Manish Kumawat

B.Tech - Space Science and Engineering | **IIT Indore**
sse240021010@iiti.ac.in | manishkumawat14134@gmail.com | +91 8306587898
Github | LinkedIn

Education

Degree	Institute	CGPA/%	Year
B.Tech	Indian Institute of Technology (IIT), Indore	**7.56**	2024 – Present
Class XII	RBSE Board (Prince Eduhub)	92.4%	2023
Class X	RBSE Board (ABPS)	96.0%	2021

Technical Skills

- **Languages:** Python, C/C++, JavaScript (ES6+)(Beginner), HTML5, CSS3
- **Libraries/Frameworks:** Three.js (Basic), NumPy, Pandas, Matplotlib, Seaborn
- **Developer Tools:** Git/GitHub, VS Code, Vercel, Power BI, Google Colab
- **Hardware:** EasyEDA, Arduino IDE, Fusion 360

Projects

OurSolarView – 3D Solar System Visualization *Sep 2025 – Oct 2025*
JavaScript, Three.js, WebGL **Live Demo →**

- Engineered an immersive 3D web application using **Three.js** to render the Solar System with high-fidelity textures, smooth zoom, rotation, and exploration.
- Implemented complex orbital mechanics algorithms to accurately simulate planetary rotation speeds and relative distances.
- Optimized rendering performance and developed a responsive UI for seamless exploration on devices.

Orbital Trajectory Simulation *Oct 2025*
Python, JavaScript **Simulation Link →**

- Developed a physics-based simulation illustrating **Kepler's Laws** using dynamic vector rendering.
- Integrated real-time parameter controls, allowing users to manipulate eccentricity and semi-major axis variables.
- Visualized gravitational effects and velocity vectors to serve as an interactive educational tool.

CanSat (Satellite Prototype) *Aug 2025*
Electronics, Python, Telemetry **Drive →**

- Developed a custom desktop **GUI Dashboard** to visualize live telemetry data received from the satellite.
- Implemented serial communication algorithms to parse raw incoming strings (Altitude, Pressure, Temperature, Humidity) from the receiver.
- Designed real-time dynamic plotting using Python libraries to monitor descent stability and mission status.

Positions of Responsibility

Software Team Member *Astronomy Club, IIT Indore Present*

- Built a CanSat (miniature satellite) prototype capable of transmitting telemetry data as part of a 7-member team.
- Participated in **Nakshatra**, the annual astronomy fest, showcasing technical projects and competing in various events.

Volunteer *Wildlife Club / CFA, IIT Indore 2024 – Present*

- Assisted in planning and executing campus-wide awareness campaigns and events.

Scholastic Achievements

JEE Advanced 2024: Secured a rank in the top **8%** among 180,000+ candidates nationwide.

JEE Mains 2024: Achieved a rank in the top **3%** among 1.2 Million candidates.

Relevant Coursework

- **Mathematics & Computing:** Linear Algebra, Calculus, Differential Equations.
- **Core Engineering:** Electronic Devices & Circuits, Engineering Physics.