Mohammad Hosein Nemati

DevOps Engineer

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Education

Master of Computer Science — *Sep 2021 – Aug 2024 (Expected)*
University of Tehran — *Teharn, Iran*
Thesis: Automatic speech recognition in the air traffic control domain
Total GPA: 3.80/4

Bachelor of Computer Science — *Sep 2016 – Jan 2021*
Kharazmi University — *Tehran, Iran*
Last two years GPA: 3.46/4
Total GPA: 3.12/4

Diploma of Mathematics — *Sep 2012 – Aug 2016*
Mandegar Alborz High School — *Tehran, Iran*
Total GPA: 4/4

Areas of Interest

- High Performance Computing and Parallel Processing
- Artificial Intelligence and Machine Learning
- Deep Learning and Artificial Neural Networks
- Natural Language Processing
- Brain Signal Processing

Relevant Courses (Graduate courses are indicated by *)

- Digital Image Processing * — *17/20*
- Natural Language Processing * — *19.12/20*
- Advanced Computation Theory * — *18.5/20*
- Advanced Theory of Algorithms * — *14.75/20*
- Machine Learning * — *18.45/20*
- Artificial Intelligence — *19.1/20*
- Computer Graphics — *20/20*
- Principles of Operating Systems — *20/20*
- Principles of Computer Systems — *20/20*
- Principles of Logic and Set Theory — *20/20*
- Compiler — *20/20*
- Database — *19/20*

Licenses & Certifications

Brain Mapping Spring School	National Brain Mapping Laboratory	*Apr 2023*
Certified Kubernetes Administrator (CKA)	Udemy	*Oct 2020*
Kubernetes Certified Application Developer (CKAD)	Udemy	*Aug 2020*
Docker - SWARM - Hands-on - DevOps	Udemy	*Jun 2020*
Cisco Certified Network Associate (CCNA)	Tehran Institute of Technology	*Nov 2016*

Honors and Awards

- TODO: Master's inter university rank — *2024*

- Ranked 18st in the Iranian university entrance exam for the Master's Degree in Computer Science *2021*
- TODO: Bachelor's inter university rank *2021*
- Ranked top 1% among more than 190,000 students who participated in nationwide entrance examination of undergraduate studies in Iranian universities *2016*

Technical Skills

Programming Languages	C/C++, C#, Java, JavaScript, TypeScript, Python, MATLAB, Erlang
Cluster Orchestrators	Docker, Kubernetes, Nomad, Slurm

Research Experience

Advanced Programming *Feb 2019 – Jun 2019*
Prof. Arash Ahadi *Kharazmi University*

- Teaching memory management in C, Object-Oriented paradigm in C (OOC)
- Teaching basics of computer graphics and OpenGL programs in C
- Graded and provided homework feedback for mentored students

Teaching Experience

Advanced Programming *Feb 2019 – Jun 2019*
Prof. Arash Ahadi *Kharazmi University*

- Teaching memory management in C, Object-Oriented paradigm in C (OOC)
- Teaching basics of computer graphics and OpenGL programs in C
- Graded and provided homework feedback for mentored students

Basic Programming *Sep 2018 – Jan 2019*
Prof. Saeed Reza Kheradpisheh *Kharazmi University*

- Teaching basic data-structures and algorithms in Java
- Organized homeworks for mentored students

Work Experience

Shipup.net *May 2022 – Present (Full-time)*
DevOps Engineer *Tehran, Iran*

- Maintaining and refactoring old bare-metal infrastructure
- Designing and architecting new cloud-based infrastructure
- Automating full and differential and incremental backups (pgbackrest)
- Setting up Grafana monitoring stack (LGTM - Loki, Grafana, Tempo, Mimir, Agent)
- Writing Grafana dashboards and alerts using promQL, logQL
- Provisioning entire new infrastructure using Terraform (IaC)
- Managing multi-cloud resources for reducing the costs (Hetzner, AWS)
- Using GitOps principle for CD (Continuous Deployment)
- Writing Docker Swarm compose manifests
- Setting up CI/CD using GitlabCI, Docker

University of Tehran *Jul 2022 – Jun 2023 (Part-time)*
HPC Engineer *Iran, Tehran*

- Setting up HPC cluster using Slurm Workload Manager & Pyxis
- Setting up Slurm accounting and quota management
- Provisioning entire cluster using Terraform (IaC)
- Working with HPC containers (Nvidia Enroot, Nvidia Pyxis)

Pishgam Vira *Mar 2022 – Jun 2022 (Part-time)*
DevOps Engineer *Iran, Tehran*

- Implementing CI/CD for projects using GitHub Actions & Docker
- Provisioning deployment servers using Docker Swarm
- Automate release process using semantic-release

Mobtaker Darya *Nov 2019 – Jun 2022 (Full-time)*
Full-stack Developer & DevOps Engineer *Iran, Tehran*

