Matthew Bowen

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EDUCATION

ROYAL MILITARY COLLEGE OF CANADA
MSc: Physics and Space Science
Supported by NSERC CREATE & CGS-M grants
September 2020 | Kingston, CA

QUEEN'S UNIVERSITY
BSc: Physics and Computing
June 2018 | Kingston, CA

PROFILE

TECH
Python:
Data science • Machine Learning
Visualization • Scripting • ETL
Pandas • Matplotlib • GDAL
TensorFlow • NumPy • SciPy
Other programming:
MySQL • C • MATLAB • Java
Web:
JS • HTML • CSS • PHP
Django • Bootstrap • Symfony
Other:
LaTeX • AGI STK • L3 Harris ENVI
PCB design in KiCAD/Eagle
Linux/Unix/Shell • AWS
InDesign/Inkscape

SKILLS
Space Mission Design:
Satellite systems engineering
Electrical engineering
Concept of operations development
Astrodynamics • Orbital mechanics
Productivity:
Agile • Git • Asana • Jira
Team:
Volunteer and team management
Technical communicator
Languages:
English (native) • French (proficient)
Japanese (basic)

CERTIFICATIONS

Amateur Radio Operator
Innovation, Science, and Economic
Development Canada
Callsign: VE3KSP

Professional Skills Certificate
University of Saskatoon

EXPERIENCE

DOCUPET INCORPORATED
Junior Web Developer + Data Analyst
October 2018 – Present | Kingston, CA
- Docupet is a web startup disrupting the civil pet licencing market.
- Perform data analysis and visualization to aid business leaders.
- ETL of large client datasets (>50,000 unique users in some instances).
- Developed validation tools in Python and maintains MySQL database.

QUEEN'S SPACE ENGINEERING TEAM
Satellite Project Chief Technical Officer
September 2019 – May 2020 | Kingston, CA
- The satellite project designs and constructs a 3U cube satellite
- Managed 50+ volunteer students to top 5 rank at preliminary design review.
- Implemented iterative design approach for satellite system engineering.
- Specialized in CONOPS planning, and electrical design.

ALMA MATER SOCIETY OF QUEEN'S UNIVERSITY
Director of Information Technology
March 2017 – May 2018 | Kingston, CA
- The Alma Mater Society is the student government of Queen's University.
- Maintained the technological infrastructure of 4 commercial storefronts in food service, retail, and printing.
- Performed account management for 150+ staff and users.
- Oversaw the launch of two websites and a mobile app for AMS services.
- Trained and managed a staff of 5 first level IT support personnel.

RESEARCH & PROJECTS

ROYAL MILITARY COLLEGE OF CANADA
A Study of Polar Dust Loading using Satellite Thermal Data
September 2018 – September 2020 | Kingston, CA
Determined long term trends in high latitude dust loading using 125,000+ satellite thermal images. Developed an open source program in Python to read image binary files and calibrate imagery. 30+ days of compute time to process the entire data set. Supervised by **Dr. Ron Vincent**. Manuscript submitted pending publication.

QUEEN'S UNIVERSITY
Virgo Cluster Galaxy Surface Brightness Profile Fitting
Sept 2017 – May 2018 | Kingston, CA
Studied the light profile of Virgo Cluster galaxies to determine distribution of galactic structure types using chi-squared and Markov Chain Monte Carlo minimization techniques. Supervised by **Dr. Stéphane Courteau**.

EUROPEAN SPACE AGENCY
Concurrent Engineering Workshop
January 2020 | Redu, BE
1 of 30 international students selected to participate in workshop to design a satellite mission to the edge of the solar system.

ROYAL MILITARY COLLEGE OF CANADA
International Space Mission Training
January 2019 - June 2020 | Kingston & Saskatoon, CA
Collaborated in design of a 3U cubesat mission to study polar mesospheric clouds. Launched a weather balloon mission to measure upper atmosphere ionizing radiation.