KETAN VASUDEVA

Engineering Science Student

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EDUCATION

Engineering Science - Robotics Major - BASc

University of Toronto

September 2018 – Present

- Minor in **Business**
- Dean's List

EXPERIENCE

Science Software Engineering Intern

GHGSat

May 2021 – Present Montreal, Quebec

- Working in R&D to deliver industry-level greenhouse gas density maps by implementing scientific software to process raw satellite data.
- Created R&D solutions to speed up data processing by a **factor of 4**, reduce image **artifacts by 50%**, and calibrate optical instrument characterization data. Created and reported KPI to track company performance.
- Independently developed and maintained a command-line tool which allows team to visually analyze and plot satellite retrieval data.

Software Team Lead

UTDL Robodog Design Team - University of Toronto

January 2022 – Present Toronto, Ontario

- Leading software development of a team of over 10 students creating an autonomous robotic dog and manipulator, specifically leveraging **ROS**. Challenges include computer vision, path planning, and hardware control.

Space Systems Team Member

University of Toronto Aerospace Team (UTAT)

March 2019 – June 2021 Toronto, Ontario

- Worked towards deploying a satellite **by 2023** to measure **Anthropogenic CH4** levels across the GTA through hyperspectral imaging. Worked in the **Firmware**, **Payload-Electronics**, and **Systems Engineering** teams.
- **Inclusion (Chair):** created a space within UTAT to discuss and implement **Equity, Diversity, and Inclusion** goals.

Praxis 3 Research Assistant

University of Toronto

September 2020 – March 2021 Toronto, Ontario

- Researching with the faculty to build a fresh and innovative Engineering Science design course focusing on global community collaboration.
- Created literature review which was used as foundation for creation of course partnerships and materials.

Full Stack Software Engineer

Manulife - Canadian Architecture

May 2020 – August 2020 Waterloo, Ontario

- Developed and deployed a web tool, using **Agile** methodology, to **automate** security threat analysis reports for Security Architecture. **Increased productivity by 30%** by decreasing average report creation time.

TECHNICAL SKILLS

- **Web:** React, Node, Express, HTML, JS
- **Embedded & Robotic Systems:** ROS, C, C++, ARM, Verilog, Arduino, Altium
- **Other:** Python, Java, SQLite, MySQL, Matlab

PERSONAL SKILLS

- **French** and **English** fluency
- Agile Methodology, PCB Design, Leadership, Communication, Flexibility, Composure

PERSONAL PROJECTS

NASA SpaceApps 2020 Hackathon - Toronto and Canada CSA Winner

- Created an educational sandbox tool to simulate the challenges of communicating with people on Mars using **NASA/CSA** data sets, **React.js**, **Node.js/Express.js**, and **Python**.

The Sound of Space Podcast Host (UTAT)

- Co-host a podcast dedicated to creating, sharing, and explaining the wonders, dangers, and practical applications of space with space enthusiasts.

Engineers Without Borders Canada (EWB) - Policy and Advocacy Team

- Met with Members of Parliament in order to advocate for the 2030 EWB's sustainable development goals.

UTDL Designathon

- Designed, prototyped, built, and tested a pin-locked fully-integrated safety box to prevent home delivery package thefts using **Arduino**, **CAD**, and various **motors**.

ACHIEVEMENTS

- **Paula Burke Bursary** recipient - University of Toronto
- **University of Toronto Scholar** and **AIA Canada Scholarship** recipient
- UofT Varsity Ultimate Team **Rookie of the Year**

INTERESTS

- R&D, Robotics, Space Exploration, Programming, AI, Quantum Computing
- Ultimate Frisbee, Tennis, Basketball, Soccer
- Advocacy, Reading, Travelling, Chess