Mena Ibrahim

Menaibr96@gmail.com ❖ (347) 241-3344 ❖ Staten Island, NY❖ m-ibrahim1.wep.app

SKILLS

Programming: Java | Python | MATLAB | JavaScript | HTML | CSS | Node.js | VBS | LaTeX
Areas of Expertise: Engineering Calculations & Simulations | Data Collection & Analysis | Troubleshooting & Reporting | Finite Element Analysis (FEA)| Mechanical Design & Engineering | Team Leadership & Training

WORK EXPERIENCE

L3Harris Technologies, Inc **Feb. 2020 – Present**
Sr Associate Mechanical Engineer *Rochester, NY*

- Secured successful bid for $2.1M by constructing winning design for DarkWing Flat Panel VSAT articulation using Autodesk Inventor and ANSYS Mechanical.
- Reduced 15% overall cost by leveraging cost effective manufacturing method and revamping machined components of Hawkeye 4 Lite VSAT for casting in aluminum.
- Lowered 20% feedback and design time by creating test fixture to enhance system reliability and Agility.

21st Century Group **Dec. 2017 – Aug. 2017**
Mechanical Engineering Co-Op *Baltimore, MD*

- Fabricated and tested parts for fit and performance through tolerance and LMC / MMC analysis.
- Wrote and edited engineering documentation as well as operation and assembly manuals for new and existing projects and machines.
- Led significant monthly increase of over 10,000 packages in capacity by aiding with assembly and installation of high-speed package sorter (HSPS).
- Increased feeder performance by 30% by designing and upgrading parts.

GE Aerospace **Dec. 2016 – Aug. 2016**
Mechanical Engineering Co-Op *Bohemia, NY*

- Analyzed control systems and step responses to manage live in-flight diagnostic instruments, identify potential failure areas, and enhance user safety for hundreds of people.
- Cut testing time by more than 4X using Arduino C and Java to create test fixture and automate switch testing.
- Secured multi-million-dollar contract by investigating avionic failures via stress and finite element analysis (FEA) techniques and communicating findings with GE Aviation and customers.
- Investigated switch complaint, determined root cause with ANSYS structural analysis, and delivered presentation to client.

EDUCATION

Rochester Institute of Technology **May 2019**
BS Mechanical Engineering *Rochester, NY*

KEY PROJECTS

HireMePls.com | *MongoDB, Express, ReactJS, Node.js, GitHub* **2023**
A site to help job applicants answer interview questions and compare job experiences.

- Developed a system that achieved O(1) time complexity for tracking likes/dislikes and incrementing views per click on each post, enabling accurate display of post popularity.
- Migrated application to latest version of Redux framework through comprehensive study of redux documentation.

- Built a backend REST API using axios and Express.js to store and display user content.

Search & Rescue Aircraft | *Python, OpenCV, Betaflight, Raspberry Pi* **2019**

A drone that automatically searches a defined area for missing persons and reports back to base.

- Facial recognition using Python and OpenCV, interfacing with the camera and OSD.
- Autopilot using raspberry pi's GPIO Python library and Betaflight flight controller.
- Constant tracking of flight range based on battery power and average energy consumption.
- Designed parts in CAD, produced a BOM, and fully assembled the hardware.

Local Positioning System | *Fusion 360, C++, ANSYS* **2019**

A mesh network of nodes to try to locate and track moving objects in 3D space.

- Coded ESP32 microcontrollers and used Dijkstra's method to communicate and establish a coordinate system between other nodes.
- Modeled and 3D-printed compact and waterproof casing for custom PCBs.
- Ran thermal and mechanical analysis using ANSYS to make rugged packaging.

Linear Modeling of Aircraft | *MATLAB, Simulink* **2019**

Modeling and predicting an aircraft's performance using math.

- Used MATLAB to create state space model to find short-period and phugoid eigenvalues, natural frequencies, and damping ratios.
- Used Simulink to simulate step responses of true velocity, angle-of-attack, pitch rate, and pitch angle over time.