JAWAD IQBAL

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Senior Applications engineer passionate about digital transformation, drawing from a wide breadth of experience from data science to manufacturing and operations engineering to 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

SKILLS

Agile Project Management, React, Django, FastAPI, Elasticsearch, AWS , RASA, Gitlab, Mechatronics, ROS, NodeJS, Python , Huggingface, Large Language Models, LLMOps

EXPERIENCE

Lockheed Martin Applications Engineer Sr   Aug 2020 - Present

- Project Managed a **$600k Research and Development Budget** and a 5-person team to develop an large language model (LLM) based knowledge retrieval assistant.
  - Developed solutions for various working groups such as Structures Analysis, Sustainment, and Materials and Processes. Reducing time to find knowledge by 70%
  - Data extraction engine able to extract data at scale from various file types and various sources
- Supervised two full-time computer science interns to rapidly develop digital transformation solutions:
  - Manufacturing shortage action item tracking system, increasing accountability.
  - Intelligent Dashboard that tracks various program opportunities and their respective capital expenditures, allowing leadership to ask "what if" scenario questions.
  - Enforceable Checklist Application where certain steps are enforced through camera and QR-code verification.
- Led a project to develop an application for executive leadership to evaluate site utilization for various program opportunities.
- Project Lead for a 7-person team, developed standards for aggregating metrics across all of Aero Operations. Created a React-based dashboard for leadership to view metrics as well as associated Tableau dashboards and countermeasure charts.
- Solo-developed and deployed various digital transformation web apps for performing audits:
  - Created a web app to record work area non-compliances with 300+ unique users, 5008 form submissions, and reducing 461 hours/month of manual work across Aeronautics.
  - Developed a computer vision web app to perform OCR to audit tools, reducing audit time from 1 hr to 15 minutes
- Researched and developed Large Language Model applications :
  - Document generation from unstructured reference documents. Knowledge graph generation from unstructured text.

Robotics Research Lab Manager   Aug 2018 – Aug 2020

- **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

ABB Operations Engineer CO   Aug 2016 – Aug 2018

- Worked 4 full time semesters at a alternating current motor manufacturing facility focused on workcell optimization
- 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.

PUBLICATIONS

Simulation of an Autonomous Mobile Robot for LiDAR-Based In-Field Phenotyping and Navigation ,

Development of a Multi-Purpose Autonomous Differential Drive Mobile Robot for Phenotyping and Sensing,