Aditya Prakash

Undergraduate Student

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Education

2019–present	**Bachelor of Technology, Aerospace Engineering**, *Indian Institute of Technology Kanpur*, India,	9.0/10.0.
2017–2019 :	**AISSCE (CBSE - XII)**, *Science*, BNS DAV Public School, Giridih, India	97.6%.
2017 :	**AISSE (CBSE - X)**, BNS DAV Public School, Giridih, India	10.0/10.0.

Areas of Expertise

Space Dynamics, Robotics and Control systems.

Research Experience

SURGE, Indian Institute of Technology Kanpur

June,2021 –
August,2021

Trajectory Tracking control for space robotic manipulator.

- Learnt about the kinematics and dynamic model of a robotic manipulator and various existing control designs.
- Reformulated the control objective for trajectory tracking and proposed PD and Adaptive controllers based on the new control objective.
- Performed numerical simulations using MATLAB and Python to prove the efficiency of the proposed design for 2-link planar space robotic manipulator.
- The end-effector of the manipulator was able to traverse a rectangular path with minimal overshoots at the direction changes equivalent to 0.56% of the dimension of the path.

Advisor : **Dr. Dipak Kumar Giri**, *Assistant Professor, Department of Aerospace Engineering*, IIT Kanpur (*Personal Web-page*)

Manuscript in Progress

Aditya Prakash, Dipak Kumar Giri, and Shashi Ranjan Kumar. Dynamic velocity error based trajectory tracking for space robotic manipulator.

Coursework

Real Analysis & Calculus	Linear Algebra	Introduction to Physics
Dynamics	Optimal Space Flight Control	Flight Mechanics
Fluid Mechanics	Thermodynamics	Incompressible & Compressible Aerodynamics
Solid Mechanics	Aerospace Structures	Experiments in Aerospace Engineering

Computer skills

Prog. Langs.	Python, MATLAB, PyTorch, keras, C, C++
Tools	LabView, Simulink, LaTeX

Position of Responsibility

2021	**Project Mentor**, *Brain and Cognitive Society*, IIT Kanpur.
Project Title	Analysing Steinmetz Dataset
2020 – 2021	**Secretary**, *Brain and Cognitive Society*, IIT Kanpur.
2020 – 2021	**Student Guide & Academic Mentor**, *Counselling Service*, IIT Kanpur.