Mohammad Reza Taesiri

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EDUCATION

University of Alberta, Edmonton, Alberta, Canada
- Ph.D. in Software Engineering and Intelligent Systems   Sep 2021 – Present

Sharif University of Technology, Tehran, Tehran, Iran
- M.Sc. in Computer Software Engineering   Sep 2015 – Sep 2017

Amirkabir University of Technology, Tehran, Tehran, Iran
- B.Sc. in Pure Mathematics   Sep 2009 – Jun 2015

RESEARCH EXPERIENCE

La Forge, Ubisoft Montreal
- Research and Development Intern   Aug 2022 – Dec 2022
  - Supervisor: Dr. Sarra Habchi
  - Focus: Robustness of Foundation Models, Image and Video Retrieval

ASGAARD Lab, University of Alberta
- Graduate Research Assistant   Sep 2021 – Present
  - Supervisor: Prof. Cor-Paul Bezemer
  - Focus: Foundation Models for Video Games

Nguyen Lab, Auburn University
- Visiting Researcher   Mar 2021 – Present
  - Supervisor: Prof. Anh Nguyen
  - Focus: Robust and Explainable Machine Learning

PUBLICATIONS

CONFERENCES

[1] Mohammad Reza Taesiri, Giang Nguyen, Sarra Habchi, Cor-Paul Bezemer, and Anh Nguyen – "ImageNet-Hard: The Hardest Images Remaining from a Study of the Power of Zoom and Spatial Biases in Image Classification" in *Thirty-Seventh Annual Conference on Neural Information Processing Systems (NeurIPS 2023)*

[2] Mohammad Reza Taesiri*, Giang Nguyen*, and Anh Nguyen (* Denotes Equal Contribution) – "Visual correspondence-based explanations improve AI robustness and human-AI team accuracy." in *Thirty-sixth Annual Conference on Neural Information Processing Systems (NeurIPS 2022)*

[3] Finlay Macklon, Mohammad Reza Taesiri, Markos Viggiato, Stefan Antoszko, Natalia Romanova, Dale Paas, and Cor-Paul Bezemer – "Automatically Detecting Visual Bugs in HTML5 <canvas> Games." in *International Conference on Automated Software Engineering (ASE 2022)*

[4] Mohammad Reza Taesiri, Finlay Macklon, and Cor-Paul Bezemer – "CLIP meets GamePhysics: Towards bug identification in gameplay videos using zero-shot transfer learning." in *The Mining Software Repositories conference (MSR 2022)*

PREPRINTS

[6] Mohammad Reza Taesiri, Tianjun Feng, Anh Nguyen and Cor-Paul Bezemer – "GlitchBench: Can large multimodal models detect video game glitches?" in *Arxiv Preprint*

[7] Mohammad Reza Taesiri, Finlay Macklon, Yihe Wang, Hengshuo Shen, and Cor-Paul Bezemer – "Large Language Models are Pretty Good Zero-Shot Video Game Bug Detectors." in *Arxiv Preprint*

[8] MohammadAmin Fazli*, Ali Owfi*, and Mohammad Reza Taesiri* (* Denotes Equal Contribution) – "A Data-Driven Analysis on Nft Auctions: Assessment, Opportunities and Fraudulent Activities." in *Arxiv Preprint*

JOURNALS

[9] Mohammad Reza Taesiri, Finlay Macklon, Sarra Habchi, and Cor-Paul Bezemer – "Searching bug instances in gameplay video repositories" in *IEEE Transactions on Games (ToG 2024)*

[10]   Mohammad Reza Taesiri, Moslem Habibi and MohammadAmin Fazli – "A Video Game Testing Method Utilizing Deep Learning" in *Journal on Computer Science and Engineering (JCSE 2021)*

AWARDS & SCHOLARSHIPS	
▪ Alberta Graduate Excellence Scholarship (AGES), 2023	
▪ Upper Bound Talent Bursary, 2023	
▪ NeurIPS Scholar Award, 2022	
	2022
▪ Graduate Research Assistant, University of Alberta	2021
▪ Ranked 10th, National entrance exam in Software Engineering, Iran	2015
▪ Ranked 11th, National entrance exam in Algorithms and Theory of Computation, Iran	2015

