Samin Mahdizadeh Sani

Google Scholar
github.com/samin-mehdizadeh

samin.mahdizadeh@gmail.com
(+1) 226-606-5372

Education

- **University of Tehran** — Tehran, Iran
  Master of Computer Engineering - Artificial Intelligence; GPA: 19.76/20 (4.0/4.0) — *Sep 2021 - Feb 2024*
  advisor: *Prof. Yadollah Yaghoobzadeh*
- **University of Tehran** — Tehran, Iran
  Bachelor of Computer Engineering; GPA: 18.01/20 (3.72/4) — *Sep 2017 - Sep 2021*

Research Interest

- Natural Language Processing
- Adversarial Robustness
- Generative Models

Publications

- **ImagenWorld: Stress-Testing Image Generation Models with Explainable Human Evaluation on Open-ended Real-World Tasks**
  Published in ICLR 2026
  Samin Mahdizadeh Sani*, Max Ku*, Nima Jamali, Matina Mahdizadeh Sani, Paria Khoshtab, Wei-Chieh Sun, Parnian Fazel, Zhi Rui Tam, Thomas Chong, Edisy Kin Wai Chan, Donald Wai Tong Tsang, Chiao-Wei Hsu, Lam Ting Wai, Ho Yin Sam Ng, Chiafeng Chu, Chak-Wing Mak, Keming Wu, Hiu Tung Wong, Yik Chun Ho, Chi Ruan, Zhuofeng Li, I-Sheng Fang, Shih-Ying Yeh, Ho Kei Cheng, Ping Nie, Wenhu Chen.
- **Certifiably Robust Model Evaluation in Federated Learning under Meta-Distributional Shifts**
  Published in ICML 2025
  Amir Najafi, Samin Mahdizadeh Sani, Farzan Farnia.
- **Extending LLMs to New Languages: A Case Study of Llama and Persian Adaptation**
  Published in COLING 2025
  Samin Mahdizadeh Sani, Pouya Sadeghi, Thuy-Trang Vu, Yadollah Yaghoobzadeh, Gholamreza Haffari.
- **Comparative Study of Multilingual Idioms and Similes in Large Language Models**
  Published in COLING 2025
  Paria Khoshtab, Danial Namazifard, Mostafa Masoudi, Ali Akhgary, Samin Mahdizadeh Sani, Yadollah Yaghoobzadeh.
- **LLMCARE: Alzheimer's Detection via Transformer Models Enhanced by LLM-Generated Synthetic Data**
  Published in Frontiers in Artificial Intelligence 2025
  Ali Zolnour, Hossein Azadmaleki, Yasaman Haghbin, Fatemeh Taherinezhad, Mohamad Javad Momeni Nezhad, Sina Rashidi, Masoud Khani, AmirSajjad Taleban, Samin Mahdizadeh Sani, Maryam Dadkhah, James M Noble, Suzanne Bakken, Yadollah Yaghoobzadeh, Abdol-Hossein Vahabie, Masoud Rouhizadeh, Maryam Zolnoori.
- **What Can Diachronic Contexts and Topics Tell Us About the Present-Day Compositionality of English Noun Compounds?**
  Published in LREC-COLING 2024
  Samin Mahdizadeh Sani, Malak Rassem, Chris Jenkins, Filip Miletic, Sabine Schulte im Walde.
- **Benchmarking Large Language Models for Persian: A Preliminary Study Focusing on ChatGPT**
  Published in LREC-COLING 2024
  Amirhossein Abaskohi, Sara Baruni, Mostafa Masoudi, Nesa Abbasi, Mohammad Hadi Babalou, Ali Edalat, Sepehr Kamahi, Samin Mahdizadeh Sani, Nikoo Naghavian, Danial Namazifard, Pouya Sadeghi, Yadollah Yaghoobzadeh.

