Hassaan Arif

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WORK EXPERIENCE

In-Service Engineering Stress Analysis Intern | April 2023 – August 2024
Collins Aerospace | Oakville

- Performed detailed stress analyses of landing gear components to assess structural integrity and identify potential damage following hard landing or towing incidents, providing critical data for repair and maintenance decisions.
- Conducted strength and fatigue analyses utilizing classical calculations and FEA methods for landing gear and flight control structural components.
- Prepared and updated comprehensive Stress and Fatigue Analysis Reports documenting findings and recommendations.
- Supported landing gear tests by assisting in the preparation of requirements documents and maintained logs for Stress Reliability and MRB activities.

Customer Service Associate | April 2022 – June 2023
Costco Wholesale | Toronto, ON

- Leveraged continuous improvement and lean techniques to consistently exceed developmental and performance objectives.
- Provided personalised customer service, ensuring high satisfaction and building long-term client relationships.
- Improved inventory management by forecasting demand accurately, resulting in increased operational efficiency.

PROJECTS

- **100MPH+ 3D Printed Electric RC Car Design**: Conducted cost breakdown, engineering, and 3D printing for a 1/7th scale all-wheel-drive electric RC car capable of exceeding 100 MPH, using Fusion360 and SolidWorks for design optimization.
- **Affordable Haptic Feedback Glove Redesign**: Redesigned a cost-effective haptic feedback glove at the Mixed-Reality Immersive Motion Simulation (MIMS) Laboratory, enhancing tactile responsiveness for immersive simulations.
- **Airborne Gas Analysis Drone System**: Developed a drone system for advanced environmental monitoring, integrating CO_2, CO, ammonia, and sulfur sensors. Utilized Python for real-time data processing and OpenCV for image stitching and mapping, enabling enhanced sensor data visualization.

EDUCATION

Toronto Metropolitan University | Toronto, ON 2020 - 2025

Bachelor of Engineering (B.Eng.): Aerospace Engineering | Co-op Option

- **Relevant Courses**: Machine Learning, Propulsion, Manufacturing Management, Space Systems Design, Spacecraft Attitude Dynamics, Systems Engineering, Stress Analysis, Aerodynamics, Materials and Manufacturing, Electrical Machines and Actuators, Control Systems, Gas Dynamics, Aircraft Performance, & Aerospace Structural Design
- **Technical Skills:** Teamcenter, NASTRAN, CATIA, 3D Printing, Soldering, Fusion360, CFD, ANSYS, SolidWorks, MATLAB, Simulink, Python, Microsoft Office, C#Programming, AutoCAD, Google Suite, & Database Logging
- **Honours and Recognition:** Dean's list (2021/2022)

SUMMARY OF QUALIFICATIONS

- **Propulsion and Lift Analysis**: Led analysis of propulsion and lift for a Hyperloop system using Linear Induction Motors, performing feasibility studies, system integration, and presenting findings to optimize performance.
- **UAV and Rocketry Design Teams**: Key contributor to UAV development for university design team; achieved 2nd place in Ontario in the SpacePort America Cup with a successful rocket launch exceeding 10,000 feet.
- **Project Leadership & Collaboration**: Demonstrated ability to lead engineering projects, manage timelines, and work effectively within cross-functional, team-based environments.
- **Graphical Communication**: Proficient in creating detailed technical drawings, including orthographic, sectional, and auxiliary views of mechanical parts, with a solid understanding of GD&T principles.
- **Hands-On Engineering**: Experienced in 3D printing, Riveting, CNC machining, fabrication, and manufacturing processes, as well as using precision tools like Vernier calipers and lathes.