 2022-Present

Turkcell Scholarship — Istanbul, Türkiye
Graduate Research and Teaching Assistant — November 2024-Present

TUBITAK 1001 Project — Istanbul, Türkiye
Computer Vision / 221M391 - UX DIGI Project - Facial Expression Recognition based on Deep Learning — March 2022-March 2024

TUBITAK 1001 Project — Istanbul, Türkiye
Computer Vision / 121E408 - Deep Learning and Computer Vision Supported Multiple Search-Rescue UAV System — March 2024-Dec 2024

Recent Projects

- **Multimodal Idiom Understanding with Vision-Language Models (IMMCAN)** 2025
  Developed a multimodal cross-attention framework integrating visual and textual representations for idiom understanding and multimodal reasoning.
- **Vision-Language Guided Facial Expression Generation** 2026
  Explored vision-language and generative models for text-guided facial expression generation, focusing on controllable expression synthesis and synthetic data generation for facial expression recognition.
- **Conformal Prediction for Reliable Brain Tumor Segmentation** 2026
  Investigated conformal prediction and risk-controlling calibration methods for uncertainty-aware brain tumor segmentation. Evaluated reliability under in-domain and domain-shift settings, analyzing trade-offs among prediction coverage, segmentation accuracy, and false-negative risk.

Publications

[1] **A. Azmoudeh**, İ. Öksüz, and H. K. Ekenel, "Glims-mednext: An ensemble framework for brain mri segmentation in sub-saharan africa", in *Segmentation, Classification, and Synthesis for Brain Tumors and Traumatic Brain Injuries*, S. Bakas, E. Dennis, M. Astaraki, U. Baid, G. M. Conte, M. Foltyn-Dumitru, Z. Jiang, D. Labella, M.-C. Metz, U. Anazodo, M. C. de Verdier, F. Kofler, H. B. Li, M. G. Linguraru, and N. Maleki, Eds., Cham: Springer Nature Switzerland, 2026, pp. 262–273, ISBN: 978-3-032-16365-3.

[2] **A. Azmoudeh**, E. Sarıtaş, Ö. Yıldırım, and H. K. Ekenel, "On applicability of synthetic datasets for facial expression recognition", in *2026 IEEE 20th International Conference on Automatic Face and Gesture Recognition (FG)*, IEEE, 2026, pp. 1–10.

[3] B. Bilen, **A. Azmoudeh**, H. K. Ekenel, and H. Kose, "VisAffect at MWE-2026 AdMIRe 2: IMMCAN idiom multimodal cross-attention network", in *Proceedings of the 22nd Workshop on Multiword Expressions (MWE 2026)*, A. K. Ojha, V. B. Mititelu, M. Constant, I. Stoyanova, A. S. Doğruöz, and A. Rademaker, Eds., Rabat, Marocco: Association for Computational Linguistics, Mar. 2026, pp. 149–153, ISBN: 979-8-89176-363-0.

[4] L. Ciampi, **A. Azmoudeh**, E. E. Akbaba, E. Sarıtaş, Z. A. Yazıcı, H. K. Ekenel, G. Amato, and F. Falchi, "A survey on class-agnostic counting: Advancements from reference-based to open-world text-guided approaches", *Computer Vision and Image Understanding*, p. 104 703, 2026, ISSN: 1077-3142.

[5] **A. Azmoudeh**, C. A. Gumussoy, and H. K. Ekenel, "Advanced facial expression classification with cnn-transformer integration for human-computer interaction", in *2024 9th International Conference on Computer Science and Engineering (UBMK)*, IEEE, 2024, pp. 1–6.

Teaching Assistant Experience

BLG506E - Computer Vision(Voluntarily) Fall2023-2024/Istanbul Technical University

BLG317E - Database Systems Fall2024-2025/Istanbul Technical University

BLG311E - Formal Languages and Automata Spring2024-2025/Istanbul Technical University

BLG335E & BLG336E - Analysis of Algorithms I & II 2025-2026/Istanbul Technical University

Skills

- **Programming:** Python, C/C++, SQL
- **Machine Learning:** Scikit-Learn, Scikit-Image, NumPy, Pandas
- **Deep Learning:** PyTorch, TensorFlow, Vision Transformers
- **Computer Vision:** OpenCV, Facial Expression Recognition, Image Segmentation
- **LLMs & NLP:** Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Hugging Face Transformers, Prompt Engineering
- **Multimodal & Generative AI:** Vision-Language Models (VLMs), Multimodal Learning, Generative AI
- **AI-Assisted Development:** Claude Code, OpenAI Codex, ChatGPT, Gemini

Languages

- **English:** Fluent
- **Azarbaijani:** Native
- **Persian:** Native
- **Turkish:** Fluent

Licenses and Certifications

- **Machine Learning Specialization**
  Coursera, July 2022

- **Deep Learning Specialization**
  Coursera, October 2022

Selected Graduate Courses

- Computer Vision (2022)
- Deep Learning (2024)
- Natural Language Processing (2025)
- Advanced Natural Language Processing (2026)
- Generative AI (2026)