

Yash Kulkarni

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EDUCATION

Chh. Shahu College of Engineering

Bachelor of Technology in Mechanical Engineering; CGPA: 7.65

Aurangabad, Maharashtra

Aug 2023 – May 2027

TECHNICAL SKILLS

Languages: C++, Python, JavaScript, Java

Frontend: React.js, HTML5, CSS3, Vite, Three.js

Backend: Node.js, Express.js, Flask, RESTful APIs

Databases: MongoDB, MongoDB Atlas

Tools & Technologies: Git, GitHub, Vercel, ESP32, IoT Integration

Core CS: Data Structures & Algorithms, Object-Oriented Programming, Database Management Systems

AI/ML: YOLOv5, OpenCV, Computer Vision

PROJECTS

Intelligent Pesticide Sprinkling System

Node.js, MongoDB, YOLOv5, OpenCV, ESP32

- Engineered full-stack IoT system for automated plant disease detection achieving 85%+ accuracy using YOLOv5 and OpenCV for real-time image processing.
- Developed scalable REST APIs with Node.js and Express.js for event logging, user authentication, and real-time analytics dashboard serving 100+ concurrent users.
- Integrated ESP32-CAM microcontroller for autonomous image capture and automated pesticide dispensing based on ML model predictions.
- Implemented blockchain-inspired immutable ledger system to ensure tamper-proof audit trail of all spray activities and system events.

MechOptimizer — Design Optimization Platform

Node.js, Flask, MongoDB, Three.js

- Built web-based engineering platform enabling 3D CAD file (STL) visualization and topology optimization workflows for mechanical components.
- Architected RESTful backend services using Node.js and Flask microservices to handle file uploads, process optimization requests, and persist results in MongoDB.
- Implemented Three.js-based 3D rendering engine for interactive STL model visualization with pan, zoom, and rotation controls.
- Applied modular MVC architecture ensuring separation of concerns, code reusability, and scalability for future feature additions.

React Portfolio Website | [GitHub](#)

React.js, Vite, Vercel

- Developed high-performance responsive portfolio website using React.js and Vite achieving 95+ Lighthouse performance score.
- Implemented component-based architecture with reusable UI components and React Hooks for state management.
- Optimized build configuration and lazy loading strategies reducing initial bundle size by 40% and improving load time to under 2 seconds.

ACHIEVEMENTS & LEADERSHIP

MumbaiHacks 2025: Finalist among 500+ teams nationwide for innovative AI-driven agricultural solution.

Academic Excellence: First-year and Second-year Mechanical Engineering Topper with consistent 7.6+ CGPA.

Competitive Programming: 2-Star Coder on CodeChef and GeeksforGeeks; solved 150+ DSA problems on LeetCode.

Robotics Club: Vice President and Founding Member; conducted 10+ technical workshops on robotics, Arduino, and software integration for 200+ students.

Hackathons: Semi-finalist at Agastya Anveshana Innovation Challenge; Participant at Smart India Hackathon (College Level).

CERTIFICATIONS

NPTEL: Programming in Java, Database Management Systems, Soft Skills Development

Forage: TATA Data Visualisation Virtual Internship, J.P. Morgan Software Engineering Virtual Internship