

# Yash Kulkarni

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## EDUCATION

### Chh. Shahu College of Engineering

*B.Tech. Mechanical Engineering — CGPA: 7.65 (First Year)*

Aurangabad, MH

*2023 – Present*

## TECHNICAL SKILLS

**Languages:** C++, Python, JavaScript, Solidity

**Frameworks & Tools:** Node.js, Express.js, Flask, Vite, Three.js, HTML, CSS

**Databases:** MongoDB, MongoDB Atlas

**Developer Skills:** RESTful API Development, Database Design, Blockchain Integration, Problem Solving, Object-Oriented Programming

## PROJECTS

### Intelligent Pesticide Sprinkling System Determined by Infection Level of a Plant | *Node.js, Express.js, MongoDB Atlas*

- Engineered a smart pesticide automation system that detects plant diseases using AI (YOLOv5 + OpenCV) and controls IoT sprayers via ESP32.
- Implemented a custom blockchain ledger in Node.js backend to record spray events securely, ensuring transparency and traceability.
- Developed REST APIs for a farmer dashboard displaying AI detection results, spray history, and reward tokens.
- Deployed MongoDB Atlas for storing user, plant, and event data with real-time decision-making and optimized pesticide usage.

### MechOptimizer — Web-based Mechanical Design Optimization Tool | *Node.js, Flask, MongoDB, Three.js*

- Developed an interactive interface with real-time 3D STL visualization using Three.js, enabling CAD file uploads and parameter inputs.
- Integrated Flask backend with Node.js APIs for design optimization and MongoDB storage.
- Designed schema architecture for project and user management; configured Vite for optimized local builds.

### Portfolio Website | *HTML, CSS, JavaScript*

- Developed a responsive personal portfolio to showcase projects and technical achievements.

### Line Follower Robot | *Arduino, Embedded C*

- Built and programmed an autonomous robot using IR sensors for accurate path tracking.

## ACHIEVEMENTS

First-year Mechanical Engineering Topper.

2-star coder on CodeChef and GeeksforGeeks.

Semi-finalist, Agastya Anveshana Innovation Challenge.

Participant, Smart India Hackathon (College Level).

## CERTIFICATIONS

Soft Skill Development — NPTEL

Manufacturing Process — NPTEL

Database Management System — NPTEL

TATA Data Visualisation — Forage Virtual Internship

J.P. Morgan Software Engineering — Forage Virtual Internship

## LEADERSHIP AND ACTIVITIES

Vice President and Founding Member, Robotics Club — Organized workshops and mentored robotics teams.