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 valued at $100k

PROJECT EXPERIENCE

Research Assistant **2019 - 2021**
Visual Localization for Unmanned Aerial Vehicles (UAVs)
- Project goal is to develop a method to localize live images captured by a UAV to geo-referenced images pre-rendered from Google Earth
- Proposed a method submitted to *ICRA 2021* that uses an auto-encoder to compress images and weighted kernel evaluations to compute a pose and covariance estimate
- Currently working on integrating this method with the existing mature, complex, and large 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
- **1st** Place in the MathWorks Simulation Challenge Years 2 and 3
- Author on "Zeus: A system description of the two-time winner of the collegiate SAE auto drive competition." in the *Journal of Field Robotics*, 2020
- Worked with existing simulation solutions (MATLAB's Automated Driving Scenario, CARLA which is powered by Unreal Engine, RightHook) to create specific dynamic evaluation scenarios
- Created a ROS bridge to interface between developed autonomy nodes and output from the simulation

WORK EXPERIENCE

IT and Controls Intern **Summer 2018**
Innovative Automation Inc., Barrie, Ontario
- Developed and deployed WinForms and ASP .Net applications in C# for use in production including modifications to the SQL database
- Programmed PLCs for the operation of automated robotic equipment and designed Human Machine Interfaces
- Troubleshot machine operations and rework design during testing phase

IoT App Developer Intern **Summer 2017**
More Automation Solutions Inc., Mississauga, Ontario
- Built Windows Universal Platform and web based applications for industrial IoT products
- Generated databases to store sample records using SQLite
- Developed accompanying graphical user interfaces for viewing database records using HTML and Angular JS
- Used OpenCV to analyze loaves of bread travelling along a conveyor for quality control

SKILLS

Python and C++ in Linux, C#, C, MATLAB, SQL, REST APIs, Django, OpenCV, PyTorch, ROS, TensorFlow
Relevant Coursework: algorithms and data structures, computer vision, machine learning and neural networks, state estimation, linear algebra, perception (Lidar, vision, radar)