Adam Lastovka

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LinkedIn Website

Education

University of Waterloo, Canada
Bachelor of Applied Science in Mechanical Engineering - 92%, 4.0 GPA 2021 - Expected Apr 2026

Skills

Programming Languages: Python, MATLAB, C, C++, Javascript
Software & Tools: Solidworks, Inventor, AutoCAD, ANSYS (FEA+CFD), Abaqus (FEA), KiCad, Git
Technical: Simulation, Control Theory, FDM/SLA Print, Embedded programming, Software automation, Linux

Work Experience

Kraken Sense / Systems Engineering Intern Jan 2025 - Apr 2025
• Commissioned biomolecular diagnostic system: requirements definition, system architecture, detailed design
• Designed multiplex qPCR detection system including simulation-based fluorescence spectral optimization, lens layout determination, and design of custom lightguides.
• Process engineering and fluidic chip design for DNA extraction and biomarker quantification.

Cornell University / R&D Engineering Intern May 2024 - Aug 2024
• Conducted high precision systems design, control system development, and process optimization for time-resolved protein crystallography instrument enabling cutting edge biomolecular research.
• Programmed GUI control software and integrated multiple electro-mechanical assemblies into unified system.
• Programmed and debugged STM32/Arduino systems
• Designed drop-dispenser based substrate deposition system using an automated setup to run 10k+ test cases.

University of Waterloo / Undergraduate Research Assistant – Control Theory Jan 2024 - Apr 2024
• Derived motion equations for 7DOF mobile manipulator and developed dynamic simulation in MATLAB.
• Implemented feedback linearization control for non-adaptive path following control.
• Developed estimator based adaptive path following algorithm allowing robot to follow any arbitrary closed path.

Czech Academy of Sciences - HiLASE Centre / Laser Micromachining Intern Aug 2023 - Dec 2023
• Developed wave propagation simulation for model-based design and verification of micromachining processes.
• Implemented novel phase retrieval and adaptive mask optimization ML algorithm enabling beam profile shaping.
• Developed automated process tuning system using CNN and GAN image classification models in PyTorch.

Aero Vodochody Aerospace / Control Design Intern May 2022 – Aug 2022, Jan 2023 - Apr 2023
• Designed autopilot system achieving MIL-F-8785c Level 1 compliance.
• Developed 6DOF non-linear simulation of a jet aircraft in MATLAB enabling future model-based design.
• Employed non-linear system identification techniques to characterize engine behavior with 95% accuracy.
• Used identified engine model to create an autothrottle control system using MPC.
• Integrated aircraft model in HIL simulator to validate controller behavior after embedded implementation.

Project Experience

Scanning Electron Microscope Jan-2024 – Present
• Leading electron optics design for SEM capstone project.