

Baktash Ansari

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EDUCATION

Ph.D., Computer Science & Engineering

Aug 2026 – Expected 2030

Michigan State University, East Lansing, MI · HLR Lab (Heterogeneous Learning and Reasoning) · Advisor: Prof. Parisa Kordjamshidi

M.S., Computer Science & Software Engineering

Sep 2025 – Jun 2026

University of Washington, Bothell, WA · Specialization: AI + Machine Learning

GPA: 4.0 / 4.0

B.S., Computer Engineering

Oct 2020 – Jul 2024

Iran University of Science & Technology, Tehran · Specialization: AI + Machine Learning

GPA: 3.92 / 4.0

RESEARCH INTERESTS

Natural Language Processing & Large Language Models · Vision-Language Modeling · Neuro-Symbolic Reasoning · LLM Reasoning & Theory of Mind · Information Retrieval · Medical Imaging

PUBLICATIONS

- **Ansari B.**, Dewan M., Mashhadi A. “Reasoning Well, Judging Poorly: Theory of Mind Scaffolding Exposes the Limits of LLM Persuasion Judges” — Accepted at **Findings of EMNLP 2026**.
- **Ansari B.**, Mashhadi A. “TopicTune: A Topic Alignment Approach to Improve LLMs Reasoning on Social Questions” — Accepted at **ICTIR 2026**.
- **Ansari B.**, Dewan M., Agarwal V., Mashhadi A. “Patterns of Persuasion Through the Lens of Theory of Mind: Value Alignment Analysis in Online Deliberation” — Accepted at the SocialLLM Workshop, **ICWSM 2026**.
- **Ansari B.**, Martin E., Mashhadi A. “ToxiTwitch: Toward Emote-Aware Hybrid Moderation for Live Streaming Platforms” — Accepted at the DHOW-MiLLA Workshop, **The Web Conference 2026**.
- Rostamkhani M., **Ansari B.**, Sabzevari H., et al. “Illusory VQA: Benchmarking and Enhancing Multimodal Models on Visual Illusions” — Accepted at the MAR Workshop, **CVPR 2025**; earlier Spotlight at the MAR Workshop, **NeurIPS 2024**.
- **Ansari B.**, Rostamkhani M., Eetemadi S. “BAMO at SemEval-2024 Task 9: BRAINTEASER” — Proceedings of the 18th International Workshop on Semantic Evaluation (SemEval-2024), **NAACL 2024**.
- Azadi A., **Ansari B.**, Zamani S. “Bilingual Sexism Classification: Fine-Tuned XLM-RoBERTa and GPT-3.5 Few-Shot Learning” — Proceedings of **CLEF 2024**, EXIST Lab.

RESEARCH EXPERIENCE

Ph.D. Researcher — HLR Lab, Michigan State University

Aug 2025 – Present

Remote research assistant Aug 2025 – Aug 2026; in residence as a doctoral student since Aug 2026.

- Designed a **Neuro-Symbolic Agentic Pipeline** integrating symbolic reasoning with LLMs to solve **abductive reasoning** tasks on complex visual datasets.
- Trained **CLIP** models using contrastive learning for improved visual-text alignment in reasoning systems.

Graduate Research Assistant — Mashhadi Lab, UW Bothell

Mar 2025 – Jun 2026

- Fine-tuned **information retrieval** models (Contriever) with **TopicTune**, boosting Llama and GPT accuracy on open-domain Reddit and Lemmy data by **10%**.
- Applied **reinforcement learning** with **LLM feedback** for retrieval optimization and generation.
- Implemented **prompt-tuning** on DeepSeek and Llama for **toxicity detection** in Twitch chat.
- Researched **content moderation** and **Theory of Mind reasoning** in LLMs across Reddit and Twitch domains.
- Built **multi-GPU PyTorch pipelines** for inference, analysis, and evaluation using Python, NumPy, and Pandas.

Research Assistant — Iran University of Science & Technology

Jul 2023 – Aug 2024

- Designed **3 pipelines** to evaluate LLMs and Transformer-based models on the **SemEval-2024** Task 9 dataset, including Multi-Agent Debate, Chain-of-Thought prompting, and fine-tuning, achieving **85% accuracy**.
- Developed methods for **sexism detection** through prompt engineering and fine-tuning transformer models, placing **4th** in Task 1 and **2nd** in Task 2 at **CLEF 2024 EXIST Lab**.
- Generated **4 image datasets** with **4,000+ samples each** using Stable Diffusion to benchmark and fine-tune 3 multimodal models and 1 generative model (Gemini, GPT-4o, CLIP, BLIP) with PyTorch and Hugging Face, achieving **10%+ improvement** through novel image-processing methods.

