

# Parsa Kamalipour

Kerman – Iran

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🔗 [eBNZsM0AAAAJ](#)

## Education

### Vali-e-Asr University of Rafsanjan

Rafsanjan, Iran

B.S. Computer Engineering, Major Track: Software Engineering.

Sep 2018–Jun 2023

- GPA of 5th, 6th, 7th, 8th semesters: 17.37/20 (3.71/4.00)
- CGPA: 16.26/20 with 140+2 credits passed
- Bachelor's Thesis: Community detection in complex network based on an improved random algorithm using local and global network information
- Bachelor's Thesis grade: 20/20 (4.0/4.0)

## Publications

- Fahimeh Dabaghi-Zarandi, **Parsa KamaliPour**, "Community detection in complex network based on an improved random algorithm using local and global network information," *Journal of Network and Computer Applications*, vol.206, p.103492, Aug 2022, doi.🔗 Q1, Impact factor: 7.574, link.🔗
- Fahimeh Dabaghi-Zarandi **Parsa KamaliPour**, "Community detection in complex network based on Vertex Cover algorithm." (*in preparation*), link.🔗

## Experience

### Research

#### Research Assistant

Enschede, The Netherlands, (Remote)

Faculty of EE, Math and CS, University of Twente

Aug 2023–Present

- I am working on Software Refactoring under the supervision of Dr. Iman Hemati Moghadam

#### Undergraduate Research Assistant

Rafsanjan, Iran

Department of Computer Engineering, Vali-e-Asr University of Rafsanjan

Aug 2021–Present

- I am researching Community Detection algorithms.
- Under the supervision of Dr. Fahimeh Dabaghi-Zarandi.
- My key role consisted of: Reading and reviewing related papers (Investigation), Implementing ideas in MATLAB and Python (Data curation, Software, Programming), Testing and improving the written code (Validation), Gathering information and writing the initial text for the paper (Writing primary draft preparation).

### Teaching

#### Undergraduate Teaching Assistant

Rafsanjan, Iran

CE Department, Vali-e-Asr University of Rafsanjan

Mar 2021–Present

##### Introduction to Information Retrieval

▶ Dr. Mojtaba Sabbagh-Jafari, TA (Spring 2023, Spring 2022 🔗 )

##### Design and Analysis of Algorithms

▶ Dr. Fahimeh Dabaghi-Zarandi, Head TA (Spring 2023, Fall 2022 🔗 , Spring 2022 🔗 , Fall 2021 🔗 , Spring 2021 🔗 )

##### Data Structures

▶ Dr. Fahimeh Dabaghi-Zarandi, Head TA (Spring 2023, Fall 2022 🔗 , Spring 2022 🔗 , Fall 2021 🔗 , Spring 2021 🔗 )

##### Software Engineering

▶ Dr. Mojtaba Sabbagh-Jafari, TA (Spring 2023)

##### Database

▶ Dr. Mojtaba Sabbagh-Jafari, Head TA (Fall 2022 🔗 )

##### Intro to Data Mining

▶ Dr. Amir Hossein Hadjhamadi, TA (Spring 2023)

##### Fundamentals of Programming

▶ Dr. Amir Hossein Hadjhamadi, Head TA (Fall 2022 🔗 )

## Artificial Intelligence

► Dr. Amir Hossein Hadjhamadi, Head TA (Fall 2022 [↗](#) )

## Discrete Mathematics

► Dr. Fahimeh Dabaghi-Zarandi, TA (Spring 2022 [↗](#) , Fall 2021 [↗](#) )

## Operating Systems

► Dr. Fahimeh Dabaghi-Zarandi, Grading TA (Spring 2022 [↗](#) )

**Python & Git & Github Instructor for The Summer Coding Bootcamp** [↗](#)

Vali-e-Asr University Scientific Association of Computer Engineering

Rafsanjan, Iran

Summer 2022

## Others.....

**Team Co-Founder & Game Developer** [↗](#)

Null References [↗](#) , Indie Game Development Team

Feb 2020–Sep 2021

## Research Interests

- Design & Analysis of Algorithms
- Graph Theory & it's applications
- Approximation & Randomized Algorithms
- Complexity Theory & Combinatorial Optimization
- Data Mining & Social Network Analysis
- Theoretical Machine Learning

## Selected Relevant Coursework

**Fundamental of Programming:** 20/20

**Theory of Machines and Languages:** 17.9/20

**Software Engineering:** 18.75/20

**Introduction to Data Mining:** 17.5/20

★ [Click here to see more](#) [↗](#)

