

# Jeremy Roy

## OBJECTIVE

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Find a job that allows me to work with mobile robots, robotic manipulators, and/or embedded systems. I am particularly interested in working directly with hardware.

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## SKILLS

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**Communication** Fully bilingual (French, English).  
**Computer Languages** Python, C++, TCL, BASH, Java, VHDL, Matlab, Julia  
**Tools** ROS, GIT, L<sup>A</sup>T<sub>E</sub>X, SVN, Mercurial, Code Composer Studio, Altera Quartus II, Vivado Design Suite, Microsoft Office.  
**OS Experience** Linux, TI-RTOS, Microsoft Windows.

## WORK EXPERIENCE

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JUNE 2018 - PRESENT

Research Assistant

*Ingenuity Labs: Offroad Robotics, Queen's University*

- Developing a wavelet-based technique for terrain surface mapping using data from inertial sensors
- Troubleshoot and repaired hardware and software issues on a robotic Kubota RTV900, a Clearpath Husky A200, and a GNSS RTK base station
- Presented posters at the 2019 NSERC Canadian Robotics Network (NCRN) AGM and at the 2019 Queen's University Faculty of Engineering and Applied Science (FEAS) Research Symposium
- Demonstrated a gas sensing robot in an underground gold mine in Northern Ontario
- Mentored undergraduate research assistants in electronic design and software development

SEPT 2018 - PRESENT

Teaching Assistant

*Department of Electrical and Computer Engineering, Queen's University*

- Prepared and presented tutorials to a class of over 50 students
- Guided students in troubleshooting code and hardware issues
- Reviewed and updated teaching material for lab activities

MAY 2016 - JULY 2017

Software Engineering Intern

*Neptec Design Group*

- Developed and maintained ROS drivers for the Canadian Space Agency's Juno II rover as part of the LiDAR-Navigation STDP
- Created ROS-integrated software tests using the GTest framework
- Designed and implemented embedded software for TI-RTOS and BLE
- Investigated hardware errors on custom-made processing boards
- Attended NCFRN AGM 2017
- Created an internal productivity tool in TCL for use with Vivado Design Suite 2016.3
- Assisted in requirements analysis for a European Space Agency flight project (PROBA-3 FLLS)

JUN 2013 - SEPT 2015

Camp Counsellor & Wilderness Tripper

*Camp Couchiching*

- Guided groups of 5 to 12 people through the remote wilderness of northern Ontario
- Collaborated with other staff to plan and facilitate high-quality programming to large groups of children

- Mediated and helped solve conflicts between campers

AUG 2012 - JUN 2014

### Trampoline Coach

*Airborne Trampoline North, Kingston Aeros Trampoline Club*

- Coached recreational and competitive trampoline classes for children and adults
- Facilitated birthday parties and group bookings for groups of up to 30 people
- Taught classes to children with special needs

SEPT 2012 - JUN 2013

### Lifeguard / Swimming Instructor

*Town of Aurora*

- Designed lesson plans according to the Red Cross Swim Kids/Preschool Performance Criteria
- Taught swimming lessons to children from ages 1 to 12
- Provided direct supervision and maintained safety during recreational and lane swim

## OTHER EXPERIENCE

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SEPT 2018 - PRESENT

### First Robotics Competition Mentor

*Lake Effect Robotics*

- Supervising and giving advice to students as they work on the electrical and software components of their robot
- Developing and realizing activities that teach students how to use software development tools such as git and Visual Studio Code

SEPT 2017 - APRIL 2018

### Undergraduate Capstone project

*Queen's University*

- Created a quadrotor controlled by an on-board Android smartphone via the 3.5mm audio jack
- Implemented a fully custom software stack on top of ROS Android
- Designed a quadrotor flight controller with dynamically reconfigurable PID gains
- Placed 3rd in Queen's University's ECE Department design competition
- All software is open source and available at <https://github.com/jeremyroy/simone>

MARCH 2015 - JUNE 2016

### Software Team Manager

*Queen's Mostly Autonomous Sailboat Team*

- Designed and implemented the team's first autonomous sailing algorithm
- Performed system-level debugging while integrating hardware and software components
- Tutored new team members by running GIT, Redmine, and Arduino workshops
- Communicated the progress of the software team to the rest of the executive team
- Placed 2nd at the 2016 International Robotic Sailing Regatta (IRSR)

SEPT 2014 - APRIL 2015

### IT Manager

*Engineering Society of Queen's University*

- Developed HTML e-mail newsletter templates compatible with the user-side template editor of ListServ. These templates are still in use today
- Gained experience working with FileZilla to host external e-mail template content on the Engineering Society's server

## EDUCATION

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- 2018 – PRESENT **MASc Candidate**  
ELECTRICAL AND COMPUTER  
ENGINEERING  
*Queen's University*  
Graduating in Fall 2020
- 2013 – 2018 **BASc**  
COMPUTER ENGINEERING  
*Queen's University*  
GPA: 4.1/4.3 (Cumulative)
- 2009 – 2013 **IB Diploma & OSSD**  
*ESC Renaissance*  
Bilingual Diploma (French, English)  
Graduated with 95% average

## AWARDS

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- 2019 **NSERC CGS-M Scholarship**  
Value of \$17,500  
*Queen's University*
- 2018 **Ontario Graduate Scholarship (OGS)**  
Value of \$15,000  
*Queen's University*
- Medal in Computer Engineering, 2018**  
Highest class average in 3rd and 4th year  
*Queen's University*
- Dean's Scholar Certificate**  
Achieved Dean's Scholar status throughout  
all 4 years of undergrad  
*Queen's University*
- ECE Design Competition Award**  
Electrical Engineering Capstone Project  
3rd place  
*Queen's University*
- 2015 **George and Mary Louise Patton  
Scholarship**  
*"For standing on year's work"*  
*Queen's University*
- 2013 & 2014 **Principal's Scholarship**  
Admission, over 95% average  
*Queen's University*