

Ali Asgarov

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RESEARCH INTERESTS

I work on computer vision and natural language processing with a focus on multimodal learning, including vision-language reasoning, cross-modal retrieval, and structured information extraction.

EDUCATION

Virginia Tech, PhD in Computer Science, GPA: 4.0/4.0

Advisor: Dr. Chris Thomas

Coursework: Multimodal Vision, Natural Language Processing, Statistics in Research.

Aug 2024 – Present

Blacksburg, VA

George Washington University, MSc in Computer Science, GPA: 3.76/4.0

Advisors: Dr. Rebecca Hwa and Dr. Samir Rustamov

Coursework: Machine Learning, Neural Networks and Deep Learning, Cloud Computing, AI, Big Data and Analytics.

Aug 2022 – Dec 2023

Washington, DC

Baku Higher Oil School, BEng in Automation, GPA: 91/100

Advisor: Dr. Ali Parsayan

Coursework: Calculus I–III, Numerical Methods, Algorithms and Data Structures I–III, Image Pattern Recognition.

Aug 2017 – May 2022

Baku, Azerbaijan

EXPERIENCE

Machine Learning Engineer, Polygraf AI

Built multimodal deepfake detection models for text, image, audio, and video by fine-tuning transformer-based models using PEFT methods (LoRA, QLoRA, prompt tuning). Achieved 92% F1 with 97% recall on high-risk content through improved data and evaluation pipelines. Deployed <100 ms inference on SageMaker, Lambda, and Vertex AI, serving 25k users.

Texas, USA | Dec 2023 – Aug 2024

Machine Learning Engineer, Revenue AI

Built ML models and data pipelines for anomaly detection, classification, forecasting, and video summarization on Azure ML and Synapse. Improved data ingestion and processing latency from 1 hour to <10 minutes and automated monitoring and retraining to keep models up to date. Led delivery of ML solutions and pipelines for partners including PepsiCo, P&G, and MuSigma.

Amsterdam, Netherlands | Feb 2022 – Aug 2022

Machine Learning Engineer, Voiceloft AI

Developed multilingual ASR models for low-resource English accents using PyTorch and Kaldi, leveraging Kaldi for data preparation and alignment and PyTorch for model training. Fine-tuned wav2vec 2.0 and XLS-R to achieve 93% accuracy (23% above baseline benchmarks). Deployed robust ASR models on Kubernetes with autoscaling and monitoring, supporting 30k users at 99.8% uptime.

Delaware, USA | Jan 2021 – Feb 2022

PUBLICATIONS

NEST Narrative Event Structures in Time for Long Video Understanding

A. Asgarov, K. Narasimhan, N.H. Sarker, S. Mallampati, A. Sivakumar, C. Thomas | Under Review, ACL ARR 2026 [paper](#)

Oct 2025

Benchmarking and Mitigating MCQA Selection Bias of Large Vision Language Models

M. Atabuzzaman, A. Asgarov, C. Thomas | **Accepted**, EMNLP 2025 Main [paper](#)

Sep 2025

SIGMA Search Augmented On Demand Knowledge Integration for Agentic Mathematical Reasoning

A. Asgarov, U. Suleymanov, A. Khatri | **Accepted**, AAAI 2026 LMReasoning [paper](#)

Aug 2025

Advancing Public Safety Video Sensemaking with Ground Robot Footage

P. Zhou, A. Asgarov, A. Hussain et al. | Under Review, CHI 2026 [paper](#)

May 2025

ENTER Event Based Interpretable Reasoning for VideoQA

H. Ayyubi, J. Liu, A. Asgarov, Z.I.A. Hakim et al. | **Spotlight**, NeurIPS 2024 MAR [paper](#)

Oct 2024

LowCLIP Adapting CLIP for Low Resource Languages in Image Retrieval

A. Asgarov, S. Rustamov | Under Review [paper](#)

June 2024

3D CNNs Based Touchless Human Machine Interaction

A. Asgarov, A. Parsayan | **ICR 2023**, Springer [paper](#)

Sep 2023

TECHNICAL SKILLS

Languages: Python, C/ C++, SQL, JavaScript, R, MATLAB

Libraries: HuggingFace, OpenCV, Pandas, NumPy,

Scikit-learn, NLTK, SpaCy

Frameworks: PyTorch, TensorFlow, FastAPI, Docker, Spark,

Hadoop

Cloud: AWS, Azure, GCP

Systems: Linux, Windows

PATENTS

US Patent App. 4883 5431 3873 2024 System and Method for Identifying and Determining a Content Source.

SERVICE, TEACHING & LANGUAGES

Teaching: CS3114 Data Structures and Algorithms (Spring 2025) and CS5644 ML with Big Data (Fall 2024)

Reviewing: ACM TIST 2025, EMNLP 2025, WACV 2026, CVPR 2026

Languages: English (fluent), Turkish (fluent), Azerbaijani (native)

HONORS AND AWARDS

2025 Pratt Fellowship, Virginia Tech

2023 State Scholarship for Azerbaijani Youth Abroad

2020–2022, 1st Place (3×) National AI Competition

2020, Top 15 World Robot Olympiad, Hungary

2019, Gold Medal, National Robot Olympiad, Azerbaijan

2018 Presidential Scholarship

2017 University Entrance Exam 690/700

2017 High School Graduation with Gold Medal (Top 0.1%)