INVITED TALKS & ACTIVITIES

Foundation Models for Video Game Quality Assurance, 2024
Honours Seminar, University of Alberta, Edmonton, Canada
A Brief Tutorial on Large Language Models, 2023
ISAIC, University of Alberta, Edmonton, Canada
Zoom is what you need: An empirical study of the power of zoom and spatial biases in image classification, 2023
Samsung SAIT AI Lab (SAIL), Montreal, Québec, Canada

PROJECTS & DATASETS

GlitchBench, Hugging Face Datasets
▪ I introduced a new benchmarking dataset to evaluate large multimodal models on the task of video game bug detection.   Dec 2023
ImageNet-Hard, Hugging Face Datasets
▪ Introduced a challenging dataset to rigorously assess the robustness of diverse vision models. Apr 2023
Claude Reads ArXiv, Hugging Face Space
▪ Harnessing the power of the *Claude-v1.3-100k* to answer questions about academic papers.   Apr 2023
Intelligent Image Captioner, Hugging Face Spaces
▪ Empowering ChatGPT with the ability to see and interpret images, using Detic.   Dec 2022
CLIP Meets GamePhysics, Hugging Face Spaces
▪ Built a CLIP-based video retrieval system for video games.   Mar 2022
The GamePhysics Dataset, Hugging Face Datasets
▪ A dataset of video game bugs   Jan 2022

OTHER WORK EXPERIENCE

3-Dish, Karaj, Tehran, Iran
▪ Co-Founder   2019 – 2021
  • Successfully developed a unique culinary experience in the Metaverse, replicating popular dishes with an authentic appearance.
Fanafzar Sharif Game Studio, Tehran, Tehran, Iran
▪ Summer Intern - Game Development   Jun 2014 – Sep 2014
  • Developed in-game level editors for mobile platforms, enhancing user experience and engagement.
  • Successfully created a proof of concept using the Unity game engine, showcasing the functionality and potential of the level editor.

TEACHING EXPERIENCE

University of Alberta, Edmonton, Alberta, Canada
▪ Teaching Assistant   Sep 2023 – Present
  • Serving as a teacher assistant for multiple courses
  • ECE 447 - Data Analysis and Machine Learning for Engineers - Winter 2024
  • ECE 342 - Probability for Electrical and Computer Engineers - Winter 2024
  • ECE 325 - Object-Oriented Software Design - Fall 2023
  • ECE 321 - Software Requirements Engineering - Fall 2023
Sharif University of Technology, Tehran, Tehran, Iran
▪ Teaching Assistant - Head   Jan 2016 – Jun 2016
  • Led a team of teaching assistants for the Discrete-Event Simulation course
  • Collaborated with the professor to develop lesson plans, assess students' performance

CERTIFICATES & ONLINE COURSES	
▪ Deep Reinforcement Learning Nanodegree, Udacity	2020
▪ Reinforcement Learning Specialization, Coursera, University of Alberta	2020
▪ Computational Neuroscience, Coursera, University of Washington	2020

- Deep Learning Specialization, Coursera, DeepLearning.AI   2018
- Image and video processing, Coursera, Duke University   2014
- Heterogeneous Parallel Programming, Coursera, University of Illinois Urbana-Champaign   2014
- Programming Languages, University of Washington   2014

SKILLS

Machine Learning: PyTorch, Keras, JAX
Programming: Python, C#, Java, C/C++, Swift, Objective-C, Scheme, Racket, ML, CUDA
Other Technologies: Docker and Kubernetes, NodeJS, MongoDB, Neo4j, Wolfram Mathematica
Game Engines: Unity, Unreal Engine

HOBBIES

Photogrammetry, Digital Photography, Hiking

REFERENCES

- **Dr. Cor-Paul Bezemer**
  Associate Professor, University of Alberta
  bezemer@ualberta.ca

- **Dr. Anh Nguyen**
  Assistant Professor, Auburn University
  anhnguyen@auburn.edu

- **Dr. Marek Reformat**
  Professor, University of Alberta
  reformat@ualberta.ca

[*CV compiled on 2024-01-17*]