

# Majid Zarharan

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## Education

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| Oct 2022                                      | <i>Dublin City University (DCU)</i> , Dublin, Ireland  |
| <b>Sep 2026</b><br>(Expected completion date) | <ul style="list-style-type: none"> <li>Ph.D. in Artificial Intelligence</li> <li>Working on Interpretability, Natural Language Explanation (NLE), and Fact-checking</li> <li>Supervisors: Dr. Jennifer Foster and Dr. Mohammad Taher Pilehvar</li> </ul>   |
| Nov 2021                                      | <i>Iran University of Science and Technology (IUST)</i> , Tehran, Iran   |
| Sep 2018                                      | <ul style="list-style-type: none"> <li>Ranked 4th among Iranian Universities (regarding the <a href="#">QS World University Rankings 2022</a>)</li> <li>Master's degree in Artificial Intelligence</li> <li>Supervisor: Dr. Sauleh Eetemadi and Dr. Mohammad Taher Pilehvar</li> <li>GPA: 17.63 out of 20.0 (3.65/4) (Ranked 6th among 28 students)</li> </ul> |
| 2011  | <i>Raja University</i> , Qazvin, Iran  |
| 2009  | <ul style="list-style-type: none"> <li>BSc. Computer Engineering</li> <li>GPA: 18.26 out of 20.0 (3.84/4)</li> <li>Supervisor: Dr. Hooshang Azizi</li> </ul>   |
| 2009  | <i>Vocational Technical University</i> , Shirvan, North Khorasan, Iran   |
| 2007  | <ul style="list-style-type: none"> <li>Associate of Computer Software</li> <li>GPA: 18.21 out of 20.0 (3.82/4)</li> </ul>  |

## Honors and Awards

- Ranked **150th** in the National Universities Entrance Exam in M.Sc Degree, in Artificial Intelligence discipline **among nearly 30,000 Participants**.
- Member of [Iran's National Elites Foundation](#) since 2019.
- Ranked **6th among 28** AI graduate students in the Department of Computer Engineering **with a 3.65/4 GPA**.
- Ranked **3rd among 120** undergraduate students in the Department of Computer Engineering **with a 3.84/4 GPA**.
- Ranked **1st among 30** students in the Vocational Technical University **with a 3.82/4 GPA**.

## Research Interests

- Natural Language Processing
- LLMs and Deep Learning
- Machine Learning (Lifelong learning, Few-shot learning, ...)
- Transfer Learning
- Multimodal AI
- Explainable AI
- Neural Net Interpretability
- Fake News Detection and Fact-checking
- Question Answering and Open Domain Chatbot
- Computer Vision

## Publications

Persian Stance Classification Data Set. [\[link\]](#) (TTO 2019)

M. Zarharan, S. Ahangar, F. Rezvaninejad, M. Lotfi Bidhendi, Sh. Jalali, M. Pilevar, B. Minaei and S. Eetemadi

ParsFEVER: a Dataset for Farsi Fact Extraction and Verification. [\[link\]](#) (\*SEM 2021)

M. Zarharan, M. Ghaderan, A. Pourdabiri, Z. Sayedi, B. Minaei-Bidgoli, S. Eetemadi and M. Pilehvar

Tell Me Why: Explainable Public Health Fact-Checking with Large Language Models. [\[link\]](#) (TrustNLP 2024, NAACL Workshop)

*Majid Zarharan, Pascal Wulschleger, Babak Behkam Kia, Mohammad Taher Pilehvar, Jennifer Foster*

Claim Extraction and enhancing the interpretability of fact-checking. (In Prep)

Persian Fake News Detection Using Stance Classification. (In Prep)

## Research Experience

### Introducing a Novel Task: Claim Extraction to Enhance Fact-Checking System Interpretability

- Ph.D. Student at DCU, (July 2023 – Present)
- Tech stack: Python | LLMs | PEFT | Prompt-based Paradigm | In-context Learning | Hugging Face | Django | MySQL | Scikit-Learn | Pandas | Numpy | NLTK

### Examining Explainable Fact-Checking in the Public Health Domain Using LLMs and PEFT

- Ph.D. Student at DCU, (Dec 2022 – Feb 2024)
- Tech stack: Python | LLMs | PEFT | Prompt-based Paradigm | In-context Learning | Hugging Face | Django | MySQL | Scikit-Learn | Pandas | Numpy | NLTK

### Pioneered The First Persian Fake News Detection Using Stance Detection. Devised Robot User Detection Systems

- NLP and ML Engineer and Researcher at Dadmataech company, (Jun 2021 – Present)
- Tech stack: Python | Tensorflow (Keras) | Pytorch | Django | MySQL | Gunicorn | Nginx | Scikit-Learn | Matplotlib | Pandas | Numpy | Seaborn | NLTK | FastText | Transformers | Docker | FastAPI | Hugging Face

