Matthew Duke

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EDUCATION

QUEEN'S UNIVERSITY **Kingston, ON**
Bachelor of Applied Science in Engineering Physics (Mechanical Option) *Graduation May 2020*

PROFESSIONAL EXPERIENCE

HONEYWELL AEROSPACE **Kanata, ON**
Systems Integration and Test Engineer *May 2018 – August 2019*

- Developed and executed manual and automated test cases for satellite communications products.
- Implemented new testing infrastructure for in-depth lab-based simulation and performance analysis.
- Automated an existing configuration file generation process to reduce times from 1-2 hours to 30 seconds.

BELL CANADA **Huntsville, ON**
Technician Advanced *May - September 2016 & 2017*

- Diagnosed and repaired telecommunication infrastructure for water access properties throughout Muskoka, Ontario.
- Worked independently to manage and optimize daily workflow to improve customer service and productivity.

PROJECT EXPERIENCE

QUEEN'S SPACE ENGINEERING TEAM (QSET)
Payload Subsystem Manager *June 2019 – Present*

- Currently managing a team of students to prototype an Earth observation telescope for a 3U CubeSat for the Canadian Satellite Design Challenge (CSDC).
- Strong project management and organizational skills have been important throughout this project, along with the ability to identify design weaknesses.

ENGINEERING PHYSICS THESIS
Acoustic Wave Simulation *September 2019 – Present*

- Currently writing a software application to simulate acoustic wave transmission through phononic crystals using finite difference time domain techniques.
- This project has required comprehensive knowledge of a variety of engineering disciplines, including algorithm development, performance optimization, mechanical deformation and project management.

ENGINEERING CAPSTONE
4-Axis Robotic Arm *September 2019 – December 2019*

- The goal of this project was to design and build a board-game playing robotic arm coupled with software to interpret and respond to a human opponent.
- Personal contributions included the software and hardware control system, consisting of 3D physics simulations, motor driver software and circuit board design.

QUEEN'S REDUCED GRAVITY EXPERIMENTAL DESIGN TEAM (QRGX)
Payload Design Team *December 2018 – June 2019*

- This experiment was designed to evaluate polymerase error rates in microgravity as part of the Canadian Reduced Gravity Experiment Design Challenge (CAN-RGX).
- Responsibilities included vibration testing and stress analysis of the payload housing.