ARYAN YAZDAN PARAST

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EDUCATION

University of Melbourne Oct. 2024 - Present
Doctor of Philosophy
Thesis: Improving Robustness of Machine Perception by Intervention
Supervisors: Dr. Naveed Akhtar, Dr. Basim Azam

Sharif University of Technology Sep. 2019 - February 2024
Bachelor of Science in Computer Engineering
Cumulative GPA: **19.06/20**
Supervisor: Dr. Mahdieh Soleymani Baghshah

Allameh Helli3 High School (NODET) Sep. 2016 - July 2019
Diploma in Physics and Mathematics Discipline
Overall GPA: **19.84/20**

RESEARCH INTERESTS

- Computer Vision
- Large Vision Language Models
- Spurious Correlations
- Out-of-distribution Generalization

PUBLICATIONS

- **A. Yazdan Parast***, P. Hosseini*, H. Asadollahzadeh, A. Soltani Moakhar, B. Azam, S. Feizi, N. Akhtar. GHOST: Hallucination-Inducing Image Generation for Multimodal LLMs, arXiv Preprint.
- **A. Yazdan Parast**, B. Azam, N. Akhtar. DDB: Diffusion Driven Balancing to Address Spurious Correlations, ICCV 2025. Project Page Link.
- F. Hosseini Noohdani, P. Hosseini*, **A. Yazdan Parast***, H. Yaghoubi Araghi, M. Soleymani Baghshah. Decompose-and-Compose: A Compositional Approach to Mitigating Spurious Correlation, CVPR 2024. Project Page Link.

RESEARCH EXPERIENCE

Graduate Research Assistant — *The University of Melbourne*
October 2024
Supervisors: *Dr. Naveed Akhtar, Dr. Basim Azam*

· Enhanced the robustness of deep learning models by leveraging diffusion models for data augmentation. Utilized textual inversion to capture and learn image-specific features, enabling the generation of augmented samples with accurate features.

B.Sc. Thesis — *Investigating Effects of Masking the Inputs on the Performance of Vision Transformers, Sharif University of Technology*
September 2023 - February 2024
Supervisor: *Dr. Mahdieh Soleymani*

· Improving performance and reducing computational costs of vision transformers by eliminating specified input tokens.

Research Assistant — *ML lab, Sharif University of Technology*
May 2023 - February 2024
Supervisors: *Dr. Mahdieh Soleymani*

· Attempted to mitigate spurious correlations by last layer retraining on masked images. Evaluated different approaches such as gradient masking to find spurious parts of an image and mask them.

Research Assistant— *Sharif University of Technology*
September 2023 - February 2024
Supervisor: *Dr. Maryam Ramezani*

· Improving an LSTM model performance utilizing additional data from a traditional AI model.

TEACHING EXPERIENCE

Teaching Assistant, Department of Computer Engineering, Sharif University of Technology

- **Linear Algebra** [Spring 2023, Fall 2023]
  Designing homework, Designing the course project, Evaluating exams, Evaluating homework, Evaluating the course project
- **Numerical Computation** [Fall 2022, Spring 2023]
  Providing course lectures power point slides, Designing homework, Evaluating homework
- **Data Structures and Algorithms** [Falls 2021 and Spring 2022]
  Head TA in Quizzes Section, Designing and taking quizzes, Evaluating quizzes
- **Programming languages** [Spring 2022, Fall 2023]
  Designing homework, Evaluating homework, Designing quizzes, Evaluating quizzes
- **Digital Design** [Fall 2021 and Spring 2023]
  Designing homework, Evaluating homework
- **Fundamentals of Programming in C** [Spring 2021]
  Head TA in Homework Section, Designing homework, Evaluating homework

TECHNICAL SKILLS

Programming	Python, Java, SQL, C/C++, HTML/CSS, Assembly
Frameworks and Libraries	Numpy, PyTorch, Tensorflow, Scikit-learn, Pandas, Matplotlib, Simpy, Django
Typesetting	LaTeX, Git

LANGUAGES

Persian: Mother tongue

English: Professional proficiency

TOEFL iBT (Oct. 7, 2023): **103/120** (R30/L29/S23/W21)

HONORS & AWARDS

- Ranked $\mathbf{181^{th}}$ among 160,000 students taking part in Iran National University Entrance Exam (Konkour) in Mathematics/Physics Branch, 2019.
- Membership in "National Organization for Development of Exceptional Talents" (NODET) 2013-2019