

# Zhivar Sourati Hassan Zadeh

NLP RESEARCH ASSISTANT IN [CENTRE FOR ARTIFICIAL INTELLIGENCE](#) AT [ZURICH UNIVERSITY OF APPLIED SCIENCES](#)

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## Education

### Bachelor of Science, Computer Engineering

Tehran, Iran

[SCHOOL OF ELECTRICAL AND COMPUTER ENGINEERING, UNIVERSITY OF TEHRAN](#)

Sept. 2017 - Sept. 2021

GPA 4.0 / 4.0

### Diploma in Mathematics and Physics Discipline

Tehran, Iran

[SALAM HIGH SCHOOL](#)

Sept. 2013 - June 2017

GPA 4.0 / 4.0

## Research Interests

- Applied Machine Learning
- Economics
- Knowledge Graph
- Complex Networks
- Statistical Inference
- Natural Language Processing
- Information Visualization
- Business intelligence
- Data Mining

## Research Experience

### NLP Research Assistant under [Prof. Mark Cieliebak](#) and [Dr. Don Tuggener](#)

[Centre for Artificial Intelligence,](#)  
[Zurich University of Applied Sciences](#)

Oct. 2021 - Now

- Dialogue systems, Topic modeling, and automatic summarization.
- Hate speech analysis in Swiss-german texts in various domains such as Twitter.

### Research Assistant under the [Dr. Behnam Bahrak](#)

[Data Analytics Lab](#)

Dec. 2020 - Oct. 2021

- Learned about complex networks, carried out multiple projects in this field, and read related papers, including surveys on analysis of the network of Twitter users.
- Analyzed the popularity of fanfictions using various attributes available on fanfictions, exploiting the tools and ideas discussed in social network analysis.
- Performed network inference on complex networks using various non-parametric tests, permutation tests, and exponential random graph models.
- Managed to collect all Persian tweets published from ten years ago until 2021 September, using two remote servers, one being used as a proxy tunnel and the second one as a database to store all the data in a well-structured format on Elastic.

### NLP Research Intern under [Dr. Mohammad Taher Pilehvar](#)

[TelAS](#)

Summer 2020

- Read papers about NLP and developed a deep understanding of state-of-the-art NLP models.
- Learned different topics in NLP and implemented specific tasks such as [NER](#) and [QA chatbots](#) to learn NLP more practically.
- [Datasets for Farsi \(Persian\) Natural Language Processing \(NLP\)](#).

## Publications

- Setayesh, A., Sourati Hassanzadeh, Z., & Bahrak, B. (2021). Analysis of the Global Trade Network 2011 using ERGMs. (under review) 2022
- Sourati Hassan Zadeh, Z., Sabri, N., Chamani, H. *et al.* Quantitative analysis of fanfictions' popularity. *Soc. Netw. Anal. Min.* 12, 42 (2022). <https://doi.org/10.1007/s13278-021-00854-9> 2022
- H. Chamani, Z. S. H. Zadeh and B. Bahrak, "An Overview of Regression Methods in Early Prediction of Movie Ratings," *2021 11th International Conference on Computer Engineering and Knowledge (ICCKE)*, 2021, pp. 1-6, doi: 10.1109/ICCKE54056.2021.9721453. 2021
- Shabani Mirzaei, T., Chamani, H., Sourati Hassanzadeh, Z., Tavakoli, S., & Bahrak, B. (2021). Topic modeling of Persian tweets during the Covid-19 pandemic. (under preparation) 2022

## Honors and Awards

### BEING ADMITTED AND OFFERED A RESEARCH ASSISTANT POSITION AT ZHAW (ZURICH UNIVERSITY OF APPLIED SCIENCES)

2021

FOR A ONE-YEAR INTERNSHIP.

\* I received this offer after I got the top score in the IAESTE selection exam (International Association for the Exchange of Students for Technical Experience).

**RANK 2<sup>ND</sup>** AMONG ALL COMPUTER ENGINEERING STUDENTS(103)

2017 - 2021

\* University of Tehran

**RECEIVED SCHOLARSHIP**, SUPPORTER FOUNDATION OF UNIVERSITY OF TEHRAN AS STUDENT WITH EXCEPTIONAL TALENTS

2017 - 2021

**RANKED 156 (TOP 0.1%)** IN IRANIAN UNIVERSITY ENTRANCE EXAM (ADMISSION TO UNIVERSITY OF TEHRAN\*)

2017

\* University of Tehran is the oldest, largest, and the most prestigious university of Iran and also the first rank university in Iran according to [U.S.News](#).

