Liam Gritters

Robotics Engineer

Innovative and detail-oriented professional with expertise in developing and optimizing advanced technologies in robotics and autonomous systems. Proven track record of enhancing real-time environment modeling, obstacle detection, and target tracking through cutting-edge algorithms and multi-sensor fusion.

EXPERIENCE

Provectus Robotics, Ottawa, ON — *Robotics Engineer, Perception Team Lead*

June 2019 - PRESENT *<Robotics Engineer Co-op May 2017 - August 2018>*

➔ Developed and optimized Dynamic Occupancy Grid Maps to enhance real-time environment modeling and improve obstacle detection accuracy.

➔ Designed robust filtering algorithms tailored for off-road conditions, ensuring accurate determination of obstacles in challenging terrain environments.

➔ Implemented advanced target tracking algorithms, leveraging multi-sensor fusion to accurately identify, monitor, and track moving objects.

➔ Wrote and integrated software drivers for various sensors, such as radar and lidar, to allow for precise detection and measurement of the vehicle's surroundings.

➔ Performed trials, demos, and training sessions for customers/clients to demonstrate system capabilities and ensure proper usage and understanding.

➔ Implemented a convolutional neural network (CNN) that detects pedestrians and vehicles in a video stream, thereby improving obstacle classification in the encompassing area.

➔ Built an autonomous robot simulation in Webots Simulator with a custom controller that published and received data to a UDP Multicast Network.

PROJECTS

Analog Neural Network — *C++, Caffe, Webots Simulator*

➔ Implemented and trained a Multi-Layer Perceptron Neural Network for obstacle navigation, intended for integration into an analog circuit design.

Integrated Autonomous Vehicle — *C++, LCM*

➔ Led a team of 16 students in developing an autonomous vehicle prototype.

➔ Focused on system architecture, network messaging, virtual simulation, control systems, and device drivers.

Raspberry Pi Security Camera — *C++, Opencv, CSS/HTML*

➔ Developed a security camera system with event detection and logging, accessible via a website hosted and operated on a Raspberry Pi.

CONTACT

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SKILLS

▷ **C/C++** ▷ **Cuda**

▷ **Linux** ▷ **Git**

▷ **Bash** ▷ **Java**

▷ **Jira** ▷ **Bitbucket**

EDUCATION

Carleton University, Ottawa, ON
Bachelor of Mechanical Engineering

September 2014 - May 2019

▷ C.C. Gibson Scholarship

▷ Co-op Program

INTERESTS

▷ Robotics, Machine Learning

▷ Chess, Board Games

▷ Science Fiction Novels

▷ Basketball, Tennis, Golf