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; Object Position and Orientation Detection; Autonomous 2.s007 Robot; 6 DOF Robot Control; Small Radar System (SAR and Doppler); Magnetic Levitation: EM Control; 2 DOF Robot Arm Control; Finger Expansion Robotic End-Effector

WORK EXPERIENCE

REGENT Craft — Cambridge, MA
GNC and Flight Software Engineer Intern — June 2022-Auguest 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-bourne, 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

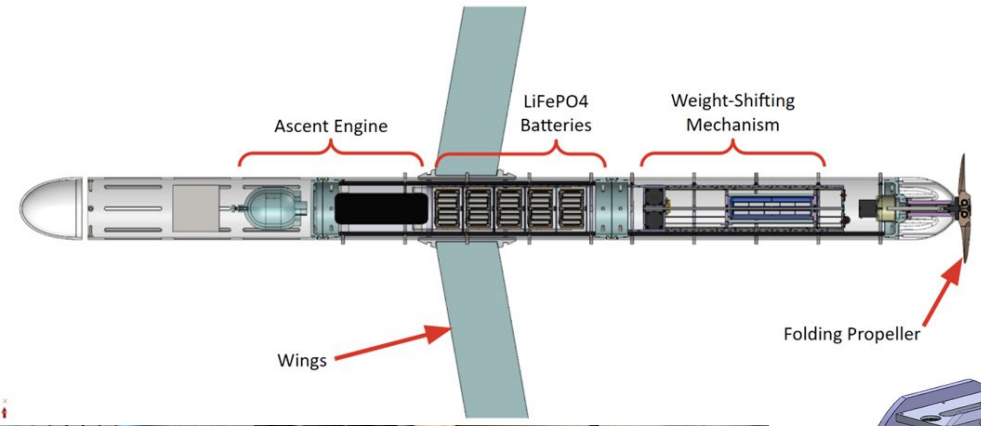
- Chief Finance Officer: purchased and organized supply logistics while also coordinating with outside manufacturers for a $50,000 prototype/proof of concept
- Redesigned and manufactured weight-shifting mechanism of AUV for pitch, roll, and yaw control; 7% size reduction

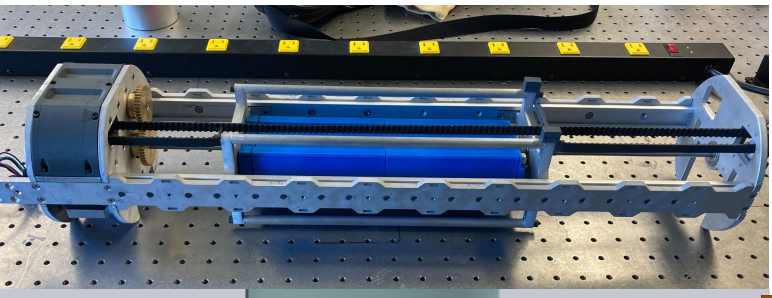
MIT Energy Hackathon — Cambridge, MA
Director of Communication — *July – November 2021*

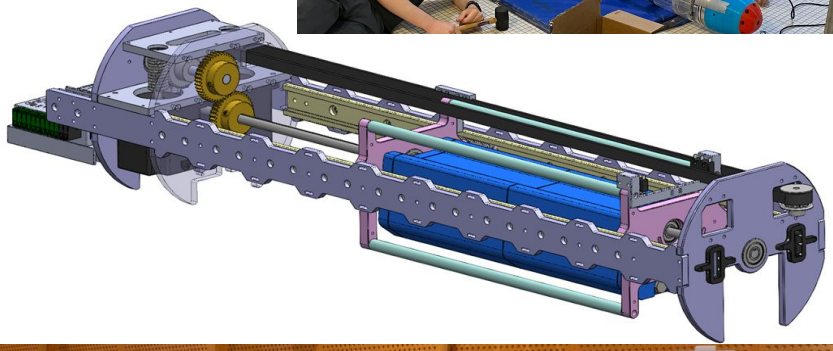
- As DOC, I organized the outreach and communication of MIT's student-run clean energy hackathon along with other event logistics. I developed a new global outreach strategy for first ever hybrid event that boasted 200+ applications from all over the world.

