Eitan Bulka

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EDUCATION

MCGILL UNIVERSITY
PhD in Mechanical Engineering
Apr 2021 | Montreal, QC
Cum. GPA: 4.00

MCGILL UNIVERSITY
BEng, Mechanical Eng (Honours)
Dec 2015 | Montreal, QC
Dean's Honour List (All Semesters)
Cum. GPA: 3.93

NEWTON SOUTH HIGH SCHOOL
June 2011 | Newton, MA
Honor Roll (All Semesters)

SKILLS

Matlab • Simulink • Python • Ignition • SQL • Automation Studio • C++ • ROS • Gazebo • LaTeX • Linux • Microsoft Office • Solidworks

AWARDS

Intramural Sports Hall of Fame Inductee
MEDA Scholarship
British Association Medal
MEUSMA Scholarship
Ralph & Ruth Collins Scholarship
SURE Award
James & Daisy Mathison Scholarship
Richard Laurence Weldon Scholarship
AP Scholar Award

SELECTED PUBLICATIONS

E. Bulka and M. Nahon, "Autonomous Fixed-Wing Aerobatics: From Theory to Flight", International Conference on Robotics and Automation (ICRA), May 2018.

E. Bulka and M. Nahon, "A Universal Controller for Unmanned Aerial Vehicles", International Conference on Intelligent Robots and Systems (IROS), Oct 2018.

E. Bulka and M. Nahon. "Automatic Control for Aerobatic Maneuvering of Agile Fixed-Wing UAVs", Journal of Intelligent & Robotic Systems, 2019.

E. Bulka and M. Nahon, "A Unified Control Strategy for Autonomous Aerial Vehicles", Autonomous Robots, 2021.

E. Bulka and M. Nahon, "Reactive Obstacle-Avoidance for Agile Fixed-Wing Unmanned Aerial Vehicles," Field Robotics, 2022.

INDUSTRY EXPERIENCE

BOSTON METAL | Senior Manager, Advanced Automation
Sep 2025 – Present | Remote
Oversee all process control software development and deployment including:
PLC software originating from MATLAB/Simulink that contains supervisory logic, feedback control systems, state estimators, and fault detection.
Human-Machine-Interface (HMI) using Ignition Perspective.
Data analysis tools using Ignition and Python
Prioritize tasks and ensure deadlines are met.
Train new hires and mentor teammates.

BOSTON METAL | Model–Based Controls Engineering Manager
Jan 2025 – Sep 2025 | Remote
Same duties as above.

BOSTON METAL | Model–Based Controls Engineering Team Lead
June 2024 – Jan 2025 | Remote
Grew team from 3 to 6 members doing same duties as above.

BOSTON METAL | Model–Based Controls Engineer
Aug 2021 – June 2024 | Remote
Develop supervisory logic, feedback control systems, state estimators, and fault detection using MATLAB/Simulink for Molten Oxide Electrolysis process control.
Use Mathworks code generation tools to deploy code to B&R PLC.
Develop Human-Machine-Interface (HMI) using Ignition Perspective.
Conduct testing of algorithms using model-in-the-loop (MiL), target-in-the-loop (TiL), and live commissioning.

ROBOTICS AND AUTOMATION CONSULTANT | Contract
April 2019 – July 2021 | Remote
Software consulting services for control systems, motion planning, and PX4 programming (UAVs). Former Clients: Continental Control and Designs (Huntington Beach, California), Vayu (Ann Arbor, MI), and Notos Technologies (Montreal, QC)

ALTAEROS ENERGIES | Instrumentation Intern
Sept 2017 – Oct 2017 | Somerville, MA
Configured and tested a differential GPS unit used on a tethered aerostat.

MCGILL UNIVERSITY | Teaching Assistant
Sept 2014 – Apr 2021 | Montreal, QC
Taught weekly tutorials for the following courses: Dynamics (6x), PDE's and Linear Algebra (3x), and System Dynamics and Control (1x).

ACADEMIC RESEARCH

AEROSPACE MECHATRONICS LAB | Research Assistant
Jan 2021 – Aug 2021 | Montreal, QC
Developed a control strategy for collaborative payload transport with multiple drones. The solution was implemented in software-in-the-loop simulation and in outdoor flight testing.

AEROSPACE MECHATRONICS LAB | Graduate Researcher
Jan 2016 – Apr 2021 | Montreal, QC
Developed control and collision avoidance strategies for agile fixed-wing unmanned aerial vehicles. The algorithms were validated in simulations, hardware-in-the-loop simulations, and both indoor and outdoor flight tests.

AEROSPACE MECHATRONICS LAB | Undergraduate Researcher
Jan 2014 – Dec 2015 | Montreal, QC
Developed a model which predicts the effect of wind on a quadrotor and developed a pressure based wind sensor for measuring air flow on-board a quadrotor.