




PARDIS SADAT ZAHRAEI


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ABOUT ME

Highly motivated Computer Engineering student with a keen passion for problem-solving and deep interest in Natural Language Processing, Artificial Intelligence and Machine Learning.

EDUCATION

B.Sc. in Computer Engineering
Sharif University of Technology

 2020 – Ongoing

Address : Sharif University of Technology, Azadi Ave, 1458889694
Tehran (Iran)


Website :sharif.edu

Final Grade : 18.29/20 (GPA Equivalent to 3.77/4)

Relevant coursework:

- Natural Language Processing (Ongoing - Master's level)
- Advanced Information Retrieval (Ongoing)
- Machine Learning 20/20
- Artificial Intelligence 19.8 / 20
- Game Theory 20/20
- Scientific and Technical Presentation 20/20
- Numerical Computation 19.6 / 20
- Data Structures and Algorithms 20 / 20
- Linear Algebra 20 / 20
- Game Theory 20 / 20
- Engineering Probability and Statistics 19.4 / 20
- Advanced Programming 19 / 20
- Generative AI with Large Language Models [Certificate](#)
- Data Visualization [Certificate](#)
- Text Retrieval and Search Engines [Certificate](#)
- Text Mining [Certificate](#)


Diploma in Mathematics & Physics
Aboureihan High School

 2017 – 2020

Final Grade: 19.68 / 20

RESEARCH EXPERIENCE

NLP Research Projects

 Brock University - Canada  Supervisor: Dr.Emami

NLP Research Project

 QCRI - Qatar  Supervisor: Dr.Asgari



The Health Informatics, Visualization, and Equity (HIVE) Lab Internship

 Toronto University - Canada  Supervisor: Dr.Shakeri

NLP Research Project

 University of Maryland - USA  Supervisor: Dr.Boyd-Graber

LANGUAGES

Persian 
Mother tongue
English 
C2 Proficient according to the Common European Framework of Reference (CEFR)

DIGITAL SKILLS

Programming Skills

[Python](#) | [Java](#) | [R](#) | [C](#) | [Assembly](#) | [Verilog](#) | [SQL](#) | [HTML](#) | [CSS](#) | [Javascript](#)

Python libraries I've experience with:


[Pandas](#) | [Numpy](#) | [Scikit-learn](#) | [NetworkX](#) | [Matplotlib](#) | [PyTorch](#) | [TensorFlow](#) | [SciPy](#)

PUBLICATIONS

WSC+: Enhancing The Winograd Schema Challenge Using Tree-of-Experts

Pardis Sadat Zahraei, Ali Emami

ArXiv preprint

-  Accepted for presentation and publication in the proceedings of the [Main EACL 2024 conference](#)
- **TL;DR:** We introduce the WSC+ dataset using our new prompting approach Tree-of-Experts (ToE), revealing LLM challenges in common-sense reasoning, overconfidence, and bias.
- **Contribution Types:** Model analysis & interpretability, NLP engineering experiment, Data resources, Data analysis


TEACHING ASSISTANT EXPERIENCE

leading workshops, developing problem sets and course projects, managing the team, and providing mentorship for the following courses:







Natural Language Processing

•  Dr.Asgari  winter 2024-2025

Machine Learning

•  Dr.Motahari  winter 2024-2025
•  Dr.Seyed-Salehi  winter 2024-2025
•  Dr.Motahari  fall 2023-2024
•  Dr.Sharifi  fall 2023-2024
•  Dr.Jafari  fall 2023-2024

Artificial Intelligence

•  Dr.Rohban  winter 2024-2025
•  Dr.Rohban & Dr.Soleymani  fall 2023-2024
•  Dr.Samiei  winter 2022-2023

PROJECTS

🔍 Advanced Information Retrieval

Constructed a search engine from scratch, covering multiple facets of information retrieval:

- Exploratory data analysis
- Spell correction
- Index construction and compression
- Vector space and Probabilistic models
- Word embedding
- Clustering (Hierarchical, DBSCAN, K-means)
- Latent semantic indexing
- Generative models
- Large language models
- Crawler

💬 Sentiment Analysis

Machine Learning Project

Utilized models including Decision Tree, Naïve Bayes, Neural Network, LSTM + CNN, and Ensemble Methods for sentiment analysis.

