Pouya Sadeghi

COMPUTER ENGINEERING STUDENT

✉ pouyasadeghi2012@gmail.com | 🏠 ipouyall.github.io | ⌨ Ipouyall | in Ipouyall | 🎓 Pouya Sadeghi

Education

University of Tehran, School of Electrical and Computer Engineering   *Tehran, Iran*

B.Sc. IN COMPUTER ENGINEERING (SOFTWARE ENGINEERING MAJOR)   *Sep. 2020 - Present*

Honors & Awards

Fatima Fellowship   *2024*
- Selected for the 2024 cohort of the Fatima Fellowship program.

Ranked 1st and Gold medal at 28th Iranian University Scientific Olympiad   *2023*
- Achieved 1st rank among all Computer Science/Computer Engineering Bachelor students in Iran and received the Gold Medal.

Ranked 2nd at University of Tehran   *2021 - 2022 (second year)*
- Ranked 2nd among 110 Computer Engineering students of EECE Department.

Top 0.1% National University Entrance Exam   *2020*
- Ranked 51st among over 174,000 participants.

Publications

Benchmarking Large Language Models for Persian: A Preliminary Study Focusing on ChatGPT
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
Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024), 2024, Torino, Italia

SLPL SHROOM at SemEval2024 Task 06 : A comprehensive study on models ability to detect hallucination
Pouya Fallah, Soroush Gooran, Mohammad Jafarinasab, Pouya Sadeghi, Reza Farnia, Amirreza Tarabkhah, Zeinab Sadat Taghavi, Hossein Sameti
Proceedings of the 18th International Workshop on Semantic Evaluation (SemEval-2024), 2024, Mexico City, Mexico

uTeBC-NLP at SemEval-2024 Task 9: Can LLMs be Lateral Thinkers?
Pouya Sadeghi, Amirhossein Abaskohi, Yadollah Yaghoobzadeh
Proceedings of the 18th International Workshop on Semantic Evaluation (SemEval-2024), 2024, Mexico City, Mexico

Research Experience

Research Intern (Fellow)   *Online (Remote)*

FATIMA FELLOWSHIP   *August 2024 - Present*
- Working on Multilingual Multicultural Red Teaming of LLMs.

Visiting Undergrad Researcher   *Singapore*

SINGAPORE MANAGEMENT UNIVERSITY (SMU)   *August 2024 - Present*
- Working on Certifying the AI systems in the presence of uncertainty.

Research Assistant at the UTNLP lab   *Iran, Tehran*

UNIVERSITY OF TEHRAN (UT)   *April 2023 - Present*
- Various NLP projects and publications (Prompt Engineering - SemEval 2024 | LLM Evaluation - LREC 2024 | Develop Persian LLM - Arxive)

Token-level analysis of LMs' behavior   *Iran, Tehran*

UNIVERSITY OF TEHRAN (UT) - TeIAS   *June 2023 - August 2023*
- Explored different tokens' effects on the model's behavior for various tasks. (GitHub)

Hate Speech detection in low resource languages   *Iran, Tehran*

UNIVERSITY OF TEHRAN (UT)   *Summer 2023*
- Natural Language Processing using Graph Neural Network models for hate speech detection. (GitHub)
- Using explainability methods to explain the results achieved by LMs on the dataset.

Working Experiences

Research Intern, Macquarie University   *April 2023 - October 2023*
- Developed a Copilot tool for therapists to assist during therapy sessions.
- Gained experience with multi-modal models, sentiment analysis, and the Streamlit framework for presentation.

Software Engineer, Sotoon   *September 2022 - March 2023*
- Worked as a Junior part-time engineer in the AI Department (NLP and Voice teams).
- Learned to use Apache Airflow and MLFlow for deploying machine learning models and monitoring them during tuning and deployment.

Site Reliability Engineering Intern, Sotoon   *July 2022 - September 2022*
- Completed an internship during a Summer Camp at Sotoon, a company in the Hezardastan Group providing Cloud Computing and AI as a Service.
- Gained skills in Docker, Kubernetes, Ansible, Golang, parallel programming, Prometheus monitoring, CI/CD, and software testing and quality assurance.

Teaching Experience

Teaching Assistant   *Tehran Iran*
University of Tehran   *Fall 2022 - Present*
- Database Design   2 semesters
- Artificial Intelligent   2 semesters
- Operating System   1 semester
- Computer Networks   1 semester
- Data Structures and Algorithms   2 semesters

Other Notable Projects

Large Language Models Course Projects   *Spring 2024*
- Explored Embedding methods (GloVe, Word2Vec)
- Soft-Prompt Tuning for improved task performance
- PEFT (LoRA) and Retrieval-Augmented Generation (RAG)
- RLHF, QLoRA, and text generation evaluation with BERTScore

Deep Neural Networks Exploration   *Ongoing*
- Implemented DNN architectures (CNNs, RNNs, VAEs, GANs) in PyTorch
- Investigated advanced techniques such as Knowledge Distillation, Adversarial Attacks

LogicPL Compiler   *Spring 2023*
- Developed a compiler for Logic Programming Language, handling grammar parsing, AST, and bytecode generation.

Offensive Speech Detection with GNNs   *Summer 2023*
- Evaluated GNNs for Text Classification on offensive speech datasets.
- Utilized Explainable AI methods and BERT for token-level analysis.

Artificial Intelligence Course Projects   *Fall 2022*
- Implemented Naive Bayes, Genetic Algorithms, and Neural Networks for AI applications.
- Studied Search Algorithms and Adversarial Agents.

Computer Networks Course Projects   *Spring 2023*
- Developed client-server applications using TCP/UDP.
- Simulated wireless networks using NS-3 and studied routing and congestion control protocols.

Operating Systems Lab Projects   *Fall 2022*
- Worked on Process Scheduling, Synchronization, and System Calls in xv6.

Computer Architecture   *Spring 2022*
- Implemented MIPS processor with single-cycle, multi-cycle, and pipelined designs.

Skills

Programming Languages	Expert: C/C++, Python, Golang Intermediate: LaTeX, Verilog HDL, Bash Script
Theoretical Skills & Concepts	Artificial Intelligence, Machine Learning, Probability and Statistics, Data Structures and Algorithms, Parallel Programming and Concurrency, Formal Verification, Explainable and Trustworthy AI,
Tools & Technologies	Transformers, PyTorch, Keras, OpenAI's Gym, Git, CI/CD, Docker, Kubernetes, Jenkins, Socket programming,
Languages	Persian (Native), English (Proficient)