Reza Mashayekhi

Software Developer

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Highlights

- Skilled Software Developer with 5+ years of experience in programming gained through a combination of academic and industry exposure. Proficient in Backend Development, OOP, Data Structures, Databases, Testing and Debugging, APIs, and Version Control.
- Backend Developer Intern at Oracle.
- Ranked 1st GPA Among the Graduated CS Students of Amirkabir University of Technology (2020, Iran).
- Awarded International Mathematics Competition (IMC 2010 Korea) Certificate - Only 20 middle school students, after two-stage competitive acceptance exams, were selected from Iran to participate in IMC 2010 Korea.

Work Experience

Backend Developer Intern   11/2022 - 03/2023
Oracle, Remote, Canada

- Enhanced the performance of the Data Studio web application through analysis and optimization of SQL queries (up to $5\times$ **fewer** queries in one of the most commonly used endpoints).
- Developed a query counter filter and assessed queries over 130 test classes while resolving conflicting tests. This resulted in finding endpoints that need improvement and helped avoid unnecessary queries in the future.
- Resolved bugs in web services and implemented automated tests to ensure quality and stability.
- Java, REST API, Spring Boot, SQL, Hibernate, Unit Testing, Git, Jira, Confluence, Multi-threading

Backend Developer RA   05/2021 - 10/2022
University of Alberta and Alberta Machine Intelligence Institute, Edmonton, Canada

- Designed and developed new different ways to improve the FastMap heuristic ⏾.
- Tested new heuristics against a large number of standard benchmark problems on 395 maps in parallel.
- Attained up to $2.5\times$ **better** performance. (useful in pathfinding of Video games)
- C++, AI, Cloud Computing, Bash, Python, Automated Testing, Parallel Computing

Teaching Assistant   01/2021 - 04/2021
University of Alberta, Edmonton, Canada

- Introduction to the Foundations of Computation II - Python.

Education

M.Sc. in Computer Science   01/2021 - 10/2022
University of Alberta, Edmonton, Canada

B.Sc. in Computer Science   09/2016 - 07/2020
Amirkabir University of Technology, Tehran, Iran

Skills

Languages:	Java, Python, C++, JavaScript, C, Bash, SQL, XML, HTML5, CSS
Domains:	Object Oriented Programming (OOP), Data Structures
Tools:	Git, RESTful API, Linux, MySQL, JSON, Jira, Confluence, Bitbucket
Frameworks/libs:	JUnit, Mockito, Hibernate, Spring, React
Soft Skills:	Problem-Solving, Detail-Oriented, Communication, Time Management

Selected Projects

Simulated Different 3D Objects Using Ray Tracing ⍉

- Simulated Cylinder and Tetrahedron using Ray Tracing.
- Intro to Computer Graphics course - JavaScript, WebGL, HTML

Artificial Intelligence for the Reversi Board Game ⍉

- Implemented the AI system of the Non-player-character using the Minimax algorithm. A player can play against the computer.
- AI course - Java, Algorithms

Designing and Creating A 3NF Database From YAGO Datasets ⍉

- Extracted information from raw files on max plank institute website. Processed and Clustered TSV files with Python and MySQL. Designed and created a 3NF database.
- Database course - SQL, MySQL, Python, Relational Database (RDBMS) Design

A 2D Version of the Range-Tree Data Structure ⍉

- Implemented a 2D version of the Range Tree. Queries are asked in the form of rectangle coordinates.
- Data Structures course - Java

A 2D Platformer Video Game ⍉

- A 2D platformer video game built with Gamemaker using Scrum methodology for Agile Software Development.
- Software Design course - GameMaker, Agile Methodology (Scrum)

A Bilingual WordNet ⍉

- Built a bilingual Wordnet by doing word sense disambiguation (WSD) on an English-Persian bitext.
- Computational Semantics course - Python, Java, XML, NLP, NLTK

Publication

R.Mashayekhi, D.Atzmon, and N.Sturtevant 2023. Analyzing and Improving the Use of the FastMap Embedding in Pathfinding Tasks - *AAAI Conference on Artificial Intelligence.* In press.