Zahra **Habibzadeh**

Graduted Research Assistant

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Education

University of Tehran *Tehran, Iran*

M.Sc. in Artificial Intelligence and Robotics *2020 - 2023*

- Supervisor: Dr. Asadpour
- Thesis: Extracting values and attitudes from social network data: A case study assessing users' satisfaction with their partner
- Overall GPA: **4/4**

University of Mazandaran *Babolsar, Iran*

B.S. in Computer Engineering *2012 - 2016*

- Thesis: Designing a new article site using PHP and SQL
- Overall GPA (Last two years): 3.76/4
- **2nd** Rank among graduated bachelor students based on overall GPA out of 70 students

Research Interests

Computational Social Science	**Behavioral Analysis**
Natural Language Processing	**Transformers, Large Language Models (LLMs)**
Data Mining	**Text Mining, Sentiment Analysis**

Research Experience

Research Assistant *Tehran, Iran*

Social Networks Lab, University of Tehran *2021 - present*

- Working with **social network data** to derive **valuable insights** into human behavior regarding social interactions.
- Developing a new approach to evaluate user contentment in their relationship by **analyzing X (formerly known as Twitter) data**.
- Comparing different methods for the Influence Maximization Problem in Social Networks in a **systematic review**. (Link)

Publications

Using Language Models for assessment of users' satisfaction with their partner in Persian *2024*

Z.Habibzadeh, M.Asadpour

- Submitted (under review)

Work Experience

AI Engineer *Tehran, Iran*

Nikamooz, Full-time | ***Retrieval-Augmented Generation (RAG)*** *Sep. 2024 - Present*

- Implemented **RAG** using LLMs to enhance contextual text generation by incorporating real-time document retrieval.

Data Engineer *Tehran, Iran*

ModAI (Intuition), Full-time | *Python, Kafka, NATS, Redis, PostgreSQL, Docker* *May. 2024 - Aug. 2024*

- Working with social network data to implement and transition between **various data pipeline systems** at ModAI, a company that improves fashion discovery with AI-powered image and text search, offering accurate and extensive product matches through its application and website.

Mentor *Tehran, Iran*

HooshBuz Summer School, Part-time *2022 - 2023*

- Group collaboration with 7 other mentors to educate 160 students during 28 workshops on Data Science, Data Analytics, Machine Learning, and Text Mining.

Teaching Experience

Statistical Inference *Dr. Behnam Bahrak*

School of Electrical and Computer Engineering, Collage of Engineering, University of Tehran, Tehran, Iran *2022*

- Defining an advanced practical and theoretical assignment.

Machine Learning *Dr. Mohammad Reza Abolghasemi*

School of Electrical and Computer Engineering, Collage of Engineering, University of Tehran, Tehran, Iran *2022*

- Defining an advanced practical and theoretical assignment for more than 100 students.

Data Analysis *Dr. Mohammad Amin Sadeghi*

School of Electrical and Computer Engineering, Collage of Engineering, University of Tehran, Tehran, Iran *2021-2022*

- Defining 3 advanced projects and 3 quizzes for more than 70 students.

Projects

LLMs (Link)

- Retrieval-Augmented Generation (RAG) System for PDF Documents

Big Data and Data Analytics Projects (Link)

- Launching a **real-time Big Data system** for the analysis of online Persian Twitter data
- Using Apache Spark for **Natural Language Processing**, **Log Mining, Graph Mining**, and Stock Market tasks
- Analyzing a real dataset using the **R programming language**
- Investigating the main reason for the sales decline in a wood industry factory

Social Networks Projects (Link)

- Examining the effect of combining economic and **social analysis on the prediction** of stock price fluctuations
- An analysis of **Telegram channels** related to the dollar and its price

Deep Learning & Machine Learning Projects (Link)

- Generating music using using Long Short-Term Memory (LSTM) networks
- Classifying images using Convolutional Neural Networks (CNNs)
- **Detecting Parkinson disease using signals of speech data** with ensemble learning

Bio Inspired Computing Projects (Link)

- Developing L-System Grammar
- Implementing **bio-inspired optimization** methods to enhance algorithm performance for complex problem-solving

Skills

Theoretical Experience	Machine Learning, Text Mining, Deep Learning, Design of Algorithms, Big Data, Data Structures, and Databases
Programming Languages	Python, R, HTML, CSS, JavaScript, and C++
Libraries and Frameworks	PyTorch, TensorFlow, Keras, NumPy, SciPy, Scikit-learn, Pandas, BeautifulSoup, and NetworkX
Databases, Datastores, and Tools	MongoDB, Apache Cassandra, Elasticsearch, ClickHouse, Neo4j, MySQL, and PostgreSQL
Big Data Platforms and Tools	Apache Spark, Apache Superset, Apache Hadoop, Apache Kafka, Apache Hive, Kibana, NATS, and DBeaver
Visualization Tools	Matplotlib, Seaborn, Plotly, Gephi, Geoplotlib, and Houdini
Developer Tools	Git, Docker, and VS Code
Other Tools and Skills	LaTeX, MS Office, and Adobe Photoshop

Languages

English *Fluent*

Persian *Native*

Academic Courses

Bio Inspired Computing, 19.4/20 *2022*

Advanced Robotics, 18.77/20 *2022*

Social Networks, 18/20 *2021*

Neural Networks and Deep Learning, 18.06/20 *2021*

Massive Data Analysis and Systems (Big Data), 19.5/20 *2021*

Statistical Inference, 17.8/20 *2021*

Machine Learning, 19.3/20 *2020*

Data Analysis, 17.75/20 *2020*