Spencer Teetaert
spencerteetaert@gmail.com
Portfolio: spencerteetaert.github.io

Graduating Engineering Science student majoring in **Robotics** with a minor in **Machine Intelligence**. Experience from industry, research, and design teams in **controls, computer vision, machine learning, robot design, CAD, project management, and team leadership**. References available upon request.

Education

Undergraduate Thesis: Learning Based Controller for a Parallel Continuum Robot
Continuum Robotics Lab · Dr. Jessica Burgner-Kahrs
Sept 2022 – present

B.A.Sc. in Engineering Science, Robotics / MI
University of Toronto
2018 – present

- GPA: 3.72
- Robotics Courses: Robot Modelling and Control, Computer Vision for Robotics, Linear Control Theory, Electronics for Robotics, Mathematics for Robotics, Control Systems, Microcontrollers and Embedded Microprocessors, Digital and Computer Systems, Praxis III (Robotics focused engineering design)
- Machine Learning Courses: Fundamentals of Machine Learning, Intro to Artificial Intelligence, Introduction to Learning from Data, Data Structures and Algorithms (Python, C, Linux), Foundations of Computing

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Work Experience

Researcher
Dynamic Systems Lab · Dr. Angela Schoellig
May 2022 – Sept 2022

- Developed sim2real, a simulation wrapper of crazyflie's firmware integrated with safe-control-gym allowing tuning free transfer of controllers designed in simulation to real world hardware. Tests show ~4cm error throughout a 10s trajectory between real life and simulation with no tuning.
- Organized safe robot learning competition for IROS 2022.

Machine Learning Research Engineer
Huawei Technologies Canada · Human Machine Interaction Lab · Dr. Juntao Ye
May 2021 – Apr 2022

- Designed and validated novel deep learning architectures and training techniques achieving state of the art performance for computer vision tasks.
- Developed product code for large scale distributed mobile deployment.
- Conducted research to extend scientific understanding of computer vision in few shot learning applications.

Engineering Coop
Hylife Foods
May – August, 2019 and 2020

- Led development for proposals of an automation overhaul of a production plant with 2000+ employees.
- Conducted detailed design for specific automation projects.
- Designed software for equipment optimization, rapid design and prototyping, and robotic control systems.

Volunteer and Extra Curriculars

President
University of Toronto Robotics Association (UTRA)
May 2022 – present

- Oversee direction and operation of one of University of Toronto's largest design teams. UTRA has four unique project teams, two learning initiatives, and over 100 undergraduate, graduate, and alumni members.
- Acquired funding, university support, personnel, and expertise to enable return of our project teams to competitions after a covid induced dry spell.
- Overseeing the return of UTRAHacks, an introductory level robotics hackathon.

Project Manager
Autonomous Rover Team (UTRA)
May 2021 – June 2022

- Lead design and logistics for the ART competition team. Focusing this year on bringing the team to competition for the first time in several years.
- Oversees and directs design on Caffeine, our fully autonomous rover capable of navigating a competition course with obstacles. Caffeine uses deep learning for lane detection, object detection and classification, a ROS stack for navigation, localization, and mapping. Our sensor suite uses a RGBD camera, IMU, LiDAR, and GPS.

Photography Subcom Chair
Engineering Orientation Committee
March 2021 – Oct 2021

- Oversaw team of 20+ volunteer photographers to capture orientation week. Filtered and uploaded 15,000+ pictures of the week-long event with 1,000+ participants.

Backend Designer
Volunteer Engineering Experience Program (VEEP)
Oct 2020 – May 2021

- Designed backend infrastructure for Big Brother-Big Sisters Toronto's Big networking website.

Computer Vision Designer
Autonomous Rover Team (UTRA)
Oct 2020 – April 2021

- Developed deep learning networks used for object detection and classification for road based settings.

Structures Designer
University of Toronto Aerospace Team
Sept 2018 – Oct 2020

- Created CAD models and machine parts for critical project components such as a fuel spin caster and engine test stand. Worked towards launching Defiance II, UTAT's record breaking rocket (Altitude goal: 16-20km). Machined parts for use in flight grade systems.

Awards and Recognitions

- Dean's Honours List (2018 – present)
- NSERC Undergraduate Student Research Award (2022)
- Faculty Of Applied Science & Engineering Admission Scholarship (2018)
- Dr. Dale Iwanoczko Memorial Scholarship (2018)