Mohammad Mehdi Afkhami Aqda

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Education

Vali-e-Asr University of Rafsanjan **Rafsanjan, Iran**
B.Sc. Computer Engineering *2018–Present*

- *Last 60 credits GPA without calculating summer semester: 16.6/20*
- *CGPA: 16.1/20, 131 credits*
- Major Area: Software Engineering.
- Thesis: Solving community detection problem using evolutionary algorithm in social networks
- Thesis grade: -/20

Publications

- Fahimeh Dabaghi-Zarandi, **Mohammad Mehdi Afkhami**, Mohammad Hosein Ashoori,Parsa KamaliPour, Mohammad Amin Ahmadi, "Solving community detection problem using evolutionary algorithm in social networks" *(will be submited soon)*
- Fahimeh Dabaghi-Zarandi, Mohammad Hosein Ashoori, Parsa KamaliPour,Mohammad Amin Ahmadi, **Mohammad Mehdi Afkhami**, "A deep learning approach to community detection." *(in preparation)*

Experience

Research

Undergraduate Research Assistant **Rafsanjan, Iran**
Department of Computer Engineering, Vali-e-Asr University of Rafsanjan *Jan 2022–Present*

- Supervisor: Dr. Fahimeh Dabaghi-Zarandi
- Field: Community Detection
- My responsibilities include: Gathering information, Reading papers, Programming, Testing the solution, Writing first draft of the paper.

Teaching

Undergraduate Teaching Assistant **Rafsanjan, Iran**
CE Department, Vali-e-Asr University of Rafsanjan *Mar 2021–Present*

- **Artificial Intelligence**
  Dr. Amir Hossein Hadjahmadi *Fall 2022*
- **Design and Analysis of Algorithms**
  Dr. Fahimeh Dabaghi-Zarandi *Spring 2022, Fall 2021, Spring 2021*
- **Data Structures**
  Dr. Fahimeh Dabaghi-Zarandi *Spring 2022, Fall 2021, Spring 2021*
- **Discrete Mathematics**
  Dr. Fahimeh Dabaghi-Zarandi *Fall 2021, Spring 2022*
- **Operating Systems**
  Dr. Fahimeh Dabaghi-Zarandi *Spring 2022*

Instructor for The Summer Coding Bootcamp
Vali-e-Asr University Scientific Association of Computer Engineering *Summer 2022*
Teaching game development & software architecture using Unity3D & Blender

Others

Team Co-Founder & Game Developer
Null References , Indie Game Development Team *Feb 2020–Present*

Research Interests

- Computer Graphics
- Machine Learning
- Simulation
- Procedural Content Generation
- Crowdsourcing
- Virtual Reality

Selected Relevant Coursework

Computer Graphics: 20/20
Advance Programming: 20/20
Discrete Mathematics: 18.36/20
Data Structure: 19.67/20
Artificial Intelligence: 20/20
Software Engineering: 18/20

⋆ *Click here to see more*

Selected Projects

Uncertainty
An action-adventure space-shooter game *Feb 2021–Present*
We utilized software architecture principles such as design patterns and agile methodologies to overcome challenges which included management of artistic and programming aspects of the game. At the moment, the game is in development

OpenGL Game
A 3D game made using OpenGL *Spring 2020*
Developed skills in writing C++ code for OpenGL and its shading language, as well as knowledge of 3D object formats

Automata Simulator
Simulator that supports DFA, DPDA, and Turing machines, for educational purposes *Spring 2020*
The logic was implemented using an observer pattern and the user interface was based on simple bezier curves

Multiple projects regarding to Artificial Intelligence course
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

Multiple projects regarding to Design and Analysis of Algorithms course
Implementation of: *Fall 2020*
The closest pair of points problem, Convex hull, Sudoku solver, Tournament scheduler, Huffman coding, Bellman–Ford, Matrix chain multiplication, N-Queens solver, Travelling salesman problem

Symmetry
A game made using Unity *Spring 2020*
game was designed to test our short-term memory for visual information

Quine McCluskey
Implementation of: *Spring 2019*
the Quine McCluskey minimization method for boolean functions, windows presentation form was used for user interface

Multiple projects regarding to Data Structures course
Implementation of: *Fall 2019*
Maze & Rat, Red-Black tree, AVL tree, Trie dictionary, Sparse matrix

⋆ *Click here to see more projects*

Test Scores

TOEFL: 88

Extra Curricular Activities

Member of Teaching Assistant Committee
Vali-e-Asr University Scientific Association of Computer Engineering *Jul 2022–Present*
Vali-e-Asr University of Rafsanjan

President of Executive Staff
Video Games Association *Oct 2020–Jun 2021*
Vali-e-Asr University of Rafsanjan

Member Of Scientific Committee
Computer Engineering Scientific Association *May 2019–Jun 2021*
Vali-e-Asr University of Rafsanjan

Computer skills

Art & Game Development: Unity, Blender, Krita, Godot(basic)

Frameworks & Libraries: OpenGL, Numpy, Pandas, Matplotlib

Tools: Jupyter Notebook, LaTeX, Git, Markdown, Linux, Obsidian, MS Office

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

Software Engineering: Refactoring , Debugging, Unit Testing, Agile Methodology, Design patterns, SOLID

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

Languages

Persian: Native language

English: Fluent

References

Available upon Request