Research Experience

- **University of Waterloo** — Canada, On Site
  Under the supervision of Prof. Wenhu Chen — *Mar 2025 – Sep 2025*
  - Evaluate and compare the performance of diffusion models and LLM/auto-regressive models in image generation and editing across six tasks (e.g., Text-guided Image Generation, Single Reference-guided Image Editing) and six topics (e.g., Textual Graphics, Artworks), aiming to provide insights into their strengths, weaknesses, and suitability for various image domains.
- **Chinese University of Hong Kong** — Hong Kong, Remote
  Under the supervision of Prof. Farzan Farnia — *Feb 2024 – Sep 2025*
  - Certifying the performance of ML models on unseen target networks using heterogeneous source networks in a federated learning setting. Developed approaches to quantify differences between meta-distributions using Wasserstein distance and f-divergences, proposing reliable performance guarantees.
  - Designing an adaptive diffusion sampling framework (conditional diffusion + neural contextual bandit) that selects per-context steps (e.g., 10–100) to balance generation quality and compute cost.
- **University of Tehran – Monash University** — Iran, Australia
  Under the supervision of Prof. Yadollah Yaghoobzadeh and Prof. Reza Haffari — *Mar 2023 – Feb 2024*
  - Integrated Persian into Llama through parameter-efficient fine-tuning using a multi-stage approach: monolingual pretraining, bilingual alignment, and instruction-tuning with task-specific datasets. Analyzed the impact of each step on generation and classification performance.

- Evaluated LLMs (GPT-3.5-turbo, GPT-4, OpenChat-3.5) on various Persian tasks, showing that smaller, fine-tuned models outperform general LLMs in task-specific reasoning performance.

- **University of Stuttgart** Germany, Remote
  Under the supervision of Prof. Sabine Schulte im Walde *Mar 2023 – Oct 2023*
  - Explored diachronic changes in contexts and semantic topics of compounds to reveal present-day compositionality. Designed a binary classification task using diachronic vector spaces and demonstrated that changes in cosine similarity across topics distinguish between low and high compositionality compounds.

Honors and Awards

- Research Assistantship Award, CS PhD, **University of Southern California** (not enrolled due to visa delays) 2024
- Talent Student Award, Top 3 of M.Sc. students in Electrical and Computer Engineering, **University of Tehran** 2024
- Talent Student Award, Top 10% of B.Sc. students in Computer Engineering, **University of Tehran** 2020
- Exceptional Talent Student, Exemption from Nationwide M.Sc University Entrance Exam 2020

Work Experience

- **Mobile Telecommunication Company of Iran (Hamrah e Aval)** Iran
  Back-end Developer *Sep 2021 - Sep 2022*
  - Implemented custom filters and analyzers to tokenize queries in order to crawl relevant pages for user queries
- **Institute for Research in Fundamental Science (IPM)** Iran
  Front-end Developer *Jun 2020 - Sep 2020*
  - Implemented custom filters and analyzers to tokenize queries in order to crawl relevant pages for user queries

Teaching Assistant

- Foundation Models in NLP Fall 2023
  Prof. Yadollah Yaghoobzadeh, Dr. Mohammad Javad Dousti
- Natural Language Processing Spring 2023
  Prof. Heshaam Faili
- Cognitive Science Spring 2023
  Prof. Mohammadreza Abolghasemi Dehaqani
- Statistical Inference Fall 2022
  Prof. Behnam Bahrak

Notable Projects

- **Analyzing Cultural Commonsense in Language Models**
  Conducted an examination of cultural commonsense using probing methods and question-answering tasks. Additionally, carried out experiments under zero-shot and few-shot settings to further analyze language models.
- **Building Fair and Secure ML Models**
  - Implemented a fair classifier by adding a loss term for protected attributes.
  - conducted an attack on a model using adversarial examples and employed patches to create a backdoor within the model.
  - Explained black box models using various techniques, including Shapley values and LIME.
- **Natural Language Processing Course Projects**
  - Implemented various tokenization algorithms.
  - Fine-tuned a BERT-base model for a question answering task.
  - Developed a model for intent detection and slot filling.
  - Utilized transformer-based models for classification and entailment.
- **Artificial Intelligence Course Projects**
  - Implemented a FeedForward Neural Network from scratch.
  - COVID prediction based on chest images.
  - Synthesized a 9-gate Boolean circuit using a genetic algorithm to satisfy a given 10-input truth table

Skills

- **Programming Languages**
  C/C++, Python, Java, R, SQL (MySQL), MATLAB
- **Libraries**
  NumPy, Pandas, PyTorch, TensorFlow, scikit-learn
- **Technologies & Tools**
  LaTeX, Git, Jira, Jupyter

Languages

- **Persian** Native
- **English** Fluent
  TOEFL iBT **114/120** (R 30, L 27, S 29, W 28)

References

- **Prof. Yadollah Yaghoobzadeh** y.yaghoobzadeh@ut.ac.ir
- **Prof. Wenhu Chen** wenhu.chen@uwaterloo.ca
- **Prof. Farzan Farnia** farnia@cse.cuhk.edu.hk
- **Prof. Reza Haffari** gholamreza.haffari@monash.edu