

Pursuing a **minor degree** in the Department of **Industrial Engineering and Operations Research (IEOR)**

PROFESSIONAL EXPERIENCE

SPACE x VIEW Pte. Ltd, SINGAPORE | Research & Development Internship [Jun-Jul'21]

- Worked with a team of **5** co-interns to create the **first working prototype** of a system of controllable buoys capable of oceanic data collection and transmission for building real-time models that help the **Japanese Fishing Industry**
- Tasked with the design of the **Power Management System** for the buoy to make it operational for **3+ hrs**
- Integrated the **PH, Temperature, TDS and GPS** sensors along with the **Solar Panels** on the final prototype

KEY TECHNICAL PROJECTS

TEAM AEROVE | UMIC, IIT Bombay

[Sep'20-Present]

Senior Engineer | *Guide: Prof. Dhwanil Shukla, Dept. of Aerospace Engineering IIT Bombay*

WORLD CHAMPIONS of the **IARC Mission 9** Simulation Challenge, hosted by AUVSI across **5 Continents**

Motion Planning	<ul style="list-style-type: none">• Working on 3-D Mapping & Motion Planning problems for aerial vehicles in unknown environments• Validated the use of path planning algorithms like A*, RRT* & DWA for indoor drone systems• Critiqued various mapping frameworks like Octomaps & Skimaps for real-time probabilistic mapping
Controls	<ul style="list-style-type: none">• Developed Minimum Snap Trajectories for the drone using jointly optimized polynomial segments• Worked with varied drone hardware, and validated basic flight strategies using MAVROS scripts• Formulated a Finite-State-Machine structure acting as the central mission Autopilot for the drones

EXTENDED MASK R-CNN | Course Project

[Oct-Nov'20]

Prof. Biplab Banerjee | Machine Learning for Remote Sensing

- Constructed a two step approach for **multi-label classification** of **7** different Yoga Poses on a custom dataset
- Used the Mask R-CNN trained on the **COCO** dataset as the backbone network for human **instance segmentation**
- Developed a **neural network** for classifying the extracted instances to achieve an accuracy of **95.6%** on the test data

ASME - STUDENT DESIGN CHALLENGE 2021 | UMIC, IIT Bombay

[Dec'20-Apr'21]

An International Mechatronics competition organised by the American Society Of Mechanical Engineers

- Reached the **World Finals** of the competition after going through several knockout rounds | **GLOBAL RANK 4**
- Led the **electrical subsystem** of the team to build a bot capable of carrying **5 Kgs** powered by a single AAA battery
- Designed and created a stack of **Boost Converters** on **customized PCBs** for maximising the battery performance

POSITION OF RESPONSIBILITY

COORDINATOR, TEAM AEROVE | UMIC, IIT Bombay

[May'19-Jul'20]

The Innovation Cell aims to facilitate technical start-ups and foster an atmosphere of innovation and entrepreneurship

- Member of the team in charge of **planning, organizing & publicizing events** under the Innovation Cell
- Drafted a budget proposal of **INR 1.5 Million** to the Student Technical Project Committee, targeting **IARC 2022**
- Conducted the recruitment drive and took interviews to shortlist **30** students from a pool of **100+** freshmen

ACADEMIC MENTOR | Department of Aerospace, IIT Bombay

[May'21-Present]

Department Academic Mentorship Program

- Part of a team of **23** mentors selected based on interviews & peer-reviews, closely mentoring **7 sophomores**.
- Helping mentees, strike a balance between **academics & extracurriculars**, and manage time efficiently
- Contributed in the **Department Video Initiative**, aimed as an introduction to the department labs & facilities

SPORTS SECRETARY | Hostel 2, IIT Bombay

[Sep'20-Mar'21]

- Member of a **3-tier** hostel council made up of **28** members selected after rigorous groundworks and interviews
- Responsible for **ideating** and **organising** all sports related activities and promoting a healthy sports culture
- Conducted several **E-Sports Tournaments** to sustain the sports culture in the hostel amidst an online semester

EXTRACURRICULARS

Social	<ul style="list-style-type: none">• Mentored 25+ middle school students in a solar lamp building workshop with the SoULS Organization• Created 2+ hrs of educational YouTube content for underprivileged children with NSS, IIT Bombay
Sports	<ul style="list-style-type: none">• Received 1 yr of professional training in Football under the National Sports Organization• Bagged Bronze in the Dehradun district during the Ranger's U-17 Cup with the BBA
Cultural	<ul style="list-style-type: none">• Stood First among all the freshmen in the Inter Hostel Music Video Making Competition• Performed a group hip-hop dance in front of a crowd of 500+ people at Salsa Night