Pramit Shende

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EDUCATION

Carleton University, Ottawa ON **CGPA: 11.0/12.0 (A)**

Bachelors of Engineering – Aerospace Engineering Co-op (Space Systems Design) *Graduation Date: 2028*

- Ontario Remembrance Scholarship (1 recipient per university, valued at $10,000)

QUALIFICATIONS

CAD: Fusion360, Onshape, SolidWorks|Programming & IDEs: Python, Visual Studio, PyCharm, Arduino IDE| Simulation: Ansys, GMAT, STK|Research|Microsoft Office Products|Leadership

PROFESSIONAL EXPERIENCE

Carleton Aerospace Astrophysics Radio Club (CA2RC) **Ottawa, ON**

Vice President & Mechanical Team Lead *Nov 2023-Present*

- Overseeing team operations, funding, and outreach as VP for CA2RC, a student organization with over 40 members aimed at providing students with valuable experience in the space industry.
- Leading the design proposal process for all mechanical systems in CA2RC-SAT 3U CubeSat including outer frame, thermoregulation, and deployable mechanisms design using Onshape.
- Performed preliminary thermal analysis of 3U CubeSat components using Systems Toolkit (STK) and designed thermoregulation architecture to ensure optimal operating temperature for all parts.
- Performed preliminary structural analysis of CubeSat structures for random /sinusoidal vibration, and acceleration loads in Ansys, ensuring the structure met the requirements of launch providers.
- Led the design, assembly, and mission of a 1U high altitude balloon satellite aimed at measuring radiation effects and atmospheric weather during a full solar eclipse.

Space Copy **Edmonton, AB**

Research/Engineering Intern *Jul 2024-Sep 2024*

- Collaborated with a team of over 10 multidisciplinary engineers and interns in the design of innovative FDM and SLS 3D printing technologies tailored for lunar environments.
- Led the prototype of a tendon driven robotic arm gripper for use within the 3D printing chamber, created detailed CAD models and engineering drawings on Onshape to ensure simplicity of manufacturability while meeting design requirements of part and geometry adaptability.
- Conducted extensive research on lunar regolith properties and their impact on 3D printing materials and processes, providing valuable insights for material selection and printer gantry system design.

Burns Bridge Engineering **Edmonton, AB**

Engineering Intern *Aug 2022-Sep 2024*

- Drafted over 50 engineering drawings, calculating structural loads on warehouse storage racking systems using Excel, and ensuring compliance with municipal safety standards through field reviews.
- Managed 50+ building permit applications valued at over $10 million, ensuring adherence to local regulations, accelerating approval processes, and coordinating effectively with clients.
- Generated quotations for over $15 million in combined project value using Excel, improving cost estimation accuracy and streamlining the proposals for potential clients. Additionally, assisted in a 100% increase of annual revenue in 2023.

STAR Lab Surat **Remote**

Astrodynamics Intern *Apr 2024-May 2024*

- Headed a team of 4 interns to design a mission and model orbital trajectories from launch on the Earth to landing on the Moon using GMAT and Excel, improving accuracy by 15% through iterative testing and refinement of each mission phase.
- Participated in a comprehensive 4-week orbital mechanics learning program focused on topics such as finite and impulsive burns, delta v budgets, orbital manoeuvres, launch and landing trajectories, and their respective mathematical calculations.

PROJECTS

CuSAT - Satellite Design Project **Ottawa, ON**

Undergraduate Member *Nov 2023-Present*

- Designed parts in Onshape for 3D printing and machining regarding a prototype of a ground station that communicates with satellites in low earth and geostationary orbits.
- Prototyping cube satellite sun sensors in house using photo diodes and light intensity algorithms to meet mission pointing requirements.
- Assisting fourth year capstone students with part design and assembly as a member of the satellite design project led by Bruce Burton at the Carleton University Spacecraft Manufacturing Lab.

Landsat Lab **Ottawa, ON**

Team Member *April 2024-Aug 2024*

- Led the procurement and interpretation of Landsat 8 and 9 data, providing theoretical insights on surface reflectance as part of a web app submission to NASA' s Space Apps hackathon.
- Developed methodologies for satellite tracking and overpass notifications using Landsat orbit telemetry, optimizing ease of use for users such as citizen scientists and students.

Lunar Research Project **Ottawa, ON**

Lead Author *April 2024-Aug 2024*

- Shende, P., & Muhammad, H. (2024). Towards Safer Lunar Habitats: Strategies for Detecting and Mitigating Moonquake Risks.
- Authored a technical paper on strategies that help mitigate moonquake hazards for future lunar missions through detection using satellite platforms, moonquake prediction, and mission planning.
- Paper abstracts were accepted at IAC 2024 and COSPAR 2024, with a technical session presentation at CASI ASTRO 2024.

Red Bull Soapbox Kart **Edmonton, AB**

Project Lead *May 2024-Jul 2024*

- Led design and construction of a calculator soapbox kart for the Red Bull Soapbox Race 2024, which secured top 5 placement in categories of speed, design, and quality of construction out of 60 teams.
- Managed project timelines, budgets, and inventory using Excel, resulting in the successful completion of the kart one week ahead of schedule and 10% under budget.
- Calculated the centre of gravity and impact forces on the kart during jumps using kinematics equations and CAD, ensuring chassis strength and a balanced weight distribution during design.

INTERESTS

Formula 1, Sailing, Weight Training, Cricket, Badminton, Painting, Camping, Reading