

ARSHIA HEMMAT

✉ Email —  LinkedIn —  GitHub —  Website —  Oxford, UK

EDUCATION

University of Oxford

Oct. 2025 – Present

MSc in Advanced Computer Science

Current GPA: 82 out of 100

Research focus: Uncertainty and Hallucination, AI for Science, Safety in Agentic LLM

University of Isfahan

Sept. 2019 – Jul. 2024

BSc in Computer Engineering

First Class Honours

Thesis: Graph Fusion in Multi-modal Networks with Zero-shot Evaluation.

TECHNICAL SKILLS

Frameworks/Libraries: PyTorch, JAX, Transformers Library, OpenCV, Scikit-learn, NumPy, Pandas.

Specialisations : Safety in AI, 3D Computer Vision, Diffusion Models, GNNs, Uncertainty Calibration.

Tools/DevOps: Git, Linux, Slurm, Weights & Biases (W&B).

SELECTED PUBLICATIONS

Full publication list: [\[Google Scholar\]](#)

[1] **Hidden in Plain Sight: Evaluating Abstract Shape Recognition in Vision–Language Models.**

A. Hemmat, A. Davies, T. Lamb, J. Yuan, P. Torr, A. Khakzar, F. Pinto.

NeurIPS 2024 (poster). [\[Link\]](#)

[2] **Research Directions for Using LLM in Software Requirement Engineering: A Systematic Review.**

A. Hemmat, M. Sharbaf, S. Rahimi, K. Lano, S. Y. Tehrani.

Frontiers in Computer Science 2025

[3] **VAGUE-Gate: Plug-and-Play Local-Privacy Shield for Retrieval-Augmented Generation.**

A. Hemmat, M. Moqadas, A. Mamanpoosh, A. Rismanchian, A. Fatemi.

IJCNLP-AACL 2025. [\[Link\]](#)

[4] **3D-Guided Scalable Flow Matching for Generating Volumetric Tissue Spatial Transcriptomics from Serial Histology.**

M. V. Sanian, **A. Hemmat**, A. Vahidi, J. Maaskola, ... , O. Bayraktar, L. Paavolainen, M. Lotfollahi.

CVPR 2026 (submitted), Co-first author. [\[Link\]](#)

[5] **TDGNet: Hallucination Detection in Diffusion Language Models via Temporal Dynamic Graphs.**

A. Hemmat, P. Torr, Y. Chen, J. Yu.

ICML 2026 (submitted). [\[Link\]](#)

EXPERIENCE

Graduate Researcher, Torr Vision Group

Aug. 2025 – Present

University of Oxford

Oxford, UK

- Developed TDGNet, a novel framework for hallucination detection in diffusion language models by modeling internal states via temporal dynamic graphs (Submitted to the ICML 2026)
- Enhanced model reliability and robustness using safety protocols in multi-agentic systems and monitoring systems (part of MSc thesis).

Visiting Researcher, Computational Single-Cell Genomics

Aug. 2025 – Present

*Wellcome Sanger Institute, University of Cambridge**Cambridge, UK*

- Architected a 3D-aware transformer imputation module (SwinTransformer + ControlNet) that outperformed SOTA methods on three benchmark datasets.
- Integrated modules into scalable workflows for automated training and inference, optimizing for large-scale volumetric experimentation.

Graduate Researcher, OATML and DVPS

Nov. 2025 – Jan. 2026

*University of Oxford**Oxford, UK*

- Hallucination detection in Remote Sensing Images within the Environment section of the DVPS Project.
- Developed uncertainty-aware diagnostics and mitigation strategies to improve reliability in geo-intelligence foundation models via uncertainty propagation analysis.

Graduate Researcher, Video VLM & Generative Safety

Sept. 2024 – Feb. 2025

*Torr Vision Group, University of Oxford**Oxford, UK*

- Quantified memorization risks in diffusion models by designing automated training data extraction and leakage analysis pipelines.
- Proposed robust benchmark splits to isolate reasoning failures from dataset artifacts, improving diagnostic accuracy for video-capable models.

Data Team Course Instructor

Jun. 2024 – Oct. 2024

*Quera**Tehran, IR*

- Architected production-level curriculum for LLMs, NLP, and Deep Learning for Iran's largest Computer Science learning platform.
- Led development of technical modules focused on real-world application of Large Language Models and Generative AI.

Research Intern, Medical Imaging

Feb. 2023 – Mar. 2024

*CAMP Chair, TU Munich (TUM)**Munich, Germany*

- Optimized 3D vessel segmentation using a GNN and Fourier-based framework to preserve vascular continuity in volumetric imaging.
- Benchmarked Out-of-Distribution (OoD) generalization for contrastive models like CLIP to ensure stability across varying medical scanner protocols.

LEADERSHIP & AWARDS

Founder & Chairman, University of Isfahan AI Community: Established the university's first AI research hub.

Organizer, TEDx University of Isfahan: Led a team of **100+ members** to orchestrate the year's largest TEDx event in Iran (2nd, 3rd, & 5th editions).

Chairman, Rasta Association (Sharif Univ. of Tech): Managed **50+ students** to generate revenue streams while delivering STEM education to underprivileged youth.

2nd Place, National Data Science Competition (Among 200+ teams), Isfahan, 2022.

22nd Place, ICPC Asia Tehran Programming Contest, 2020.

Top 5% Academic Ranking, University of Isfahan (BSc Computer Engineering).