Nicholas **Nadeau**

PROFESSIONAL ENGINEER (P.ENG.), DOCTOR OF PHILOSOPHY (PH.D.)

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Work

Halodi Robotics
Montréal, Canada

PROJECT DIRECTOR — *2021 -*

- Director of special robotics projects across various domains, including security, retail, and manufacturing.
- General manager of North American headquarters in Montréal.

BRIDGR
Montréal, Canada

ADVISOR — *2020 -*

- Expert advisor assisting with special projects and key introductions.
- Mentor through the Techstars AI Montréal accelerator.

AON3D
Montréal, Canada

ENGINEERING MANAGER — *2018 - 2021*

- Head of engineering and member of executive team.
- Responsible for Scientific Research and Experimental Development (SR&ED) Tax Incentive Program ($300K+ in tax refunds).
- Led product compliance and certification for EMI/EMC, CE Machinery Directive, and CE Low Voltage Directive.
- Directed requirements definition, development process, and transfer to production of industrial additive manufacturing products.

Nicholas Nadeau Consulting
Montréal, Canada

FOUNDER — *2017 -*

- Start-up advising, specializing in R&D and product development.

YPC Technologies
Montréal, Canada

TECHNOLOGY ADVISOR TO THE CEO — *2017 - 2018*

- Advised CEO throughout FounderFuel startup accelerator, leading to $1.8M CAD seed round in 2020.
- Led a team of engineers and directed robotics and software design, development, and implementation for FounderFuel Demo Day.

Rogue Research Inc.
Montréal, Canada

R&D ENGINEER — *2011 - 2018*

- Led the development of a novel robotic veterinary neurosurgery system, including trajectory generation algorithms, computer vision, and hardware design.
- Developed devices and systems for transcranial magnetic stimulation (TMS), near infrared spectroscopy (NIRS), deep brain stimulation (DBS), and image-based neuronavigation.

Education

École de technologie supérieure
Montréal, Canada

PHD - PRECISION AND COLLABORATIVE ROBOTICS — *2014 - 2019*

- Thesis: Towards the Development of Safe, Collaborative Robotic Freehand Ultrasound
- Created machine learning models and genetic algorithms for physical human-robot interaction.

McGill University
Montréal, Canada

B.ENG. - MECHANICAL ENGINEERING, BIOMEDICAL ENGINEERING MINOR — *2010 - 2014*

Certifications & Professional Affiliations

Professional Engineer (P.Eng.) Ordre des ingénieurs du Québec (OIQ)
Associate Value Specialist (AVS) SAVE International
Committee F42 on Additive Manufacturing Technologies ASTM International
Open Water Diver Professional Association of Diving Instructors (PADI)

Publications

2020	**Improved Test Methods for Polymer AM Inter-Layer Weld Strength and Filament Mechanical Properties**, Richard G. Cole, Kazem Fayazbakhsh, Abraham Avalos, Nicholas A. Nadeau. ASTM International Conference on Additive Manufacturing (ICAM).
2019	**Towards the development of safe, collaborative robotic freehand ultrasound**, Nicholas A. Nadeau. École de technologie supérieure.
2019	**Pybotics: Python Toolbox for Robotics**, Nicholas A. Nadeau. The Journal of Open Source Software.
2019	**Impedance Control Self-Calibration of a Collaborative Robot Using Kinematic Coupling**, Nicholas A. Nadeau, Ilian A. Bonev. MDPI Robotics.
2018	**Evolutionary Motion Control Optimization in Physical Human-Robot Interaction**, Nicholas A. Nadeau, Ilian A. Bonev. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
2018	**An Extrinsic Dexterity Approach to the IROS 2018 Fan Robotic Challenge Modality B**, Jennifer Kwiatkowski, Jean-Philippe Roberge, Nicholas A. Nadeau, Louis L'Écuyer-Lapierre, Vincent Duchaine. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
2017	**Characterization of a robotic micro-surgical system for small-animal neurosurgery**, Nicholas A. Nadeau, Alexandru Ciobanu, Fred Lamer, Mathieu Coursolle, Sean McBride, Stephen Frey, Roch Comeau. Society for Neuroscience.

Talks

2021-04	**Speaker - Hardware in the Loop: Training Robot Contact in an Unstructured Environment**, Montréal-Python 85
2020-04	**Speaker - Making Materials Matter**, Dyndrite Developer Conference 2020
2018-10	**Speaker - Evolutionary Motion Control Optimization in Physical Human-Robot Interaction**, 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
2017-11	**Speaker - Calibrating Robots with Python**, PyCon Canada 2017
2017-10	**Speaker - Calibrating Robots with Python**, Montréal-Python 67
2016-12	**Keynote - Robotics and Neuroscience**, Clearpoint Elementary Exhibition Summit
2015-06	**Speaker - Medical Robotics**, McGill Faculty of Medicine Explore Camp

Professional Development

2020-03	**Colombia Recruiting Mission**, VanHack	*Medellin, Colombia*
2020-02	**3nd ASTM Additive Manufacturing Center of Excellence Workshop**, ASTM International	*El Paso, USA*
2019-11	**Formnext 2019**,	*Frankfurt, Germany*
2019-09	**2nd ASTM Additive Manufacturing Center of Excellence Workshop**, ASTM International	*Senlis, France*
2019-05	**RAPID + TCT 2019**, SME	*Detroit, USA*
2018-10	**2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)**, IEEE	*Madrid, Spain*
2017-11	**Neuroscience 2017**, Society for Neuroscience	*Washington, USA*
2017-01	**MUSE 1.0 Bedside Ultrasound Course for Primary Care Clinicians**, McGill University Steinberg Centre for Simulation and Interactive Learning	*Montréal, Canada*
2016-11	**Neuroscience 2016**, Society for Neuroscience	*San Diego, USA*
2016-05	**Collaborative Robots Workshop**, RIA International	*Boston, USA*

Volunteer

2020 -   **Mentor**, Techstars Montréal AI Accelerator
2020 -   **Mentor**, FounderFuel Startup Accelerator
 2020   **Member of Technical Expert Panel & Mentor**, Code Life Ventilator Challenge for COVID-19
2020 -   **Reviewer**, Sensors
2019 -   **Reviewer**, Journal of Applied Mathematical Modelling
2019 -   **Reviewer**, International Journal of Advanced Robotic Systems (IJARS)
2018 -   **Reviewer**, The Journal of Open Source Software (JOSS)

Skills

Languages	English, French
Software	Illustrator, Linux, MS Office, Photoshop, SolidWorks, Ubuntu, Windows
DevOps	CircleCI, Docker, GitLab CI/CD, Travis CI,
Back-end	Flask, Protocol Buffers (protobuf), REST API
Front-end	HTML5, Hugo, React
Programming	C/C++, Java, JavaScript, LaTeX, Node.js, Python, TypeScript
Machine Learning	Keras, OpenCV, scikit-learn, TensorFlow
Source Control	Git, Subversion (SVN)