## Notable Course Projects

### Permutation Tests

Summer 2021

- Leveraged various permutation techniques, such as node permutation and network permutation, to analyze their accuracy and efficiency on complex networks.
- Used different simulation and modeling approaches such as Exponential Random Graph Models (ERGMs) to study network datasets like the global trade network.

### Neural Networks

Spring 2021

- Dived Deeper into the Memory Neural Networks from the most basic designs, like auto-associative networks, to the most complicated ones, Recurrent Neural Networks and their derivations such as LSTMs, GRUs, and Bert. Also, exploited the power of these models to train networks on various datasets such as bitcoin prices and texts extracted from tweets.
- Learned the principles of Convolutional Neural Networks and the models that fall under CNNs, including the Inception model and the U-net. Also, developed and compared different CNN models to analyze different aspects of their structures and designs.
- Analyzed the applications of Generative Adversarial Networks and their derivatives like cycle-GANs alongside Variational Auto-Encoders. Also, Implemented a cycle-GAN using the PyTorch framework.

### Reinforcement Learning

Fall 2020

- Solved different n-armed bandit problems with different policies considering different criteria such as regret and average reward, **utilizing Prospect theory by Daniel Kahneman to investigate the monetary value of waiting in a real-world problem.**
- Develop a load balancing framework on the famous jack's rental car problem using policy iteration algorithm.
- Analyzed different On-policy and Off-policy methods by comparing their accuracy and performance on different tasks.

### Artificial Intelligence

Fall 2019

- Learned and applied the basic models in AI such as clustering and regression models on various datasets, including the [bank churners](#) and [house prices](#) dataset.
- Analyzed different classification models such as random forests by applying them on various datasets and learning more about entropy and information-theory basics.
- Examined the performance of different searching algorithms such as A\* and IDS on custom-built datasets.

### Advanced Programming

Spring 2018

- Learned different design patterns and also clean coding principles by implementing a handful of programs covering diverse subjects such as hotel management, social networks, and file compression & cryptography.
- Get to know the essential elements of game design by designing a game from scratch using the C++ programming language.

## Teaching Experience as a Teaching Assistant

- Probability and Statistics in Engineering  
[Dr. Bahrak](#)

Fall 2020

- Theory of Formal Languages and Automata  
[Dr. Hojjat](#)

Fall 2019, Spring & Fall 2020

- Advanced Programming  
[Dr. Khosravi](#)

Fall 2019, Spring 2020

- Design and Analysis of Algorithms  
[Dr. Mahini](#)

Fall 2019, Spring 2020

- Artificial Intelligence  
[Dr. Yaghoubzadeh](#), [Dr. Fadaei](#)

Fall 2020, Spring 2021

- Database Systems  
[Dr. Shakery](#)

Spring 2021

## Volunteer Experience

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### Member of the Organizational Committee

*FSEN 2019*

*Spring 2019*

FSEN is an international conference that aims to bring together researchers, engineers, developers, and practitioners from the academia and the industry to present and discuss their research work in formal methods for software engineering. Students were responsible for preparing anything their assigned professor needed from their arrival, during their stay, and till their departure.

### Student Staff

*IPM Cognitive Science contest*

*Spring 2019*

Brainstorming and cognitive neuroscience student competitions are planned to create interdisciplinary collaboration. Providing anything necessary for holding the contest and the conferences were part of my responsibilities.

## Work Experience

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### Front-end Developer

*Tehran, Iran*

TAPSELL CO.

*Sept. 2019 - Jan. 2020*

- Developed the landing pages for two of the products owned by the company, [Tagrow](#), and [Metrix](#).
- Developed various features for the customer and management dashboard in the [Tapsell](#) product.

## Languages

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### English

- TOEFL - OVERALL: 107, READING: 30, LISTENING: 29, WRITING: 27, SPEAKING: 21
- GRE - VERBAL REASONING: 150, QUANTITATIVE REASONING: 168, WRITING: 4.5

### Persian

NATIVE

### German

BEGINNER

## Skills and Qualities

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### Programming Languages

PYTHON, R, C, C++, SQL, JAVA, JAVASCRIPT (ES5, ES6), TYPESCRIPT, HTML5, CSS, SCSS, VERILOG, KOTLIN, MATLAB

### Tools and Frameworks

PYTORCH, HUGGING FACE, KERAS, STATA, LINUX, SPRING, REACT, ANGULAR, JQUERY, AJAX, GIT, BOOTSRAP, MONGODB, LATEX, NODE JS., QUARTUS, MYSQL, ANDROID STUDIO

### Personal Qualities

DILIGENT, ORGANIZED, EXPERIENCED IN TEAM-WORKING, CURIOUS FOR NEW IDEAS, FAST LEARNER, AND OPEN TO NEW SITUATIONS.