

Design Engineering student at Imperial College London with an extensive background in competitive robotics, as well as work experience in mechanical and systems engineering. I love to work on complex, high power or moonshot problems, particularly ones involving autonomous systems with interesting planning, dynamics and control aspects.

Education

Second-year Design Engineering (MEng) student at Imperial College London. **Expected Graduation: 2023**

Relevant coursework: *Computing, Electronics: Signals, Systems and Control, Engineering Mathematics, Solid Mechanics, Production and Materials, Industrial Design Engineering, FEA, Physical Computing*

Employment

Spacebit: Contract Analysis **2021**

- Analysis work on the UK's first mission to the moon

Dyson School of Design Engineering: Maths Module Placement and Teaching Assistant **2020**

- Redesigned and rebuilt the module problem sheet framework to fit better with an online learning environment

Simplicity Product Development: Mechanical engineering intern **2018, 2019**

- Designed a cost-effective linear motion control testbed, with swappable motors and controllers
- Did mechanical, electrical, and pneumatic assembly as well as redesign work for biotech assembly fixtures

Rancho Bernardo Community Presbyterian Church: Tech assistant, Head lighting designer **2015 - 2019**

Project and Team Experience

Imperial College Hyperloop: Electronics and Control Systems **2021 - present**

- Leading the development and production of a 50kW+ traction inverter system for a linear induction motor.

Imperial College Robotics Society: Chief Lab Manager **2020 - present**

- Lab manager of a student-run makerspace operating within the EEE department of Imperial College London.
- Coordinated with the department to move into a newly-renovated lab space

Imperial College London Eurobot Team: Team Lead **2020 - present**

- Remotely led a team of students to build a fully autonomous competition robot running the ROS framework.
- Worked on CAD design, ROS, Localization, Planning, Networking and Computer Vision systems.

Imperial College London Advanced Rocket Recovery: Design and Control Systems **2019 - 2020**

- Design for an experimental drone project, attempting to recover a model rocket while still in-flight.

FIRST Tech Challenge team 10092: Team lead, Mechanical lead **2015 - 2019**

- Coordinated a team of 15 middle and highschool students to design, manufacture and program competitive robots that went on to compete and win awards at an international level
- Developed a trajectory recording and following algorithm for a skid steer robot that allowed for autonomous navigation at similar velocities and accuracies to driver operated control

FIRST Robotics Competition team 6995: Controls Software Lead **2019**

- Designed and tuned the control software for the lift on a 120lb competitive robot which was part of the winning alliance at the 2019 San Diego regional
- Developed and tuned a computer vision-based auto-alignment and scoring routine

Research with Dr. Hugo Pedro at the University of California San Diego **2018 - 2019**

- Developed a web-based machine learning system for generating and presenting solar power forecasts using existing weather data

Engineering Skills

Proficient: PTC Creo \ Solidworks \ Onshape \ Python \ Java \ Git and Github \ 3D printing \ Project management and team coordination \ ROS \ Embedded Systems Development (STM32F and Arduino)

Familiar: Fusion 360 \ MATLAB and Simulink \ Linux \ C/C++ \ Julia \ Machine Learning \ Bond graph systems modeling \ Systems Control and Optimization \ Web development \ UI design \ Machining and manufacturing