Philippe Nadeau

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Languages: French and English

EDUCATION

MASc Aerospace Science and Engineering, Robotics Institute 2020-
University of Toronto

Automated Manufacturing Engineering, Dept. of Systems Engineering 2016-2020
Graduated with honors - Average 4.25/4.3
École de Technologie Supérieure, Montréal
This four years multidisciplinary program is primarily focused around industrial robotics. In this co-op program that adopts an hands-on approach, students gets to learn as much about software engineering, as about electronics or control. Students are therefore well prepared to tackle a great variety of issues by creating bridges between different domains and by working with various specialists. Most classes are curve graded.

RESEARCH & WORK EXPERIENCES

Visiting Researcher, UC Berkeley Summer 2019
Embodied Dexterity Group (EDG)
Under the supervision of Prof. Hannah Stuart, I studied how contact conditions of underwater soft tendon-driven fingers grasps could be monitored and used. The data collection was automated through the development of ROS packages which allowed a recurrent neural network to be used for predicting the pulling force.

Research Assistant Spring 2019
Command and Robotics Laboratory (CoRo)
Under the supervision of Prof. Vincent Duchaine, I was in charge of a projet that essentially aimed to allow a collaborative robot to learn to execute contact-rich manipulation tasks. The Gazebo simulation environment was used to provide a visuo-tactile feedback to the model-based reinforcement learning algorithm hoping that the robot could then reason about the grasp's underlying physics.

Teaching Assistant Summer 2018
École de Technologie Supérieure
In this role, I was responsible of preparing, teaching and marking lab. coursework for a computer engineering class. I have produced some teaching materials for which I have received very good comments from the students. This materials can be consulted, in french, here: http://philna.de/au/435

Biofeedback control engineering through machine learning Summer 2018
Imaging and Orthopedics Research Laboratory
This project aimed at optimizing the control algorithm of a haptic feedback wheelchair simulator through reinforcement learning methods. Under the supervision of Prof. Rachid Aissaoui, I had the opportunity to explore the links between control theory and machine learning in the context of a real-time system.

Robotic Design Spring 2017
Sliq Media Technologies
Electronic and software design of an closed-loop automated aquaponic system. In this project, I was in charge of managing the developement efforts and of supervising a technician.

Development and operations (DevOp) 2015-2017
Sliq Media Technologies
Developement, computer network maintenance and analysis. Emphasis on the development of an automated software build machine system that aimed at allowing continuous developement and integration.

AWARDS & SCHOLARSHIPS

FRQNT - Master's Research Scholarship (Ranked 1st)	(35000$) 2020
NSERC - Alexander Graham Bell Canada Graduate Scholarship-Master's	(17500$) 2020
Vector - Vector Scholarship in Artificial Intelligence	(17500$) 2020
CAE - Career choice promotion scholarship	(2000$) 2020
Hydro-Québec - Career choice promotion scholarship	(3000$) 2020
ACDEC - Gilles Joncas Award	(1000$) 2020
Yves-Beauchamp Fund - Academic excellence and social involvement award	(2000$) 2019
NSERC - Undergraduate Student Research Awards	(4500$) 2019
FRQNT - Supplement to the Undergraduate Research Award	(2000$) 2019
Hydro-Québec - Career choice promotion scholarship	(3000$) 2019
NSERC - Undergraduate Student Research Awards	(4500$) 2018
FRQNT - Supplement to the Undergraduate Research Award	(2000$) 2018
Hydro-Québec - Career choice promotion scholarship	(3000$) 2018

ARTICLES

Tactile sensing based on fingertip suction flow for submerged dexterous manipulation Published
Philippe Nadeau, Michael Abbott, Dominic Melville and Hannah S. Stuart
Proc. IEEE International Conference on Robotics and Automation 2020

Tactile-Based Object Recognition Using a Grasp-Centric Exploration Accepted
Jean-Philippe Roberge, Louis Lapierre, Jennifer Kwiatkowski, **Philippe Nadeau** and Vincent Duchaine
Proc. IEEE International Conference on Automation Science and Engineering 2021

TECHNICAL ABILITIES

Computer, Electronics and Mechanical Engineering:

- C/C++, Python, Matlab, SimuLink, LabView, Bash
- ROS, Gazebo, MoveIt with UR5, UR10 robots
- Embedded development on FPGA, Atmel AVR, ARM, Raspberry Pi
- Protocols such as JTAG, I2C, USB, SPI, TCP, UDP
- Electronic circuits analysis and design, op-amps circuits
- Digital and analog filters design
- CAD using SolidWorks, SolidEdge
- Usage of machining tools like lathe and milling machine

COMMUNICATION

Proficiency in french and english. **TOEFL** score: 111/120
Strong ability to vulgarize and present in public. **Great sense** of teamwork and leadership.

VOLUNTEERING & OUTREACH

Chosen to be part of the baccalaureate program development committee 2018-2020

Co-Founder of a non-profit outdoor base camp, the "Camp Frontenac" 2016

- Vice-president in 2016-2018
- Vice-president in 2018-2020
- Vice-president in 2020-2022

Co-Founder of a student community workshop at Collège André-Laurendeau (the AlTech) 2013

- Vice-president in 2013-2014
- President in 2014-2015

Scout leader for the 229^{nd} group for approximately 400 hours of volunteering per year 2011-2018

SPORTS & SOCIAL

Outdoor activities, indoor rock climbing (5.11, V5), canoë-camping, skiing