

# Zahra Habibzadeh

GRADUATED 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, COLLEGE 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, COLLEGE 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, COLLEGE 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 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

## 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