TEACHING EXPERIENCE

Teaching Assistant — Iran University of Science & Technology, Tehran

Fall 2021 – Spring 2024

Assisted in 12 course sections under multiple professors: Natural Language Processing (Prof. Davoodabadi); Introduction to Artificial Intelligence (Prof. Mohammadi); Algorithms Design & Analysis (Prof. Ghayour Baghbani; Prof. Malekimaajd); Data Structures (Prof. Rahmani); Systems Design & Analysis / Software Engineering I (Prof. Ashtiani); Introduction to Competitive Programming (Prof.

Eetemadi); Logical Circuits (Prof. Hosseini Monazzah); Discrete Mathematics (Prof. Hakami); Fundamentals of Computer Programming in C++ (Prof. Ashtiani; Prof. Entezari Maleki) and Python (Prof. Rafiei).

Python / C++ Programming Instructor — Tehran

Jul 2021 – Sep 2021

- Taught basic and advanced Python and C++ programming to over **30 middle and high school students** using interactive examples and storytelling.
- Designed and delivered lessons on algorithmic thinking to improve students' problem-solving and coding skills.

SELECTED PROJECTS

Hamming Embedding and Weak Geometric Consistency for Image Search

github.com/baktash81/he-image-search

- Implemented Bag-of-Features with Hamming Embedding and Weak Geometric Consistency (WGC) in C++, based on Jegou et al. (2008); pipeline includes SIFT extraction, k-means visual vocabulary, TF-IDF weighting, and 64-bit Hamming signatures.
- Achieved **63.46% mAP** on the Oxford dataset with HE+WGC, a **31% improvement** over the baseline BoF approach.
- Integrated Hough voting with angle/scale priors for geometric verification and built demo visualizations comparing all method variants.

Movie Revenue Prediction — End-to-End ML Pipeline

- Built an end-to-end pipeline predicting box-office revenue from TMDb data with **60+ engineered features** including genre encoding, director star power, and temporal interactions.
- Trained and evaluated **17 models** spanning linear, tree-based, SVM, and neural architectures using 5-fold cross-validation.
- Best performance with Extra Trees Regressor ($R^2 = 0.738$, MAE = \$38.7M), outperforming XGBoost, Gradient Boosting, and deep neural networks.

Persian Emotion Detection — ArmanEmo Dataset

- Preprocessed and cleaned the ArmanEmo dataset with tokenization, lemmatization, and normalization.
- Fine-tuned **ParsBERT** and **XLM-RoBERTa Large**; published trained models on Hugging Face.
- Conducted multimodal classification on the MVSA dataset, extracting ResNet features and training an MLP model.

TrekDestiny — Travel Platform Web Application

- Led a team of three to build a travel platform with authentication, real-time chat, notifications, and blog sections.
- Developed the front end in React and Tailwind CSS; managed CI/CD and guided less experienced teammates.
- Oversaw development with Scrum, running sprints, stand-ups, and retrospectives.

Age-Rating Movie Classification from Subtitles

- Developed a language model classifying movie subtitles by age rating to support content filtering for families and producers.
- Collected and cleaned noisy data by crawling IMDb and OpenSubtitles; scoped the project independently.
- Implemented preprocessing, feature extraction, and training on multilingual data (English and Persian).

TECHNICAL SKILLS

Languages: Python, C++, C, Java, JavaScript, SQL, C#, HTML/CSS, Bash

ML / AI: PyTorch, TensorFlow, HuggingFace, CUDA, NLP, Computer Vision, Reinforcement Learning, Generative AI, Fine-Tuning, Prompt Tuning, Neuro-Symbolic Reasoning, Contrastive Learning, Few-Shot Learning, Information Retrieval

Tools & Data: NumPy, Pandas, OpenCV, Scikit-learn, Matplotlib, Git, Linux, SLURM, Jupyter, Kaggle

Relevant Coursework: Algorithm Analysis, Data Structures, Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Artificial Intelligence, Systems Programming, Computer Architecture, Probability & Statistics

HONORS & AWARDS

NSF NRT WaterCube Fellowship

2026

Michigan State University.

Top Student, Department of Computer Engineering — IUST

2024

Ranked 1st among 102 same-year students in the Department of Computer Engineering with a 3.92 GPA.

National Universities Entrance Exam (Konkur), Iran

2020

Ranked 523rd (top 0.3%) out of over 155,000 participants nationwide.