Amir Hossein Bavand

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Summary

- Self-motivated, passionate, and hardworking Software Engineer with M.Sc. in Computer Science and industrial experience in Web development and CI/CD pipeline optimization
- Experienced in SQL and NoSQL database management, AWS cloud services, version control and CI/CD

Education

09/2019 – 8/2021

Concordia University   Montreal, Canada
Master of Science (M.Sc.), Computer Science   Adviser: Dr. P. Rigby
Thesis: *"The impact of parallel and batch testing in continuous integration environments"*

09/2014 - 11/2018

Amirkabir University of Technology   Tehran, Iran
Bachelor of Science with honors, Computer Engineering   Advisor: Dr. E. Nazerfard
Final Project: *"Sentiment analysis and opinion mining on Persian microblogging data: a comparative study of Bayesian and support vector machine classifiers"*

Experience

Work Experience

06/2021 – present

Software Engineer, Wesley Clover International, Ottawa, Canada
- Designing and developing test-driven serverless microservices to fully automate deploying docker containers to edge devices using TypeScript, MongoDB, Jest, and Cypress various AWS services including but not limited to EC2, SQS, Lambda functions, API Gateway, EventBridge, AWS IoT, and Secret Manager, and AWS CDK for infrastructure as code
- Creating and deploying various AWS resources including but not limited to EC2, SQS, S3, Lambda functions, API Gateway, EventBridge, AWS IoT, and Secret Manager using CDK for infrastructure as code
- Designed and implemented an alert service to send notifications and alerts to end users using the above technologies
- Implemented a project microservice to add project level access for users of our platform
- Easing up user authentication by leveraging auth0 and auth0 management APIs
- Designing and Developing of the Front-end of the implemented APIs using React, React Testing Library, and Material-UI

09/2020 – 06/2021

Software Research Intern, Ericsson, Ottawa, Canada
- Designed and developed new algorithms to reduce testing time of commits by 14% and wrote a research paper for publishing the new batch testing algorithms
- Analyzed Ericsson testing infrastructure data in order to reduce resource consumption using python, Pandas and PyTorch

01/2019 – 04/2019

Machine Learning Intern, Rahnema co, Tehran, Iran,
- Implemented a recommender system for a push notification service to detect potential users for a notification using Python as a member of machine learning team
- Solved Kaggle Humpback Whale Identification challenge using Siamese and convolutional neural networks in python as part of training

06/2017 – 09/2017

Machine learning Software Intern, *Adanic Inc.*, Tehran, Iran,
- Studied feasibility of profiling income and expenses of a bank customers based on their transaction data using classification and clustering algorithms in Python as a member of data analysis team
- Involved in prototype development of a personal spend manager based on monthly budget of customers using Python as a member of web development team

09/2019 – 06/2021	Research Experience **Research on CI/CD and Flaky tests,** Empirical Software Engineering Laboratory, Concordia University, Montreal, Canada • Reduced the CPU time and the feedback time of test runs by batching and parallelizing the test cases • Quantified flaky tests based on their frequency of failures to reduce unnecessary investigation of test failures
09/2018 – 01/2018	Leadership Experience **Course Instructor,** Introduction to programming laboratory, Amirkabir University of Technology, Tehran, Iran • Teaching C programming language to more than twenty students in weekly interactive lab sessions Preparing course materials for presentation in the class
02/2017 - 06/2017	**Lead Teaching Assistant**, Principles of Database Design, Amirkabir University of Technology, Tehran • Taught more than forty sophomore and junior students in weekly tutorial sessions • Marked home works, quizzes, projects, midterm and final exams

Selected Courses

- Database Design, Algorithm Design and Data Structures, Software Security, Operating Systems, Computer Networks, Software Testing, Introduction to DevOps, Object Oriented Programming, Natural Language Processing, Data Mining, Artificial Intelligence, Big Data, Complex Network Algorithms, Stochastic Processes

Technical Skills

- *Programming Languages:* Python, JavaScript, Java, C/C++
- *Database:* PostgreSQL, MnogoDB, MySQL
- *Web Development:* HTML, CSS, React, TypeScript, Flask, Express
- *Cloud Services:* AWS, Google Cloud Kubernetes Engine
- *Cloud and Containerization tools:* Docker, Kubernetes
- *Operating Systems:* MacOS X, Linux, MS Windows
- *Frameworks and Scientific Tools:* PyTorch, Pandas, NumPy, Sickit-learn, Matplotlib, Keras

Research Papers

- Mohammad Javad Beheshtian, **Amir Bavand**, Peter Rigby. 2021. **Software Batch Testing to Save Build Test Resources and to Reduce Feedback Time.** IEEE Transactions on Software Engineering
- **Amir Bavand** and Peter Rigby. 2021. **Mining Historical Test Failures to Dynamically Batch Tests to Save CI Resources.** 37th International Conference on Software Maintenance and Evolution (ICSME 2021), Luxemburg City