JAWAD IQBAL

Cambridge, MA - jawsqb@gmail.com - https://jawaffles.github.io/

I am a software developer, passionate about creating useful tools and drawing from a breadth of experience ranging from manufacturing and mechanical design to data science and web development

EDUCATION

University of Georgia

Masters Mechanical Engineering (Research Focus in Robotics/Mechatronics) | Graduation: May 2020

BS Mechanical Engineering (Emphasis in Modeling and Controls) **|** May 2019 | GPA:3.5 | EIT Certified

EXPERIENCE

Lockheed Martin Operations Engineer
<div align="right">Aug 2020 - Present</div>

- Leading project to develop an application for executive leadership to evaluate site utilization for various program opportunities. Application involves improving internal processes for aggregating data. (**Python , Dash/Plotly)**

- Project Lead for a 7 person team to develop standards for aggregating metrics across all of Aero Operations. Developed a react based dashboard for leadership to view metrics as well as associated tableau dashboards, counter measure charts (**Sharepoint, React, NodeJS, AWS)**

- Project lead managing a $300k IRAD and 5 person team to develop a search and semantic query assistant for easier search through design documentation. **Django**, **Elasticsearch, AWS , RASA. Gitlab Pipelines, Agile Project Management**

- Proposed and solo developed an enterprise wide responsive web app for performing audits
  - Over 200 unique users, 3000+ form submissions and reducing 461 hours/month of manual work enterprise wide.
  - App development using **Django, JavaScript, Container Deployment, Pivotal Cloud Foundry, AWS, Gitlab Pipeline, Bootstrap**

- Developed a computer vision web app that uses optical character recognition to extract serial-id text from a tool and cross-reference with tool inventory database to log inventory; reducing time to audit a tool box from 1 hr to 15 minutes. **Dash Plotly, AWS, Tesseract OCR**

- Developed a variety of exploratory web applications for production operations to attack human paper processes (**NodeJS, React)**
  - App to record PPE compliance for data driven corrective action around personal protective equipment
  - Flight Checklist form: Converted a paper form into a web app where certain steps are validated and enforced ensuring completion. At form completion a PDF report is generated and emailed to user for records

Masters Graduate Researcher

- Designed and developed a differential drive autonomous robot. **Mechatronics, SBC, Linux, Sensors, ROS**

- Developed autonomous control and path planning systems in **Python** and **C++** that utilizes forward and inverse kinematics of an unmanned differential drive ground vehicle for autonomous GPS waypoint navigation.

- Designed complex CAD assemblies in **Fusion360/Solidworks** for UGV Sensor Mounting and robot arm.

LEADERSHIP

BSAIL Robotics Systems Lead

- Supervised 15+ undergraduate students on interdependent robotics projects that fulfilled research lab's goal of developing autonomous robot technologies for surveying and data collection
  - CURO Research: Custom Low Altitude Surveying Drone using low cost multispectral cameras.
  - Senior Capstone: Custom servo-based robot arm with an RGB camera end effector for multiangle imaging

PUBLICATIONS

- Simulation of an Autonomous Mobile Robot for LiDAR-Based In-Field Phenotyping and Navigation , https://doi.org/10.3390/robotics9020046

- Development of a Multi-Purpose Autonomous Differential Drive Mobile Robot for Phenotyping and Sensing, https://doi.org/10.3390/electronics