Mehrdad Rafiepour

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Summary

- Motivated researcher, with 3 years of experience in natural language processing, resulting in 3 publications.
- An experienced programmer with a 5-year history of publishing mobile applications.
- Strong communication skills in English, facilitating effective collaboration.

Education

M.Sc. in Computer Engineering - Software, University of Kashan — Sep 2019 - Feb 2023
Thesis: Proposing a Model for Natural Language Understanding Using Deep Neural Networks
GPA: 19.2/20 **(4/4)**
Honor: Ranked First in the Cohort

B.Sc. in Computer Engineering - Software, University of Qom — Sep 2013 - Feb 2018
Project: Designing and Implementing an Assistant Program for the Visually Impaired in Android
GPA: 16.01/20 **(3.1/4)**
Honors: Awarded Full Tuition Scholarship
Ranked First in University-Wide Android Programming Competition

Research Interests

- Large Language Models:
  - Evaluation
  - Instruction-Following Capability
  - Explainability
- Natural Language Processing for Social Good
- Dialogue Systems

Publications

Article	Citations	Year
Rafiepour, Mehrdad; Vahidipour, Seyed Mahdi "On the effect of the average clustering coefficient on topology-based link prediction in featureless graphs," arXiv:2501.06721**(Preprint)**	0	2025
Rafiepour, Mehrdad; Sartakhti, Javad Salimi "CTRAN: CNN-Transformer-based network for natural language understanding" Engineering Applications of Artificial Intelligence. Volume 126C.	25	2023
Rafiepour, Mehrdad; Abdolalizade, Zahra; Vahidipour, Seyed Mahdi "Distinguishing dense networks from pseudo-tree networks for link prediction based on homogeneity and heterogeneity criteria" The second national informatics conference of Iran, **In Farsi**	-	2021

Academic Projects

- NoSQL Query Generation for Answering Natural Language Questions Using Reinforcement Learning
  Details: Designed a pointer network model to fill empty slots in an ElasticSearch query. Introduced a bounty reward that encouraged the agent to explore unchosen options of the batch and separated the reward for partial and full result matches.
- A Transformer-Based Network for Natural Language to SQL Conversion
  Details: Implemented a modular model based on Transformers to generate an executable SQL query for the WikiSQL dataset.

• Simulating Multidimensional Markov Models Using Petri Nets for Game Map Generation

Details: Utilized the in-house PetriNet library to develop a Petri model based on a Multidimensional Markov Model for generating playable game maps in two-dimensional video games.

Academic Service

◆ **Member of the Program Committee of CLPsych 2025 - NAACL 2025**

• Evaluated submissions on LLM's application in mental health

◆ **Reviewer for the COLING 2025 Conference**

• Evaluated submissions on the applications of large language models in healthcare

Skills

Natural Language Processing: PyTorch, HuggingFace, NetworkX, Numpy, Pandas, Scikit-Learn, Keras

Development Environments: PyCharm, DataSpell, Jupyter, Eclipse, Android Studio, MatLab, VSCode

Programming Languages: Python, Java, PHP, Bash, C#, C++

General Knowledge: Ubuntu, Remote Development, Networking, LaTeX, Office Products

English Proficiency

IELTS (Academic) January 2024 – January 2026

Overall band score: 8.0

Listening: 8.5 Reading: 8.5

Writing: 8.0 Speaking: 7.5

Work Experience

◆ **Self-employed, Full-Stack Android Developer** **2014-2019**

• Published over 10 Android applications targeting the Iranian local market, with 5 achieving significant success
• Responsible for all aspects of development, including client-side and server-side implementations
• Practical experience with concepts such as Object-Oriented Programming and Minimum Viable Product and the Model View Component design pattern
• Hands-on experience with Java, Python and PHP

◆ **Highlighted Projects**

• Hamyar

Details: An accessibility app that enhanced smartphones' functionality for the visually impaired.

• JourneyJotter

Details: provided people struggling with interpreting maps (Topographical Agnosia) with a detailed description of the path to their destination which they provide only as an address.

• HandsFreeChat

Details: Utilizing the latest Google voice-to-text API, this app provided an alternative to sending voice messages. Functioning as a finite state machine, this app enabled users to write text messages and navigate through conversations by their voice.

• Saramad Antivirus

Details: Saramad was an antivirus package that protected users' privacy, offering many ways to secure users against unsafe applications and social engineering. The analysis happened statically, sometimes requiring the analysis of arm-based assembly codes.

References

Provided upon request.