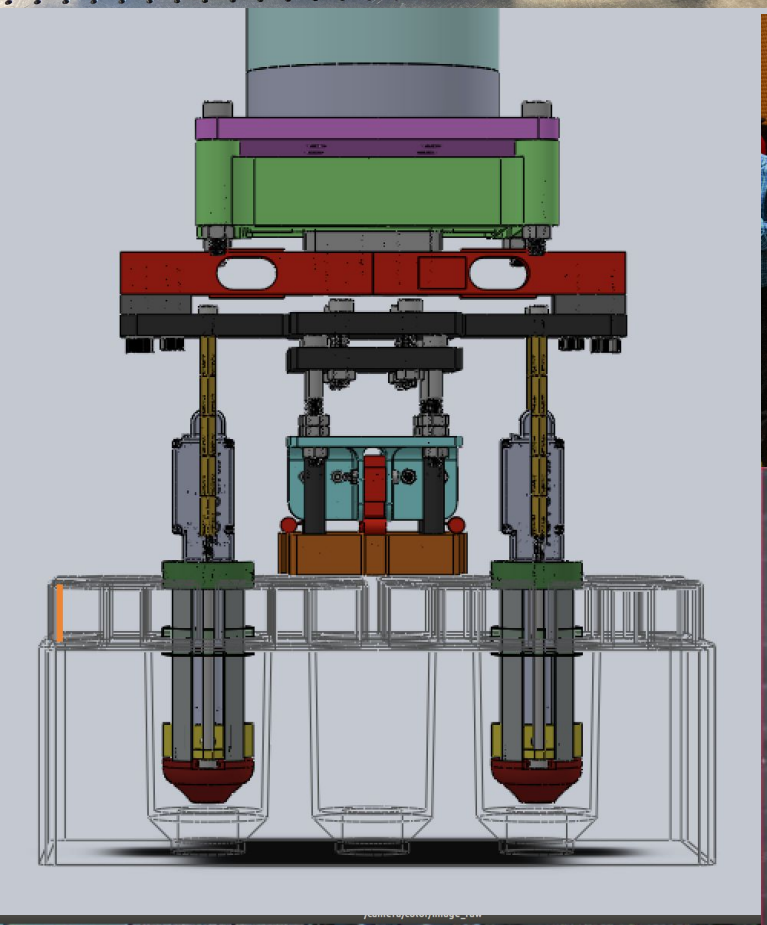
SKILLS

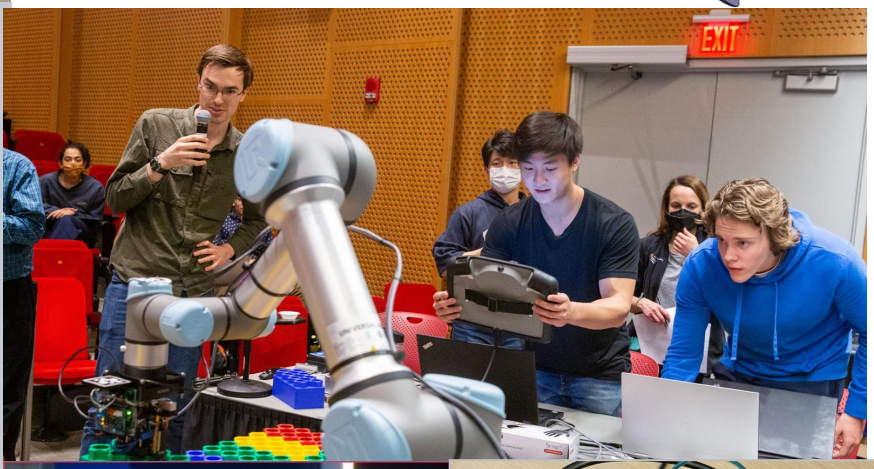
Programming: MATLAB; Python; C++; Simulink; ARDUINO; Git; Computer Vision; ROS;
Design and Fabrication: CAD Experience; Solid Works; Laser Cutter; Soldering; 3D Printing; Waterjet


Ascent Engine
LiFePO4
Batteries
Weight-Shifting
Mechanism
Wings
Folding Propeller





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