Sarim Zafar

sarimzafar.io · /sarimzafar · zafarhsarim@gmail.com · in/sarimzafar

Skills

- Ruby, Java, Python, Golang, C++, JavaScript
- Rails, NodeJS, Sklearn, OpenCV, 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 — 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 — 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, Deloitte Communitech Space   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
- Wrote a custom thread-safe queue to allow for concurrent frame IO and processing to minimize initial lag by **70%**

 Autonomous Robotics – *C++, ROS*
- Implemented localization, path planning and path following for a Turtlebot using C++ in ROS
- Localized the robot Particle-filter and executed path movement using a PI controller
- Planned robot path using Probabilistic Roadmap algorithm and computed shortest path via Dijkstra

 Self-Driving Cars - Path Planning – *C++*
- Simulated path planning for a car driving on a virtual highway within the speed limit and without any collisions
- Utilized car's sensor data to predict and avoid collisions with other cars on the highway

 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

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*

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