

Kyle B Thompson

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EDUCATION

Massachusetts Institute of Technology

Cambridge, MA

Candidate for Bachelor of Science in Mechanical Engineering

2019-2023

Minor in Computer Science and Concentration in Economics

GPA: 4.8/5.0

- Relevant Coursework: Feedback & Feedforward Controls I & II; Dynamics I & II; Kinematics and Differential Motion; Design & Manufacturing I: Autonomous Machines; Fundamentals of Programming; Thermal-Fluids Engineering I & II; Computational Thinking & Data Science; Numerical Computation in MATLAB; State-Space Control; Robotic Systems; RBD; Engineering Systems Design; Bio-Inspired Robotics; Dynamic Simulations
- Relevant Course Projects: Active Gimbal Control; Autonomous 2.s007 Robot; 6 DOF Robot Control; Small Radar System (SAR and Doppler); Magnetic Levitation: EM Control; 2 DOF Robot Arm Position Control

WORK EXPERIENCE

REGENT Craft

Cambridge, MA

GNC and Flight Software Engineer Intern

June 2022-August 2022

- Designed and implemented an active control system for the fastest hydro-foiling vehicle in the world of its size, across multi-operational modes - hull-borne, hydrofoil-borne, wing-borne, and autonomous transitions
- Built and increased functionality of a full mission simulation environment to validate digital flight software systems before test flights; Built and integrated a mock-pit to better simulate future flight operations

Jaros Baum & Bolles

New York, NY

Engineering Intern

June 2021-July 2021

- Developed and reviewed HVAC systems for Disney's new Northeastern Headquarters in New York City, a building scheduled to take up an entire city block
- Evaluated thermal loads for various space states, calculated pressure drops in proposed HVAC systems, and developed an in-house calculator to evaluate building infiltration

PROJECTS

Self-Balancing Robot Control

Cambridge, MA

MIT Dynamics and Controls

September-December 2021

- Developed stabilization feedback control for self-balancing Robot for long term stability and path following with PD, PID, and State Space controllers

Built an Operational Nuclear Fusor

Cambridge, MA

MIT Nuclear Science and Engineering

January-February 2020

- Constructed a working Farnsworth Fusor and operated it in the presence of Deuterium once under vacuum

MIT PokerBots

Cambridge, MA

Top 20 Finalist and Top 10 Freshmen Teams

January-February 2020

- Programmed a completely autonomous pokerbot to compete against other teams in one month; with the challenge of a random permutation of card values unknown to the play at the start of 1000 hands
- Utilized Baye's Theorem to generate a more consistent list of valid permutations after showdown

LEADERHIP

Autonomous Underwater Vehicle

Cambridge, MA

MIT Engineering Systems Design

September 2021 - Present

- Chief Finance Officer: purchased and organized supply logistics while also coordinating with outside manufacturers for a \$50,000 prototype/proof of concept
- Redesigned and manufactured weight-shifting mechanism of AUV for pitch, roll, and yaw control; 7% size reduction

MIT Energy Hackathon

Cambridge, MA

Director of Communication

July – November 2021

- As DOC, I organized the outreach and communication of MIT's student-run clean energy hackathon along with other event logistics. I developed a new global outreach strategy for first ever hybrid event that boasted 200+ applications from all over the world.

SKILLS

Programming: MATLAB; Python; C++; Simulink; ARDUINO; Git; OpenCV; ROS

Design and Fabrication: CAD Experience; Solid Works; Laser Cutter; Soldering; 3D Printing; Waterjet