Natural Language Processing Project

Conducted advanced sentiment analysis on scraped Twitter and YouTube datasets using a sophisticated preprocessing pipeline. Techniques included lemmatization, tokenization, Named Entity Recognition, spell checking, bigram checking, contradiction fixing, and a comprehensive slang dictionary.

🌐 Parsi.io - Persian NLP Open Source Library

Designed and developed the 'Task Extractor' module. Implemented regex-based algorithms to identify and manage main and subtasks, including task creation, updates, and assignment of personnel and timelines.

💊 Drug Name Prediction

Predicting drug names using embedding methods on both Persian and English languages. The models used in this project are FastText and BERT.

📰 Summarizing and Classifying News

Developed a system for news classification and abstract generation, involving:

1. **Document Classification:** developed two models to classify news articles into categories. SHAP library was used for model interpretability.
2. **Token Classification:** implemented two models for token classification. The basic model used HMM, while the advanced model used transformer-based models. The models were evaluated on Named Entity Recognition tasks.
3. **Text Generation:** Utilized transformer-based models to generate news summaries from text, providing an abstract of the news.

📝 Persian Language Text Conversion

Successfully executed a project focused on the conversion of formal to informal text, and vice versa, in the Persian language. During this project, I developed six models for classifying and converting the text.

Advanced Information Retrieval

- 🎓 Dr.Soleymani 📅 winter 2024-2025

Linear Algebra

- 🎓 Dr.Sharifi (Head TA) 📅 fall 2023-2024
- 🎓 Dr.Rabiee 📅 winter 2022-2023

Engineering Probability and Statistics

- 🎓 Dr.Najafi 📅 fall 2023-2024
- 🎓 Dr.Sharifi 📅 winter 2022-2023

Scientific and Technical Presentation

- 🎓 Dr.Peyvandi 📅 fall 2023-2024

Compiler Design

- 🎓 Dr.Hosseinmardi 📅 fall 2023-2024
- 🎓 Dr.Hosseinmardi 📅 winter 2022-2023

Numerical Computation

- 🎓 Dr.Hossein-Ghorban 📅 winter 2024-2025
- 🎓 Dr.Hossein-Ghorban 📅 fall 2023-2024
- 🎓 Dr.Hossein-Ghorban 📅 winter 2022-2023

Computer Simulation

- 🎓 Dr.Peyvandi 📅 fall 2023-2024

Advanced Programming (Java)

- 🎓 Dr.Fazli 📅 winter 2022-2023
- 🎓 Dr.Salmani (Head TA) 📅 fall 2021-2022

Basics of Programming (Python)

- 🎓 Dr.Aghamohammadi 📅 winter 2022-2023

HONORS AND AWARDS

🏆 **Kaggle Community Prediction Competitions**
secured the 1st position in all four of Sharif university's Kaggle community competitions | 2023 | [pardiszahraei](#)

🏆 **International Collegiate Programming Contest Championship (ICPC)**
secured the 30th position in the ICPC preliminary contest | 2023

🏆 **Iranian National Universities Entrance Exam**
Ranked among 0.5% students in the Iranian National Universities Entrance Exam in Physics and Mathematics among more than 155,000 participants. | 2020

ACADEMIC SERVICES

Executive Staff, 8th Sharif Winter Seminar Series, WSS

[Winter Seminar Series on Advanced Topics in Computer Science and Engineering 2023](#)


Human Resources Staff, 7th Sharif Winter Seminar Series, WSS

[Winter Seminar Series on Advanced Topics in Computer Science and Engineering 2022](#)

HOBBIES

 Well-Read Wordsmith With a Passion for Different Cultures and Languages

 Avid Cyclist and Hiker

 Professional Acrylic painter