### Established The First Persian Chit-Chat Dialogue System

- NLP and ML Engineer and Researcher at Dadmataech company, (Jul 2020 – Jun 2021)
- Tech stack: Python | Tensorflow (Keras) | Pytorch | Django | MySQL | Gunicorn | Nginx | Scikit-Learn | Matplotlib | Pandas | Numpy | Seaborn | NLTK | FastText | Transformers | Docker | FastAPI | Hugging Face

### Engineered The First Persian Fact-checking System

- NLP and ML Engineer and Researcher at Iran's National Elites Foundation, (Nov 2019 – Sep 2020)
- Tech stack: Python | Tensorflow (Keras) | Transformers | Django | MySQL | Scikit-Learn | Matplotlib | Pandas | Numpy | NLTK | Gensim | Word2vec | FastText | BERT | ParsBERT | Pytest | Hugging Face

## Industry Experience

### AI Engineer and Senior .Net Developer at Pajouhesh Co. (Oct 2017 – Jul 2020)

- Discovered educational data mining using machine learning methods and employing Scikit-Learn
- Produced the first Persian educational data mining on the information of whole Iranian students by ML
- Forecasted the critical levels of dropping out of school, being expelled from school, and GPA
- Boosted the HR office automation system features by 15 and cut down paperwork by 40%
- Tech stack: Python | Scikit-Learn | Matplotlib | Pandas | Numpy | Seaborn | C# | SQL Server | Asp.net MVC | Entity Framework | RabbitMQ | JQuery | Angularjs | Bootstrap | Git | CSS | Html

### Full Stack .Net Developer at Ican Engineering Group, (Feb 2016 – Oct 2017)

- Added features and applications to an online HR office automation system which is called Farzin with ASP.Net and SQL Server
- Tech stack: Ado.net | C# | SQL | Asp.net | JQuery | Javascript | Bootstrap | jQuery UI | SignalR | TFS | Css | Html

### Full Stack .Net Developer at Mahan Anbough Payam, (Jan 2012 – Feb 2016)

- Undertook web and Windows applications development using C#, C#.Net, and SQL
- Tech stack: Ado.net | C# | SQL Server | Asp.net | MVC | Windows Application | JQuery | Javascript | Entity Framework | Bootstrap | Umbraco (asp.net cms) | FastReport | jQuery UI | My SQL | Facebook API | Google API | Unit test | Integration test | Design Patterns | MVP | Jira | Scrum | CSS | Html

## Academic Projects

### Persian Fake News Detection [[get data](#)], (Oct 2020 – Nov 2022)

In this project, I use Persian stance detection in order to detect fake news. It was my Master's dissertation.

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### Persian Stance Detection [[get data](#)], (Aug 2019 – Jun 2020)

The final project of the deep learning and natural language processing courses. My "Persian stance classification data set" paper is the result of this project.

### Educational Data Mining [[get data](#)], (Jan 2020 – Jun 2020)

The final project of the data mining course. In this project, I examined students' information and obtained reasons for academic growth, academic failure, and dropout.

### Movie Sentiment Analysis, (Jan 2020 – Jun 2020)

The final project of the machine learning course.

### Improving the Prediction of the Minority Class, (Jul 2019 – Sep 2019)

One of the pattern recognition course projects. Performing different methods of classifying imbalanced data in order to have realistic accuracy.

### Online Education Website, (2011)

The final project of the Bachelor's degree.

## Teaching Experience (Working as a teacher assistant)

- Programming Fundamentals III, School of Computing, Dublin City University, (Jan 2024 – Apr 2024)
- Natural Language Processing, Computer Engineering Department of Iran University of Science and Technology, (Feb 2021 – Aug 2021)
- Advanced-Data Mining, Computer Engineering Department of Iran University of Science and Technology, (Feb 2021 – Aug 2021)
- Fundamentals of Computer Programming, Computer Engineering Department of Iran University of Science and Technology, (Sep 2019 – Feb 2020)

## Computer Skills

### Programming

- Python, TensorFlow (Keras), Pytorch, (MS/My) SQL, MongoDB, CNN, Transformers, System Design, ML System Design, Pandas, Scikit-Learn, Numpy, Pytest, Gensim, Jupyter, REST APIs, FastAPI, Django, Docker, Git, Windows, Linux, and familiar with R, RStudio, and Clouds

Application: PyCharm, Visual Studio, MS SQL Server, Microsoft Office

Platforms: Windows, Linux

## Licenses & certifications

Advanced Learning Algorithms, Coursera (2022)

Supervised Machine Learning: Regression and Classification, Coursera (2022)

The Data Scientist's Toolbox, Coursera (2022)

Neural Networks and Deep Learning, Coursera (2020)

Deep Learning in Machine Vision and Image Processing Course, Iranian Machine Vision & Image Processing Association (2020)

## Languages

Persian (Native Language) & English

## Other Interests

Almost all team sports (like Soccer and Volleyball), Ping Pong, Badminton, Bodybuilding and Camping