Sarim Zafar

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Skills

- Java, Python, Golang, C++, JavaScript, Ruby
- Tensorflow, Sklearn, OpenCV, Rails, NodeJS, Watson APIs
- Strong experience working with Agile methodologies, TDD/BDD, pair programming and tools Git, Bitbucket, JIRA

Professional Experience

IBM Cloud Garage — Software Developer - *Toronto* July 2018 - present

- Working on an AI prototype that performs real-word tasks such as ordering coffee over phone using Watson and NodeJS

Uber Technologies — Software Engineering Intern - *San Francisco* Summer 2017

- Developed a ***Go/RPC*** based microservice to automatically name arbitrary geographic clusters around the world
- Achieved response speeds of *microsecond* order owing to a well-designed service architecture and smart algorithms
- Saved Uber Operations hundreds of hours otherwise spent on naming these clusters

Think Research Corp. — Software Engineering Intern - *Toronto* Fall 2016

- Decomposed a monolith Rails application into resilient microservices and improved performance by ***55%***
- Refactored application front-end in a test-driven manner using React-Redux and Enzyme

Deloitte Innovation Lab — Software Product Prototyper - *Kitchener* Winter 2016

- Developed a multi-platform web application that assists agile coaches in better assessing team transitions
- Built the application using Node/Express and maintained real-time data flow using Socket.IO and Angular

Projects

Foosfighter – *Python, C++, OpenCV*

- Built an automated foosball table capable of training human players by substituting as a competitive opponent
- Developed the vision component to track and predict ball movement using OpenCV at real-time speeds
- Achieved **93%** frame processing rate by building a custom thread-safe queue for concurrent processing
- Awarded the Kohar Family Award for Best Mechanical Design Analysis

Autonomous Robotics – *C++, ROS*

- Implemented localization, path planning and path following for a Turtlebot using C++ in ROS
- Localized the robot using Monte-Carlo localization (particle-filter) and executed path movement using a PI controller
- Planned robot path using Probabilistic Roadmap algorithm and computed shortest path via Dijkstra

Digital Pathology Classification – *Python, Sklearn*

- Classified pathological images using histogram based descriptor to extract features and train using a meta-classifier
- Achieved **92.85%** classification accuracy on the test data and ranked 12th on the Kaggle leaderboard

Research and Teaching

Research Material

- R[G] Sharma, Zafar, Tizhoosh, Babaie 2018. *Facial Recognition using Encoded Local Projections*
- R[G] Soleiman, Zafar 2017. *Moving Object detection using Background Subtraction*

Undergraduate Research Assistant - Video Processing Lab University of Waterloo

- Worked under Prof. Zhou Wang on video processing and encoding algorithms for two consecutive terms

Teaching Assistant University of Waterloo

- Tutored first year courses such as Algorithms, Calculus, and Circuits for the last 8 terms

Education

University of Waterloo - Bachelor of Applied Science in Mechatronics Engineering Completed May 2018

- Graduated with *Distinction* and a minor in Cognitive Science GPA 3.84