

Nicholas J. Hetherington

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EDUCATION

Master of Applied Science in Mechanical Engineering University of British Columbia	Jan. 2018 - present Vancouver, BC, Canada
<ul style="list-style-type: none">- First Class Standing and Departmental Continuing Merit Award- Supervisors: Dr. Elizabeth A. Croft, Dr. H.F. Machiel Van der Loos- Thesis: "Towards Social-Acceptability of Mobile Robots through Visual Communication Cues"	
Bachelor of Applied Science in Electrical Engineering Queen's University	Sept. 2012 - May 2017 Kingston, ON, Canada
<ul style="list-style-type: none">- First Class Honours and Dean's Scholar Award- Capstone Project: "Control of a UAV for Mining Applications"	

SCHOLARSHIPS and AWARDS

Canada Graduate Scholarship, Master's (\$17,500) Natural Sciences and Engineering Research Council	2018
Chancellor's Entrance Scholarship (\$36,000) Queen's University	2012 -2017
3rd Place, IEEE Eastern Ontario Student Paper Competition Undergraduate Capstone Project: "Control of a UAV for Mining Applications"	Apr. 2017
2nd Place, International Robotic Sailing Regatta Electrical Team Manager, Queen's University Robotic Sailboat Team	June 2015
Science Jacket; Sci. '44 Memorial; and Excellence through Innovation Service Awards Queen's University Engineering Society	2013, 2015

RESEARCH, PROJECTS, and COMPETITIONS

Graduate Research Assistant and M.A.Sc. Student Collaborative Advanced Robotics and Intelligent Systems Laboratory Thesis: "Towards Social-Acceptability of Mobile Robots through Visual Communication Cues" <ul style="list-style-type: none">- Experimental research on visual cues that enable socially-acceptable robot navigation amongst humans. Research Project: "Group Surfing: A Pedestrian-Based Approach to Sidewalk Robot Navigation" <ul style="list-style-type: none">- Adapted a learned multi-agent collision avoidance policy for a sidewalk environment.	Sept. - Oct. 2019 University of British Columbia
Research Engineer JDQ Systems Inc. <ul style="list-style-type: none">- Implemented a voice-recognition system on a mobile robot for interacting with disabled patients.	Sept. - Oct. 2019 Vancouver, BC, Canada
Undergraduate Capstone Project "Control of a UAV for Mining Applications" <ul style="list-style-type: none">- Designed and implemented a control and navigation system for a quad-rotor to follow walls.	Apr. 2015 - Apr. 2017 Queen's University
Electrical Design Lead and Project Manager Robotic Sailboat Team <ul style="list-style-type: none">- Undergraduate student design team building a 2-metre robotic sailboat for competition.	Sept. 2012 - Jun. 2015 Queen's University

PROFESSIONAL WORK EXPERIENCE

Industrial Automation Systems Designer

Sept. 2015 - July 2016

Granttek Systems Integration

- Implemented controls, supervisory, and human-machine interface systems in manufacturing facilities.

PUBLICATIONS

N.J. Hetherington, K.A. Williams, E.A. Croft, H.F.M. Van der Loos

May 2019

“Towards Social Acceptability of Mobile Robots through Visual Communication Cues”

Proceedings, Workshop on Human Movement Science for Physical Human-Robot Interaction

IEEE International Conference on Robotics and Automation (ICRA) 2019

Y.D. Yu, **N.J. Hetherington**, C.L. Oon, W.P. Chan, C.P. Quintero, E.A. Croft, H.F.M. Van der Loos

May 2019

“Group Surfing: A Pedestrian-Based Approach to Sidewalk Robot Navigation”

Proceedings, IEEE International Conference on Robotics and Automation (ICRA) 2019

Y.D. Yu, **N.J. Hetherington**, C.L. Oon, W.P. Chan, C.P. Quintero, E.A. Croft, H.F.M. Van der Loos

Oct. 2018

“Sidewalk Delivery Robot Navigation: A Pedestrian-Based Approach”

Proceedings, Workshop on Human-Aiding Robotics

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2018

INVITED PRESENTATIONS

Microsoft Garage Talks

Aug. 2019

Industry “Lunch and Learn”

Vancouver, BC, Canada

- “Human-Robot Interaction”, Nicholas J. Hetherington and Mahsa Khalili

TEACHING EXPERIENCE

Technical Communication for Mechanical Engineers

July - Aug. 2019

MECH 227

University of British Columbia

- Supervised literature review project; marked assignments.

Mechanical Engineering Design Project

Jan. - Apr. 2019

MECH 223

University of British Columbia

- Led tutorial sessions; facilitated design competition; marked assignments and tests.

Software Design for Mechanical Engineers

Sept. - Dec. 2018

MECH 550C/575A

University of British Columbia

- Facilitated laboratory exercises.

Software Tools for Mechanical Engineers

Sept. - Dec. 2018

MECH 220S

University of British Columbia

- Led tutorial sessions; facilitated laboratory exercises; marked assignments.

Introduction to Computer Programming for Engineers

Jan. - Apr. 2015, 2017

APSC 142

Queen's University

- Facilitated laboratory exercises; marked assignments and projects.

STUDENT SUPERVISION

Leader-Follower Robot using QR Codes

M.Eng. Final Project

May 2019 - present
University of British Columbia

Laser-Based Wheelchair Detection and Trajectory Prediction for Mobile Robots

Introduction to Academic Research (MECH 493)

Sept. 2019 - present
University of British Columbia

Communicative Movement for Mobile Robots

Undergraduate Volunteer Project

Sept. 2018 - present
University of British Columbia

Visual Communication Cues for Mobile Robots

Undergraduate Volunteer Projects (2)

May - Aug. 2019
University of British Columbia

RESEARCH METHOD COMPETENCIES

- User study design for interactive technologies including interviews and questionnaires.
- Statistical analysis of quantitative data; text coding and thematic analysis of qualitative data.
- Prototyping: Robot Operating System (C++/Python); electrical building; paper prototyping.

UNIVERSITY AND COMMUNITY SERVICE

Huts Committee Member and Rock Climbing Instructor

Varsity Outdoors Club

May 2019 - present
University of British Columbia

- Organize volunteer maintenance trips for backcountry mountain huts and teach climbing skills.

Board of Directors Member and Financial Officer

Campus Bookstore

Mar. 2014 - Mar. 2017
Queen's University

- Sat on the not-for-profit bookstore's advisory board and served as the Financial Officer.

Residence Advisor

University Student Residences

Sept. 2014 - Apr. 2015
Queen's University

- Live-in support staff for 30 first-year students. Organized educational and team-building events.

Council Speaker and Chief Electoral Officer

Undergraduate Engineering Society

Mar. 2014 - Mar. 2015
Queen's University

- Chaired Council meetings of 30 peers and organized Society elections for 2800 constituents.

President, Engineering Class of 2016

Undergraduate Engineering Society

Mar. 2013 - Mar. 2014
Queen's University

- Chaired Sci. '16 Year Council meetings (670 constituents) and sat on Engineering Society Council.

Committee on Inclusivity Member

Undergraduate Engineering Society

Mar. 2013 - Mar. 2014
Queen's University

- Advised on inclusive changes to Society policy and wrote a guide to inclusive event planning.

Director of Out-Tripping; Leadership Development and Specialty Camp Counsellor

YMCA, Diabetes Canada, Moomba and Eureka Societies

2011-2017
Gibsons, BC, Canada

- Volunteered for 4 and worked for 3 summers at overnight summer camps for disadvantaged youth.