Amir Mohammad Kouyeshpour

Machine Learning Researcher
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RESEARCH INTERESTS

- **Natural Language Understanding and Foundation Models**
- **Graph Learning and Knowledge Representation**
- **Model Interpretability and Robustness**
- **Deep Reinforcement Learning**
- **AI for Dynamic and Uncertain Systems**
- **AI in Biomedicine and Health**

EDUCATION

University of Tehran, Tehran, Iran — Oct 2021 – Sep 2024
M.Sc. in Information Technology (Medical IT Engineering)
Thesis: Word Sense Induction in Persian Language using Deep Learning Methods
Advisors: Prof. Hadi Veisi, Prof. Saman Haratizadeh
GPA: 18.48/20

Ilam University, Ilam, Iran — Dec 2015 – Sep 2020
B.Sc. in Computer Engineering (Information Technology)
Final Project: Diagnosis of the Disease Using Patient Symptoms
Advisor: Prof. Mohammad Tanhaei
GPA: 16.08/20

RESEARCH EXPERIENCE

- **Machine Learning Researcher** — Nov 2021 – Sep 2023
  Knowledge Discovery and Data Mining (KDD) and Data and Signal Processing (DSP) Laboratories, University of Tehran

  - Developed unsupervised learning for Persian word sense induction by integrating transformer-based and graph-based (network modeling and neural nets) models. (Details)
  - Researched prompt learning and utilized large language models to score applicant requests in collaboration with Prof. Shaonan Wang. (Details)
  - Performed BERT compression using separate index. (Details)
  - Improved NDCG using small language models for product ranking. (Details)
  - Conducted stance detection using contrastive loss in Persian. (Details)

TEACHING EXPERIENCE

- **Teaching Assistant** — Sep 2022 – Feb 2023
  University of Tehran

  - Big Data (Mining of Massive Datasets), Machine Learning (ML), Advanced ML with Prof. Saman Haratizadeh
  - Introduction to Computational Linguistics (CL), ML for Natural Language Processing (ML4NLP) with Prof. Hadi Veisi
  - Intelligent Systems in Medicine, ML courses with Prof. Mehdi Teymouri
    Responsibilities included conducting practical sessions, designing assignments, grading, and helping students understand complex concepts.

PUBLICATIONS

- **GanjNet: Leveraging Network Modeling with Large Language Models for Persian Word Sense Induction**
  Presented at IKT2024, December 24-26, 2024.
- **LLMSense: Bridging Deep Graph Networks with LLMs for Robust Persian Word Sense Induction**
  Manuscript in preparation.

TECHNICAL SKILLS

- **Theoretical Background:** Experienced in algorithms, data structures, and discrete mathematics with emphasis on graph theory.
- **Programming Languages:** Proficient in Python, Java, C/C++, MATLAB, SQL; Familiar with R and Rust
- **Machine Learning Libraries:** Experienced in PyTorch, TensorFlow
- **Web Development:** Experience with Django, Flask, and RESTful APIs; Familiar with front-end technologies (HTML, CSS, JavaScript)
- **Big Data Platforms:** Experience with Apache Airflow, Spark, and Hadoop for managing data infrastructure, processing, and ETL pipelines
- **Other Tools:** Fluent in Linux, Bash scripting, and Docker

TECHNICAL EXPERIENCE

- **Organizational AI Consultant** Aug 2023 – Mar 2024
  University of Tehran
  - Developed AI Adoption Readiness and Data Governance programs for the Organization of Student Affairs.

- **MLOps and Backend Developer** Sep 2022 – Feb 2023
  KDD Laboratory, University of Tehran
  - Established Docker containers, machine learning infrastructure, Spark clusters, and model pipelines following MLOps best practices.
  - Developed Django REST APIs and contributed to stock prediction model development for a financial platform's leaderboard.

RELEVANT COURSES

(Graduate) Machine Learning

(Graduate) Machine Learning for Natural Language Processing

(Graduate) Application of Intelligent Systems in Medicine

(Graduate) Bioinformatics

(Undergraduate) Artificial Intelligence

(Undergraduate) Advanced Computer Programming

LANGUAGES

- **English:** Proficient (TOEFL iBT score: 97/120)
- **Persian:** Native

SOFT SKILLS

Strong problem solving abilities with excellent teamwork and mentoring skills, constantly seeking to expand knowledge and capabilities.

INTERESTS

Playing chess, cooking, running, teaching, and contributing to free and open source software (FOSS) projects.

ENGAGEMENT

- **Participant at Neuromatch Summer School** Summer 2023
  - Collaborated on developing a grammar error correction model under the guidance of Prof. Shaonan Wang and Artem Pilzak. (Details)

- **Huawei's Seeds for the Future Program** Winter 2022
  - Selected for a week-long program, culminating in a group project presentation. Achieved the highest participant score. (Certificate)

- **Linux User Group (LUG) Organizer** Jan 2019 – Dec 2021
  - Facilitated biweekly meetings and technical workshops, advocated for Free and Open Source Software (FOSS), and configured supporting platforms. (Details)