


# Sanad Shaha

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## PROFILE

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I am interested in robotics, control systems, and autonomous technologies, particularly in developing algorithms for UAV (Unmanned Aerial Vehicles) applications. Alongside my engineering interests, I enjoy quizzing. I am eager to explore opportunities that bridge theoretical concepts with practical applications, especially in multi-agent systems.

## RESEARCH EXPERIENCE

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### Distributed Systems and Control Lab, IIT Kanpur

May 2025 – Jul 2025

#### Project Intern- Dr. Soumya Ranjan Sahoo

Kanpur, India

- Selected for the prestigious SURGE Internship Program and worked on UAV-based control systems.
- Proposed and implemented a novel control law to achieve optimal UAV formation geometry for precise 3D moving target tracking on dynamically tilting inclines.
- Conducted extensive MATLAB-based simulations to validate the effectiveness and robustness of the proposed approach in realistic scenarios.

### Multi-agent Simulation and Control Lab, IISER Bhopal

Mar 2024 – present

#### Project Intern - Dr. Arijit Sen

Bhopal, India

- Successfully solved a 3D stationary target localization problem using Information Maximization, achieving optimal formation geometry for precise target estimation.
- Implemented a new control law to achieve the optimal formation geometry in 3D.
- Conducted extensive MATLAB simulations to validate the proposed solution, showcasing its effectiveness.

## EDUCATION

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### Indian Institute of Science, Education and Research, Bhopal BS Electronics and Communication Engineering- CPI: 8.15/10

2022 – present  
Bhopal, India

### Alard Public School CBSE Standard 12 - Percentage: 82.00%

2020 – 2022  
Pune, Maharashtra

### Spicer Higher Secondary School ICSE Standard 10 -Percentage: 93.70%

2019 – 2020  
Pune, Maharashtra

## SKILLS

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**Software:** MATLAB, AutoCAD, Simulink, LTSpice

**Programming Languages and Libraries:** Python- Numpy, Matplotlib

## ACHIEVEMENTS

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**GATE 2025**  
**AIR 4672, GATE Score 452**

2025

**Indian Control Conference Student Support**  
**Received financial support to attend Indian Control Conference 10.**

2024

**IOQM Awardee**  
**Cleared Indian National Mathematics Olympiad, Stage I**

2021

## CONFERENCES

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**Indian Control Conference 10**  
**Attended ICC 10 held at IISER Bhopal**

Dec 2024  
Bhopal, India

## COURSEWORK

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### **Electronics and Communication:**

Linear Control Systems, Control Systems, Intelligent Robotics, Robotic perception, Computer organization, Digital Circuits and Systems, Analog Circuits, Electronic Devices, Principles of Communications, Signals and Systems, Basic Electronics, Electromagnetic Theory,

### **Mathematics and Computer Science:**

Optimization Techniques, Machine Learning, Data Structures and Algorithms, Probability and Statistics, Complex Variables, Multivariable Calculus, Discrete Mathematics

## POSITIONS OF RESPONSIBILITY

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### **Team Lead: Quiz Club, IISER Bhopal**

Jun 2023 – Apr 2025

Organized and managed multiple quizzes, hosted multiple quizzes as a quizmaster. Coordinated with teams to plan events, ensuring smooth execution.

### **Volunteer: Indian Control Conference 10**

Dec 2024

Facilitated the food and accommodation arrangements to enhance the experience for participants of the 10th Indian Control Conference at IISER Bhopal.