**Advance Programming:** 16.5/20

**Engineering Mathematics:** 17.04/20

**Design and Analysis of Algorithms:** 18/20

**Statistics and Probability for Engineering:** 16.25/20

## Selected Projects

**Introduction to Data Mining** [↗](#)

Multiple assignments regarding to the Intro to Data Mining course

Spring 2022

Data Pre Processing, Apriori Algorithm, Data Visualization, K-Means, Agglomerative Clustering, DBSCAN, K-Nearest Neighbors Algorithm, Decision Tree, Support Vector Machines, Multi-Layer Perceptron

**Multiple projects regarding to Artificial Intelligence course** [↗](#)

Designing and implementation of:

Fall 2021

BFS, DFS, IDS, UCS (Uninformed Search Strategies), 8 Puzzle solver using A-star & IDA (Informed Heuristic Search Strategies), genetic algorithms, simulated annealing (Local Search), Min-Max, Alpha-Beta (Adversarial Search), classification of a dataset (Basic Machine Learning), knowledge representation using prolog

**SYMPHONYC: The database of a music streaming service similar to Spotify.** [↗](#)

One project regarding to the Database course

Fall 2021

Information Gathering, entity-relationship model, Relational Model, SQL codes, connecting the database to Django, analyzing and plotting data via matplotlib

**Uncertainty: an action-adventure space-shooter game built with Unity3D** [↗](#)

Null References [↗](#)

Spring 2021

○ Uncertainty is an action-adventure space-shooter game, and currently It's under development.

○ We have utilized the beta version of this game as our "Software Engineering Lab" course project.

**Two projects regarding to Introduction to Information Retrieval course** [↗](#)

Projects:

Spring 2021

The Scrapy Crawler (Crawling), Inverted Index Construction using BSBI Algorithm (Indexing)

**Multiple projects regarding to Design and Analysis of Algorithms course** [↗](#)

Designing and implementation of:

Fall 2020

The Closest Pair of Points Problem, Sudoku Solver, Tournament Scheduler, Huffman Coding, Bellman–Ford, Matrix Chain Multiplication, N-Queens Solver Traveling Salesman Problem

### Multiple projects regarding to Data Structures and Algorithms course [↗](#)

Designing and implementation of: Fall 2019  
the Red-Black Tree, the AVL Tree, the Trie Dictionary, Threaded Binary Tree, the Sparse Matrix via Linked List, the Rat in the maze problem

★ [Click here to see more projects](#) [↗](#)

## Test Scores

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TOEFL: 99/120 - Reading: 26/30, Listening: 29/30, Speaking: 23/30, Writing: 21/30

## Honors and Awards

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**Ranked 6<sup>th</sup> among undergraduate students of Computer Engineering in the 8th semester**

Vali-e-Asr University of Rafsanjan, Entrance Year of 2018

Spring 2022

**Ranked 1st among all teams participating from the Vali-e-Asr University**

for ICPC Asia Tehran - Internet Programming Contest

Spring 2023

**Candidate as top researcher among undergraduate student of Vali-e-Asr University**

Awarded by Vali-e-Asr University of Rafsanjan

Fall 2022

**Awarded by government undergraduate tuition waiver scholarship**

Vali-e-Asr University of Rafsanjan

★ [Click here to see more information about me](#) [↗](#)

## Extra Curricular Activities

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**Director of Research Assistant Committee** [↗](#)

Vali-e-Asr University Scientific Association of Computer Engineering

November 2022–Present

**Director of Teaching Assistant Committee** [↗](#)

Vali-e-Asr University Scientific Association of Computer Engineering

July 2022–Present

**Member of Teaching Staff** [↗](#)

Vali-e-Asr Collegiate Programming Contest (VCPC)

Sep 2021–Jun 2022

**Scientific Committee Member** [↗](#)

Vali-e-Asr University Scientific Association of Computer Engineering

May 2019–Jun 2021

## Skills

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**Programming Languages:** C, C++, Python, MATLAB, C#, Java, SQL

**Frameworks & Libraries:** Qt, Numpy, Pandas, Matplotlib, NetworkX, Scikit-learn, PyTorch

**Tools:** Jupyter,  $\text{\LaTeX}$ , Git, Markdown, Linux, Microsoft office, Obsidian

**Software Engineering:** Refactoring, Debugging, Unit Testing, Agile mythology, Pattern Design, SOLID

**Game Development:** Unity

**Soft Skills:** Team Work, leadership, Collaboration, Teaching, Research, Problem Solving

★ [Click here to see more in LinkedIn](#) [↗](#)

## Languages

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**Persian:** Native language

**English:** Fluent

## References

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Available upon Request