

Omid Memarrast

☎ +1 312 539 5476 | ✉ memarrast@gmail.com | 🔗 LinkedIn | 🐙 GitHub | 🌐 Website | 📍 Chicago, IL | 🇺🇸 US Permanent Resident

EDUCATION

University of Illinois Chicago, Department of Computer Science

Doctor of Philosophy in Computer Science; GPA: 4.00/4.00

Aug 2023

DOCTORAL THESIS: (Advisor: [Brian D. Ziebart](#))

Distributionally Robust and Specification Robust Fairness for Machine Learning

Master of Science in Computer Science

Aug 2021

University of Tehran, Electrical and Computer Engineering Department

Bachelor of Science in Software Engineering

Sep 2012

RESEARCH INTERESTS

Fairness in ML, Responsible Generative AI, Robustness in LLMs, Recommender Systems, Computer Vision

EXPERIENCE

University of Illinois Chicago

Chicago, IL

Adjunct Lecturer

Aug 2023 – Present

- Teaching Database Systems to 50 undergrad/grad students covering ER-Models, SQL, and AWS Data Engineering where they learn to work with Amazon S3, Athena, AWS Glue, Amazon Redshift, and EMR.

Research Assistant

Jan 2019 – Aug 2023

- Prototyped and designed the architecture of *superhuman fair* model for Gen AI and LLMs. (in progress)
- Implemented *superhuman fair classifier* that re-casts fair ML as an imitation learning task and seeks to simultaneously outperform human decisions on multiple performance and fairness measures. ([ICML 2023](#))
- Developed *fair* and *robust* decision-making algorithms by utilizing a *distributionally robust learning* framework. Through a *min-max game* between a predictor and an adversary, we built fair and robust methods for ranking ([PAKDD 23](#)), classification ([AAAI 2020](#)) and addressing covariate shift ([AAAI 2021](#)).

LinkedIn Corporation

Sunnyvale, CA

Machine Learning Research Intern

June 2020 – Sep 2020

- Developed an end-to-end pipeline for the *recommendation system* of PYMK (People You May Know) ensuring fairness of exposure for both source and destination members.
- Developed the framework at the scale using Apache Spark (Scala) and Hadoop. Mentor: Kinjal Basu.

Morningstar, Inc.

Chicago, IL

Data Science Intern

June 2018 – Sep 2018

- Built a document classification system using NLP techniques. Implemented an end-to-end pipeline using LSTM, GRU, Glove Embedding, AWS, Keras, Scikit-learn, NumPy, and Pandas. Mentor: Ehsan Behnam.

MITRC Startup

Tehran, Iran

Software Engineer, Machine Learning

Jan 2014 – March 2016

- Developed pipelines for NLP tasks, including tokenization, chunking, and POS tagging at scale, using Maven, Java EE, Scrum, Git, and Spark techniques and libraries. Additionally, I had the responsibility of being the Scrum Master for the team working with JIRA.
- Built an information extraction system to extract existing relations from text using a bootstrap methodology by augmenting seeds, relations, and patterns in the system.

SKILLS

Programming: C/C++, Java, Python, JavaScript, MySQL, MATLAB, R, Scala

Libraries: PyTorch, Scikit-Learn, Keras, TensorFlow, JAX, NumPy, Pandas, Matplotlib, Seaborn

