Rohith McKim

jrmckim@mun.ca | (709) 765-7822 | Linkedin | Portfolio

Skills

Languages/Tools:	C++, Python, MATLAB, C, VB, CRBasic, C#, Arduino, MS Excel, Ansys STK
Mechanical:	SolidWorks, SolidEdge, DFM, 3D Printing, FEA, Robotics, Rapid Prototyping, Cognex VisionPro
Other:	Lean Six Sigma Certified WB, Systems Engineering, Computer Vision, Fluent in French

Education

Memorial University of Newfoundland – Bachelor of Engineering, Mechatronics, Class of 2027 — 2022 - Present
GPA: 4.0/4.0 — St. John's, NL

Experience

Robotic Process Automation Engineering Intern — Sep 2024 - Present
Lumentum Inc. — Ottawa, ON

- Designed and manufactured aluminum and 3D printed jigs using **SolidEdge** to automate the manufacturing alignment process of optical switches and sensors, achieving an accuracy of **10 µm** during production
- Analyzed and reduced manufacturing process variability of epoxy dispensing by performing **root cause analysis** and designing a smart robotic calibration process using computer vision, achieving an error rate of **1 µL** during production and reducing the defect rate from **11%** to **4%**
- Designed and optimized process automation tools using **Python, C#,** and **VB** to automate the robotic tool center point definition process of industrial manufacturing robots in a cleanroom environment with computer vision

Mechatronics R&D Engineering Intern — Jan 2024 - April 2024
C-Core — St. John's, NL

- Led the mechanical design of the structure of a 3U CubeSat, using **Solidworks** to perform **FEA** and **Thermal Analysis** and created mechanical drawings and documentation for all components
- Designed and assembled engineering models of **PCBs** using **KiCAD** and performed verification tests on solar panels, saving **$20,000** by identifying the most cost-effective and efficient solar cell supplier and layout, also increasing expected power generation by **20%**
- Developed an orbital propagation model using **Ansys STK** and implemented a **MATLAB** algorithm to compute the effects of certain mechanical design choices on the expected orbital decay, ensuring compliance with FCC deorbiting regulations

Electrical Engineering Intern — May 2023 - Aug 2023
NL Hydro — St. John's, NL

- Planned and implemented a submersible **MEMS** tiltmeter system to monitor structural durability at the Menihek Hydroelectric Station, improving reliability and aiding long-term asset planning
- Improved the accuracy of 6 temperature and flow level sensors by **50%** by optimizing placement and calibration using **CRBasic**
- Utilized **MS Excel** to automate a daily report of all hydrology data, including head level, temperature, and flow data
- Created 7 new preventative maintenance (PM) protocols and improved 10 existing PM protocols related to electrical assets such as transformers and breakers, reducing downtime by **15%** during maintenance

Extra-Curriculars / Projects

Lead Systems Engineer — Feb 2024 - Present
MUNStar-1 CubeSat — St. John's, NL

- Led a multidisciplinary team of **50+** members through the preliminary design, development, and testing phases of a 2-year satellite mission sponsored by the Canadian Space Agency
- Designed and tested digital and analog electrical interface PCBs for core subsystems and sensors using a PC104 standard, defining hardware connections and communication protocols using **I2C**, **CAN bus**, and **RS-485**
- Created in-depth assembly, integration, and testing plans for all electromechanical systems and presented the system's design in a Preliminary Design Review with the CSA

Robotic Arm — Sep 2023 - Dec 2023

- Designed and manufactured a 3 DOF robotic arm using **SolidWorks** and **3D Printing** and used **FEA** to determine the torque required at each joint for servo motor selection
- Programmed a control algorithm in **C++** on an **Arduino UNO** for precise motor control with keyboard controls