- Maintaining and developing CCS project (Container Control System)
- Implementing CCS reports using Crystal Reports and SQL Server
- Developing Shaahin project (Cargo trucks traffic control)
- Implementing Shaahin web client using React.js
- Implementing Shaahin backend using Loopback.io, NodeJs, TypeScript, PostgreSQL
- Implementing CI/CD for projects using GitlabCI & Docker
- Provisioning deployment servers using Kubernetes
- Writing Kubernetes manifests and packaging the in Helm Charts
- Managing and coding entire infrastructure using Terraform (IaC)

TIS *Mar 2019 – Oct 2019 (Part-time)*
Software Developer *Iran, Tehran*

- Maintaining and refactoring MFD project (Managed-Funds System)
- Replacing Process360 with ProcessMaker as BPMS core
- Implementing new UI using React.js and TypeScript
- Implementing dynamic forms in client (Forms schema loaded from BPMS)

Farmeal *Jun 2019 – Sep 2019 (Part-time)*
React Developer *Iran, Tehran*

- Implementing food-shopping UI using React.js and TypeScript
- Interacting with backend GraphQL API's using Apollo Client
- Implementing CI/CD for project using GitlabCI & Docker

Self Employed *Dec 2013 – Aug 2018*
Full-stack Developer *Iran, Tehran*

- Socket programming in C & Erlang, implementing hole punching for P2P direct connections
- Implementing Desktop Chat Application using Qt, C++, QML
- Implementing Android Chat Application using Java, C (JNI), AndroidStudio
- Using FFMPEG to implement audio & video streaming using native API's and raw sockets

Notable Projects

Natural Language Processing *Fall 2022*
Prof. Bagher Babaali

- Training N-Gram Language Model on Hamshahri v2 dataset (Persian Newspaper) and computing perplexity using NLTK
- Implementation of Hidden-Markov-Model from scratch in python (Baum Welch Algorithm, Viterbi Algorithm)
- Part-of-Speech Tagging using Hidden-Markov-Model
- Applying TF-IDF and LSA for Text Classification on Persica dataset
- Text Classification on Persica dataset using ParsBERT
- Part-of-Speech Tagging on Persian dataset using ParsBERT

Digital Image Processing *Fall 2022*

Prof. Hedieh Sajedi

- Applying Geometrical Operation, Histogram Equalization, Filtering in Spacial and Frequency domain, and Morphological Operation using OpenCV
- Blast Cell Image Classification into Normal and Abnormal using a CNN Model
- CIFAR10 Classification using a Nested-Hierarchical Transformer (**NesT**)

Machine Learning *Fall 2022*

Prof. Bagher Babaali & Prof. Hedieh Sajedi

- Implementation of perceptron from scratch using Python and NumPy and applying it on Polynomial Regression problem
- Training perceptron for Money Classification into Real and Fake classes
- Implementation of Linear-Discriminant-Analysis using Python and NumPy and applying it to reducing dimension and visualizing data
- Implementation of Principal-Component-Analysis using Python and NumPy and applying it to Face Image dataset compression and reconstruction
- Applying Logistic Regression for a binary classification task on Income dataset
- Applying K-Means clustering method on dataset and visualizing clusters
- Activity Recognition using Wearable Physiological Signal Features using Decision Tree, Random Forest, XGBoost, and SVM Classifiers
- Parkinson's Disease Detection using Speech Signal Features using Decision Tree, Random Forest, XGBoost, SVM, MLP, ELM, and Autoencoder
- Heart Disease Prediction from Health Indicators using Decision Tree, Random Forest, XGBoost, SVM, MLP, ELM, and Autoencoder

Advanced Computation Theory *Fall 2022*

Prof. Majid Alizadeh

- Implementation of Davis Language interpreter in python
- Implementation of Davis Language encoder and decoder for Universal Programs

Operation Systems *Fall 2020*

Prof. Saeed Reza Kheradpisheh

- Implementation of Cross Platform Async Socket Server (TCP, UDP) in C
- Implementation of Thread Pool and Process Pool design patterns in C using pthread library
- Implementation of Cross Platform IPC Tools (Semaphores, Shared Memories, Message Queues) in C

Compiler Design *Fall 2020*

Prof. Somaye Arabi

- C Language JSON parser and packer library
- Mini C Language compiler using Lex and Yacc

Data Structures and Algorithms *Fall 2020*

Prof. Somaye Arabi

- Postfix and Prefix parser using Java
- TypeScript Memoization library (NPM package)
- Huffman Compressor desktop application using C++, Qt, QML
- Implementation of Basic Data Structures (ArrayList, LinkedList, Stack, Queue, Deque) in C

Advanced Programming *Fall 2020*

Prof. Keivan Borna

- Implementation of 2048 Game in Java
- Implementation of Maze Game in Java

- Implementation of Library Manager using Java, JavaFX
- Implementation of Govara Assets Manager using C++, Qt, QML

Published Projects

Chapar Messenger (ChaM) *Fall 2022*
Open Source

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Languages

Persian	Native
English	Fluent (TOEFL : To be taken on November 13th)