Frameworks: JIRA, AWS, A/B Testing, Hadoop, Spark, Git, HuggingFace

- [C4] **Omid Memarrast**, Linh Vu, Brian Ziebart. [Superhuman Fairness](#). *International Conference on Machine Learning (ICML)*. 2023. (27.9 % acceptance rate) [[page](#), [code](#), [slides](#), [poster](#)]
- [C3] **Omid Memarrast**, Ashkan Rezaei, Rizal Fathony, Brian Ziebart. [Fairness for Robust Learning to Rank](#). *Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*. 2023. (17.3 % acceptance rate)
- [C2] Ashkan Rezaei, Anqi Liu, **Omid Memarrast**, Brian Ziebart. [Robust Fairness under Covariate Shift](#). *AAAI Conference on Artificial Intelligence (AAAI)*. 2021. (21.4 % acceptance rate)
- [C1] Ashkan Rezaei, Rizal Fathony, **Omid Memarrast**, Brian Ziebart. [Fairness for Robust Log Loss Classification](#). *AAAI Conference on Artificial Intelligence (AAAI)*. 2020. (20.6 % acceptance rate)
- [J1] Daniel Khashabi, Arman Cohan, Siamak Shakeri, Pedram Hosseini, Pouya Pezeshkpour, Malihe Alikhani, Moin Aminnaseri, Marzieh Bitaab, Faeze Brahman, Sarik Ghazarian, Mozhdeh Gheini, Arman Kabiri, Rabeeh Karimi Mahabagdi, **Omid Memarrast**, et al. [ParsiNLU: A Suite of Language Understanding Challenges for Persian](#). *Transactions of the Association for Computational Linguistics (TACL)*. 2021.

WORKSHOPS AND PRESENTATIONS

- [W4] **Omid Memarrast**, Linh Vu, Brian Ziebart. [Superhuman Fairness via Subdominance Minimization](#). *ICLR Workshop on Pitfalls of limited data and computation for Trustworthy ML*. 2023.
- [W3] **Omid Memarrast**, Ashkan Rezaei, Rizal Fathony, Brian Ziebart. [Fairness for Robust Learning to Rank](#). *NeurIPS Workshop: Algorithmic Fairness through the Lens of Causality and Robustness*. 2021.
- [W2] Ashkan Rezaei, Anqi Liu, **Omid Memarrast**, Brian Ziebart. [Robust Fairness under Covariate Shift](#). *NeurIPS Workshop: Algorithmic Fairness through the Lens of Causality and Interpretability*. 2020.
- [W1] Ashkan Rezaei*, Rizal Fathony*, **Omid Memarrast**, Brian Ziebart. [Fair logistic regression: An adversarial perspective..](#) *NeurIPS Workshop on Machine Learning with Guarantees*. 2019.

SERVICE

Reviewer: ICLR 2024, ICML 2022, NeurIPS 2023, NeurIPS 2022, NeurIPS 2021

Program Committee: IJCAI 2022, IJCAI 2021, ACL-SRW 2019-2020, EACL 2021, NAACL-SRW 2021

TEACHING EXPERIENCE

Primary Instructor: Database Systems (IDS 410), U of Illinois Chicago Fall 2023

Teaching Assistant:

- Computer Algorithms (CS 401) Fall 2022
- Advanced Machine Learning (CS 512) Spring 2022
- Programming Practicum[C,C++,Java] (CS 211) Sp 2017, Fa 2017, Sp 2018, Fa 2018, Sp 2019, Fa 2019, Su 2022

SELECTED PROJECTS

Fine-tune LLMs to Solve Sequence-to-Sequence Learning Problems | [GitHub](#)

- Implemented models to predict the SCAN (commands, actions) dataset. Applied a hierarchical approach to seq-to-seq learning with latent neural grammars. Fine-tuned an LLM (T5) on the dataset.

Twitter Sentiment Analysis using Machine Learning and Deep Learning Techniques | [GitHub](#), [Report](#)

- Implemented various ML (SVM, Logistic Regression, Multinomial Naive Bayes, XGBoost) and Deep Learning (CNN, LSTM, Bi-LSTM) methods to perform sentiment analysis over a corpus of tweets.

Fine Grained Image Classification Using Deep Convolutional Neural Networks | [Report](#)

- Trained four versions of **ResNet** and two versions of **DenseNet** (each with different depths) for the task of recognizing museum artwork attributes.

Graphical Models for Inference in a Bayesian Network | [GitHub](#)

- Implemented CRF augmented with CNN in AlexNet's architecture for structured output prediction.

AWARDS & ACHIEVEMENTS

Graduate Student Award Scholarship (5000 USD) at U of Illinois Chicago.

Jan 2017 – Dec 2017