AMIRHOSSEIN PASHAEEHIR

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GitHub

LinkedIn

EDUCATION

Amirkabir University of Technology   *Sept 2018 - Present*
4th Year, BS Degree   Overall GPA: 18.89/20
Department of Computer Engineering

Allame Helli 1 High School   *Sept 2014 - Sept 2018*
Diploma of Theoretical Mathematics and Physics

RESEARCH EXPERIENCE

Research Assistant at Amirkabir University of Technology   *Sept 2021 - Present*
Under supervision of M. Momtazpour

Working on designing a scheduler for mixed edge and cloud Kubernetes clusters. The proposed scheduler aims to minimize resource fragmentation in the edge cluster to decrease average response time by increasing resource utilization on the edge.

PROFESSIONAL EXPERIENCE

Full Stack Developer at a hedge fund in Singapore   *June 2022 - Present*
Contributing to developing a package manager for C++ using Django for the back-end and Bazel for client-side library management.

Developing a light weight failure-robust job scheduler for multi-layer clusters for error aggregation purposes using Go.

Developing a concurrent arithmetic expression compiler for processing time series data streams. The parser is implemented in yacc, lex, and Go.

Full Stack Developer at Quera   *Aug 2019 - Sept 2020*
Contributed to developing Quera Colleague platform, written in Django Python for the back-end and React, Redux JS for the front-end.

Advanced Python Course Writer at Quera   *March 2019 - Aug 2019*
Wrote a Python course from beginner to advanced in Quera Colleague.

C++ Developer at Fanap Soft   *Nov 2018 - March 2019*
Contributed to developing PlayPod (first cloud gaming platform in middle east) Windows client, which is written in C++ using ImGui.

HONORS AND AWARDS

ICPC, International Collegiate Programming Contest
The International Collegiate Programming Contest is the most prestigious programming contest for college students.

- **24th team** in the 44th ICPC World Finals, Moscow, Russia   *2021*
  Top 0.2% among more than 45,000 students from all over the world.

- **2nd, 4th team** in Regional Contests of ICPC West Asia Region, Tehran site, respectively in 2019 and 2018.
  Top 1% among more than 300 teams that participate in this contest every year.

- National Countrywide University Entrance Exam(aka Konkour), Iran   *2018*
  Rank top 0.1% in among more than 170,000 participants.

NOTABLE PROJECTS

Sal
The Sal compiler compiles simple python programs to Sal files which are executable by the Sal VM. The Sal file describes the python program as a directed acyclic graph (DAG) capable of generating infinite graphs with similar features as computation graphs.

My hackerearth problems
My problems judges (generator, validator, checker, and solution) in hackerearth.com contests. Problems' difficulty varies from easy to hard. the problem set includes graphs, combinatorics, constructive, math, strings, and approximate problems.

NUMEX
The pure functional programming language (NUMEX) interpreter, built with Racket. (Programming languages course project)

Search engine
A search engine for retrieving news documents. Both statistical and word embedding approaches are used for answering users' queries. (Information retrieval course project)

GPU-accelerated neural network
A GPU-accelerated version of genann. Memory coalescing, vectorize operations, reduction, and other techniques are used in order to distribute the processing over GPU. A $2\times$ speedup is gained on an MX450 Nvidia GPU. (Multicore programming course project)

TEACHING ASSISTANT EXPERIENCE

Head TA, Programming Languages, M. S. Fallah	*Fall 2021*
Head TA, Data Structures and Algorithms, H. Hoorfar	*Fall 2020*
Head TA, Algorithm Design, H. Hoorfar	*Spring 2021*
Electric and Electronic Circuits, M. Momtazpour	*Fall 2021*
Microprocessor and Assembly, H. Frabeh	*Spring 2022*

RELEVANT COURSES

University Major Courses: Program Analysis, Programming Languages, Theory of Machines and Languages, Principles of Compiler Design, Multicore Programming, Principles of Cloud Computing, Computer Networks, Data Mining, Principles of Computational Intelligence, Information Retrieval, Research and Technical Presentation

SKILLS AND QUALITIES

Programming Languages: Expert in C++, Python. Working knowledge in Go, C, Haskell, Racket, Javascript, Java, SQL, LaTeX.
Libraries: Expert in STL, Redux. Working knowledge in GLPK, ImGUI, Numpy, Pandas.
Frameworks: Expert in Django, React JS.
DevOps: Developed some modules for Kubernetes. Working knowledge in Git, Linux, Bash.
Software Engineering: Familiar with object-oriented design patterns, concurrency patterns, functional programming, and procedural programming.
Theoretical Background: Expert in design of algorithms, computation theory, data structures, and discrete mathematical fields such as graph theory and combinatorics suggested by awards in ICPC.
Languages: English (Full professional proficiency), Persian (Native).