

# RISHABH DEV YADAV

Postgraduate Research, The University of Manchester, UK.

✉ [rishabh.yadav@postgrad.manchester.ac.uk](mailto:rishabh.yadav@postgrad.manchester.ac.uk) [in rishabhdevyadav](https://www.linkedin.com/in/rishabhdevyadav) [GoogleScholar](https://scholar.google.com/citations?user=...)

## Education

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### The University of Manchester, UK

Sep 2023 – Present

*PhD Computer Science (3.5 years) European Laboratory for Learning and Intelligent Systems (ELLIS) PhD Student*

**Research Title:** “Learning-Based Approach for Non-Linear Applied Control”

**Supervisor:** Dr. Wei Pan

### International Institute of Information Technology, Hyderabad, India

Aug 2021 - Jul 2023

*MS by Research (Computer Science Engineering)*

### PDPM Indian Institute of Information Technology D&M, Jabalpur, India

Aug 2015 - April 2019

*Bachelor of Technology (Mechanical Engineering)*

## Experiences

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### Teaching Assistant, Fundamentals of Computer Architecture

*Supervisor: Dr. Pavlos Petoumenos and Dr. Luca Peres*

1st Semester, 2025/26

*The University of Manchester.*

### Visiting PhD Researcher Multi-Agent Cooperative Aerial Payload Transportation

*Supervisor: Prof. Javier Alonso-Mora (Turing Research Placement)*

July 2025 – Aug 2025

*Cognitive Robotics, TU Delft.*

### Teaching Assistant, Knowledge Based AI

*Supervisor: Dr. Joseph Razavi*

2nd Semester, 2024/25

*The University of Manchester.*

### Research Associate, Non-Linear Control for Aerial Manipulation

*Supervisor: Dr. Spandan Roy*

July 2021 – July 2023

*Robotics Research Center, IIT Hyderabad.*

### Teaching Assistant, Advances in Robotics and Control

*Supervisor: Dr. Spandan Roy*

Spring 2023

*IIT Hyderabad.*

### Teaching Assistant, Robotics - Dynamics and Control

*Supervisor: Dr. Nagamanikandan Govindan*

Monsoon 2022

*IIT Hyderabad.*

### Research Associate, Autonomous Navigation of Quadrotor

*Supervisor: Prof. K. Madhava Krishna*

July 2020 - July 2021

*Robotics Research Center, IIT Hyderabad.*

### Research Internship, Precision Guidance Kit for Artillery Shells

*Supervisor: : Dr. Mangal Kothari*

Apr 2020 – July 2020

*Aerospace Department, IIT-Kanpur.*

### Research Associate, Co-operative Multi-agent Mobile Robots

*Supervisor: Prof. Kamalakar Karlapalem*

June 2019 – Mar 2020

*AARG Lab, IIT-Hyderabad.*

### Project Associate, Multi-terrain Mobile Robot

*Supervisor: Prof. VK Gupta*

May 2018 – Dec 2018

*Mechatronics Lab, IIT Jabalpur.*

### Summer Internship, UAV Design

*Supervisor: Dr SN Omkar*

May 2017 – July 2017

*Micro Air Vehicle Lab, IISc Bangalore.*

### Summer Internship, Mobile Robotics

*Supervisor: Dr. Rahul Kala*

May 2016 – July 2016

*IIT-Allahabad.*

## Projects

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### Agricultural Drones |

Jan 2022 - Jul 2023

- Designed, manufactured a drone-based pollination system for paddy crops in collaboration. Developed an active roller-based pollinator module with adaptive control to enhance precision spraying and boost pollination efficiency.

### Collaborative Manipulator |

Jan 2022 - Jul 2023

- Developed impedance control and hybrid force–motion control frameworks for a collaborative manipulator to achieve stable, compliant interaction with unstructured environments.

### Autonomous Navigation of Quadrotor |

Aug 2020 - July 2021

- Developed Gazebo PX4-SITL simulation environment and hardware integration of open-source path planning algorithms (Fastplanner, Ewokplanner, PX4 Safe Landing Planner) to pixhawk based quadrotors using depth and tracking camera

### MINION - Mobile Robot |

June 2019 - March 2020

- Hardware and software prototyping of ROS based mobile robot for co-operative formation control and payload delivery. Implemented MPC based trajectory tracking control using ROS and Gazebo

## Key Highlights

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### Scholarships |

- Secured ELSA Mobility Funding for a research residency in AI-driven robotic systems (Feb 2026 – Aug 2026).
- Awarded a fully funded PhD studentship at The University of Manchester (Sep 2023 – Feb 2027).
- IIIT Hyderabad research student fellowship to cover tuition fee during Masters program (Aug 2021 - Jul 2023).
- Awarded with Government Merit-cum-Means based Scholarship during B.Tech program (Aug 2015 - May 2019).

### Robotics Competition and Volunteering |

- Participated ROBOCON 2019: Autonomous Quadruped Legged Robot; ROBOCON 2018: Autonomous ShuttleCock Throwing Robot; ROBOCON 2017: Semi-Autonomous Disc Throwing Robot.
- Student Counselling Coordinator, IIITDM Jabalpur (May 2018 - May 2019).
- Reviewer for journals and conferences: IEEE TRO, CDC, L4DC, IEEE/ASME TMECH, IEEE L-CSS, IEEE RAL, ICRA, IROS, CASE, IEEE TASE.

### Presentations |

- Paper and Poster Presentation in ICRA 2025 Conference, Atlanta USA (Apr 2025).
- Poster Presentation at International Conference on Automation and Computing, Sunderland, UK (Aug 2024).
- Best Poster Prize at the PGR Symposium, Computer Science Department, University of Manchester (May 2024).
- Lecture on Recent Trends in Robotics in Faculty Development Programme at IIIT Jabalpur (Jul 2022).
- Paper Oral Presentation in ICAR 2021 Conference, Virtual (Dec 2021).
- Paper Oral Presentation in ICRA Workshop: Multi-Robot, 2020 Conference, Virtual (Jun 2024).
- Poster Presentations at IIIT Hyderabad R&D Showcase on autonomous aerial navigation (2020, 2021, 2022).

## Technical Skills

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**Languages:** Python, C, C++, MATLAB

**Tools:** Ubuntu, ROS, Gazebo, IssacSim, Solidworks, PX4, Betaflight, Git, Latex, Pytorch, JAX, Docker

**Hardware:** 3-D Printer, Boards(Pi, Intel NUC, Jetson), Pixhawk, Realsense Camera, Optitrack Motion Capture System

## Research Collaborations

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**Spandan Roy:** Associate Professor, Robotics Research Center, IIIT Hyderabad, India.

**Sihao Sun:** Postdoc Researcher, NWO Veni Laureate, Cognitive Robotics (CoR), Delft University of Technology.

**Simone Baldi:** Southeast University, Nanjing, China.

**Jianguo Zhao:** Head Adaptive Robotics Lab, Colorado State University, USA.