

David Ologan

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Education:

Carnegie Mellon University (CMU), Pittsburgh, PA

Candidate for Masters in Mechanical Engineering- Research, Concentration in Robotics and Control Systems

Expected Graduation Date – 05/2024

Massachusetts Institute of Technology (MIT), Cambridge, MA

Bachelors of Science, Mechanical Engineering, Electrical Engineering and Computer Science

Graduation Date - 05/2022

Work Experience:

- Shark/Ninja: Robotics Development Intern (2021)
 - Designed and manufactured unique brush-roll geometries and testing apparatus to optimize pet hair pickup on Shark Robotic Vacuum by 58%
 - Drafted and fabricated Floor Powered Side Brushes to minimize product costs and chassis size without sacrificing edge cleaning performance
- MIT ELO/Volunteers for Medical Engineering (VME)/MIT Sandbox (2020)
 - Designed a portable sit-to-stand apparatus for an elderly woman with limited mobility in an attempt to assist her in daily life and with her needs in handicapped bathrooms
 - Partnered with MIT Sandbox to bring the design to market
- MIT 6.a01 Learning Assistant: Making With Technology and Fish-Bots, Cambridge MA (2018-2020)
 - Instructed other undergraduate students on the construction of a computer controlled brushless motor using modern fabrication techniques and microcontrollers
 - FISHBOTS: Constructed an underwater whale shaped remotely operated vehicle (ROV), utilizing waterproof servos to mimic the undulating motion commonly seen in whales to produce thrust
- Columbia University: Lamont-Doherty Earth Observatory (2017-2018)
 - Created a python-based Sequence Stratigraphy Algorithm to determine Seismic Risk in the Marmara Sea and utilized seismic data from the region to generate a model that analyzes prior and future earthquake activity

Academic Experience:

- MIT UROP: Deng Energy and Nanotechnology Group, Cambridge MA (2020)
 - Implemented a Physics Informed Neural Network (PINN) using TensorFlow and DeepXDE libraries to effectively model the Inverse Reaction of the Lorenz System
- MIT UROP: Beaver Cube, Cambridge MA (2020)
 - Assisted with the development of a 3-u CubeSat with Ocean Surveying Payload, f-prime based flight computer
- MIT UROP: 3D Printed Homes, Cambridge MA (2020)
 - Evaluated the feasibility of affordable, low cost homes using large scale 3D Printing
 - Worked with Professor Hardt to develop a comprehensive python-based model that determined the requirements of a factory network to satisfy intended global production needs
- Momentum, Cambridge MA (Office of Minority Education/ General Motors) (2019)
 - Partnered with GM to improve passenger entry and egress in autonomous ride sharing vehicles
 - Recipient of Momentum Feasibility Award for RFID optimized system that tracked and logged passenger identities
- MIT UROP: Rohsenow Kendall Heat Transfer Laboratory, Cambridge MA (2018-2019)
 - Fabricated a glass heat resistant enclosure for thermal energy storage experiments
 - Developed and repaired lab specific equipment for HFI-5 Induction Heater, Cooling System
 - Performed experiments on various materials (such as silicon) to determine if they possess better latent heat properties for thermally storing electric energy through TES. Feasibility for energy storage was evaluated based on price and specific heat capacity

Related Coursework:

Introduction to Robotics, Design and Analysis of Algorithms, Power Electronics Laboratory, Dynamics and Controls II, Product Engineering Processes, Thermo-Fluids Engineering I, Microcomputer Project Laboratory, Nanoelectronics and Computing Systems

Skills:

- Python, C++, C, Assembly, MATLAB, SolidWorks, AutoCAD, Autodesk Fusion, Creo, Eagle, PSOC Creator
- Machine Shop Experience (Mill, Lathe, 3D-Printer, Waterjet, CNC, Laser-Cutter), Circuit Construction and Design

Extracurricular Activities:

- MITERS (MIT Electronics Research Society), MIT Maker-Works (2018-2021)