Mitch Gaines

www.MitchGaines.com

Email : gainesmitch2@gmail.com
Mobile : (281) 236-0971

Experience

- **Symbotic** — Wilmington, MA
  Software Engineering Intern — *May 2019 - August 2019*
  - **Robotics Software Development**: Developed software using the .NET Framework and test driven development for warehouse robots.
  - **Back-end Development**: Developed software optimizations for palletizing and depalletizing of cases as well as robot structure navigation.
- **Corista** — Concord, MA
  Software Engineering Intern — *May 2017 - December 2018*
  - **Patent No. US 15/730,296 - Virtual Slide Stage (VSS) Method For Viewing Whole Slide Images**: Utility patent for a hardware device which communicates with existing digital pathology environment in order to allow for navigation of a high-resolution virtual slide the same way a pathologist would navigate a slide under a microscope.
  - **Product Design & Development**: Designed and manufactured initial prototypes of Virtual Slide Stage device as defined in the above patent.
  - **Electron Application**: Led development of hybrid electron application based on existing environment to allow for native communication with computer serial port.
  - **DICOM**: Extended support of Pathology Workflow Environment to DICOM whole slide images according to Sup. 145 in back-end Java environment.
  - **Back-end Profiling & Optimization**: Profiled back-end image server for parsing and serving Whole Slide Images to the front-end. Migrated image server to asynchronous restful API and developed testing suite .
- **WPI Office of Technology Commercialization** — Worcester, MA
  Intern — *September 2019 - Present*
  - **Licensing Consultation**: Work directly with student and faculty inventors in order to assist with writing of product summaries for use in licensing agreements and utility patents.

Projects

- **Multi-DoF Prosthetic Control with Ultrasound** — Worcester Polytechnic Institute
  Team Lead — *August 2019 - Present*
  - **Robotics Control**: Using input from ultrasound and EMG sensors and performing inverse kinematics operations in order to determine finger movements and wrist rotation.
  - **Machine Learning**: Several machine learning models are being tested with in order to classify fluid finger movements from B-mode ultrasound images using keras and tensorflow.
- **Pressure Ulcer Prevention System** — Worcester, MA
  Lead Engineer — *Jan 2018 - Present*
  - **Patent No. US 62629223 - Dynamic Pressure Sense, Alleviation and Redistribution**: Provisional patent-pending for a device which sits on top of wheelchairs as a seat cushion and prevents pressure ulcer formation on users. This product was geared towards individuals with neurodisability.
  - **Node.js & MongoDB Back-end**: Developed corresponding back-end for the aforementioned mobile application in Node.js with a MongoDB database.
  - **Electrical Engineering**: Designed and manufactured pressure sensitive cushion to identify specific areas of pressure in the x-y plane in an attempt to detect pressure ulcers.
- **Brigham & Women's Hospital Pathfinding Kiosk** — Worcester Polytechnic Institute
  Lead Software Engineer — github.com/MitchGaines/CS3733D18_SarcasticSquonks — *March 2018 - May 2018*
- **Web-based 3D STL Viewer** — Worcester Polytechnic Institute
  Engineer — github.com/MitchGaines/model-viewer — *December 2018*

Education & Skills

- **Worcester Polytechnic Institute** — Worcester, MA
  Bachelor of Science in Robotics Engineering; GPA: 3.39/4.0 — *May 2020*
- **Leadership**: Lambda Chi Alpha - Pi Zeta Chapter Secretary & SCUBA Club Vice President