MOJAN JAMALZADEH

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EXPERIENCE

Backend Developer Co-op

Later 📅 May 2020 – August 2020

- Designed and built a two-factor authentication system in the Ruby on Rails framework that integrated well with the PostgreSQL database. The feature is now available and used by all admin users.
- Modified the authentication flow on the backend and the API to accommodate for JWT authentication across mobile and web clients to improve the security of the app.
- Worked closely with the backend, product and design team to continuously deploy new features and improve the app utilizing Ruby on Rails, PostgreSQL, various AWS services (Kinesis, ECS, SQS and Cloudwatch), and continuous integration tools (CircleCI, Heroku) following the Agile framework.

Software Engineering Co-op

Philips 📅 Jan 2019 – April 2019

- Developed a communication module in C to integrate traditional alert devices within the cloud-based system and modified the backend infrastructure to accommodate the signals received by the devices utilizing NodeJS and MySQL.
- Designed a database module in JavaScript to poll and transfer alerts from the existing software (SmartCare) database to the cloud service to enable reporting. Modified the backend to store the alerts in a DynamoDB table to be polled when a reporting request is received.
- Tested and installed the database module on test communities which then was widely deployed to senior communities across North America.

TECHNICAL SKILLS

Ruby on Rails   JavaScript   Node JS   Java   C
C++   Git   Python   SQL   AWS   MATLAB
OpenCV   Unity   Docker   Linux   Tensorflow

EDUCATION

The University of British Columbia

Bachelor Applied Science 📅 Sep 2017 – May 2022

- Engineering Physics, BASc (average 87.4%)
- Teaching Assistant in the Physics Department
- Completed a software construction and object-oriented programming course that consisted of many mini projects to implement various data structures.
- Completed a foundational course in C, design course in C++, and a machine-learning and computer vision course in Python.
- Completed an operating systems course in C, through which I designed the virtual memory system and implemented various system calls of a simple OS.

PROJECTS

Adaptive Image Analysis

- Developing a blood perfusion model on C++ to detect cancerous tissue in the liver.
- The model will be integrated into the open-source toolkit for medical physics used for image analysis at BC Cancer Agency.

License Plate Detection and Navigation Machine Learning

- Developed an agent using Python to navigate through a simulated course, detect license plates of parked cars, and avoid pedestrians utilizing a state machine with image feed as an input and velocity commands as outputs.
- Created a convolutional neural networks (CNN) using Keras and Tensorflow frameworks and an image processing node using OpenCV to interpret license plates and parking numbers and verify them with a remote server.

Autonomous Robot

- Designed, prototyped and built an autonomous robot to navigate a course, retrieve and deposit objects at specified locations during a competition against other robots.
- Developed a state machine on C, taking input data from sensors (QRD and sonar) and limit switches to develop strategies to optimize object retrieval.

Rocket Avionics System Development

- Designed and built prototype boards for the avionics system of the 30K-feet competition rocket.
- Designed the module to poll data from various sensors including barometer, and accelerometer and to control the camera within the state machine of the rocket.
- The rocket deployed the parachutes successfully and captured the whole flight on the camera during the 2019 Spaceport America Cup competition in 2019 in New Mexico.

Inoculated Game

- Developed a two-player puzzle game on Unity using C#.
- Worked with artists and musicians to integrate art and sound into the game.
- Won the Best Concept Award at the UBC Game Development 2020 showcase.

HealthBud App

- Developed an app to connect women who share a common goal of exercising during the cmd-f 2020 hackathon in less than 24 hours.
- Integrated Firebase authentication and Firestore database management for profile management on Android Studio.
- Developed a fitness partner matching algorithm on JavaScript.