Mugdha Chavan

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EDUCATION

- **Bachelor of Technology in Computer Science and Engineering (AI/ML)** — *2023 - 2026*
  KIT's College of Engineering, Kolhapur (Autonomous) — CGPA: 8.86
- **Diploma in Computer Engineering** — *2020 - 2023*
  Dr. D.Y. Patil Polytechnic, Kolhapur — Percentage: 87.09
- **Secondary School Certificate (SSC)** — *2020*
  Maharashtra High School and Junior High School, Kolhapur — Percentage: 92.20

EXPERIENCE

- **Qualitas Techno Solutions** — *2022*
  Intern — Kolhapur
  - Authored a technical report on 51+ emerging IoT technologies, influencing the company's choice of two new prototyping platforms.
  - Improved prototype functionality by 20% through resolving hardware-software integration issues

PROJECTS

- **Smart City Solutions: Automatic Garbage Tracking System**
  An IoT-based automated system
  - Built end-to-end IoT system using Arduino and GPS to reduce operational costs and fuel consumption through route optimization.

- **Surveillance: Real-Time Insight System**
  Object detection project
  - Cut manual monitoring needs by 60% by developing a Python surveillance system with real-time SMS alerts and activity logs.
  - Achieved a 95% accuracy rate in person detection and tracking by optimizing a high-fidelity, real-time algorithm.

- **Real-Time Signal Adaption for Multi-Directional Heavy Traffic**
  An object detection project
  - Designed a highly scalable system prepared for citywide deployment and integration with existing smart city infrastructure.

- **HappyScore AI**
  Predicting national happiness using AI
  - Processed the World Happiness Report dataset containing socio-economic indicators across 150+ countries.
  - Interactive data visualizations built using Matplotlib and Seaborn, uncovering key correlations between GDP, social support, and happiness.
  - Reduced manual analysis time by 40% by providing data-driven insights to classify countries by well-being

- **JanPath – Winning Elections with Precision Analytics**
  Data Engineering, Analytics, Backend and API
  - Developed JanPath, a precision analytics–based Election Management System with real-time data pipelines, predictive insights, and AI-powered automation. Provided scalable full-stack solution that is data-driven and performance-optimized.
  - Role-based dashboards and an intelligent chatbot to assist campaign decision-making.

Skills

- **Programming Languages -** C, C++, Java, Python

- **AI/ML and Data Science** - YOLOv8, CNN ,TensorFlow, OpenCV, Pandas, NumPy, Matplotlib, Scikit-learn

- **Web Development and Databases -** HTML, CSS, JavaScript, Flask, PostgreSQL, MySql

- **IoT/Embedded -** Arduino, Hardware-software integration

- **Generative AI -** Transformers, Prompt Engineering, Fine-tuning , GANs, Synthetic Data Generation

- **Other Tools-** Tableau, PowerBI

Achievements and Awards

- **Finalist -** SHODH-2022 at JSPM, Pune | National Level Project Competition   *2022*
- **Winner -** Project Based Learning Competition   *2024*
- **Runner-up -** Project presentation competition.   *2024*

Certifications

- **Google (AI/ML) -** Completed a Google-certified course covering the principles of machine learning, model construction, assessment, and real-world AI applications.

- **MotionCut (Java Frontend) -** Demonstrated practical experience in Java-based frontend development and UI implementation.

- **1Stop (Java Full Stack) -** Demonstrated hands-on skills in building full-stack applications using Java with integrated frontend, backend, and databases.

Publications

- **2024 IEEE International Conference -** DOI: 10.1109/DISCOVER62353.2024.10750569   *2024*
- **2025 IEEE International Conference -** DOI: 10.1109/ASIANCON66527.2025.11281274   *2025*