MOLLIE BIANCHI

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EDUCATION

Master of Applied Science, Emphasis in Robotics   **2019 - 2021**
University of Toronto, Autonomous Space Robotics Lab, GPA: 4.0/4.0
Vector Scholarship in Artificial Intelligence and NSERC Graduate Scholarship

Bachelor of Applied Science in Engineering Science with High Honours   **2015 - 2019**
University of Toronto, Robotics Major, GPA: 3.94/4.00
University of Toronto National Scholarship

WORK EXPERIENCE

Robotics Perception Engineer   **2021 - present**
Trimble Inc., Richmond Hill, Ontario
- Developing in C++ a visual navigation pipeline to compute real time camera trajectories and sparse scene reconstructions using stereo cameras
- Working alongside a team of engineers following standard best practices, completing code reviews, and implementing unit tests

IT and Controls Intern   **Summer 2018**
Innovative Automation Inc., Barrie, Ontario
- Developed and deployed web applications in C# for use in production
- Programmed PLCs for the operation of automated robotic equipment and designed human-machine interfaces
- Troubleshot machine operations and reworked design during testing phase

Internet of Things App Developer Intern   **Summer 2017**
More Automation Solutions Inc., Mississauga, Ontario
- Built applications and accompanying graphical use interfaces for industrial IoT products

PROJECT EXPERIENCE

Research Assistant   **2019 - 2021**
Visual Localization for Unmanned Aerial Vehicles (UAVs)
- Project goal was to develop a method to localize live images captured by a UAV to geo-referenced images pre-rendered from Google Earth
- Developed a method accepted to *ICRA 2021* that uses an auto-encoder to compress images and weighted kernel evaluations to compute a pose and covariance estimate
- Integrated this method with the existing, large, complex code base written in C++ onboard the UAV

Simulation Testing Lead   **2018 - 2020**
aUToronto, University of Toronto's Autonomous Vehicle Team
- **1st** Place Team Overall Years 1, 2, and 3 in the AutoDrive Challenge hosted by SAE and General Motors
- Worked with existing simulation solutions (eg. CARLA which is powered by Unreal Engine) to create specific dynamic evaluation scenarios

SKILLS

- Python and C++ in Linux, open source libraries (eg. OpenCV, Eigen, PyTorch, TensorFlow, GTSAM, ROS, GoogleTest), SketchUp, C#, MATLAB
- computer vision, multi-view geometry, camera models, semantic segmentation, machine learning, neural networks, calibration, state estimation, linear algebra, test driven development, agile methodology, field robotics, sensor fusion