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*
- **ICRIC 2024, Volume 1 (Springer) -** DOI: https://doi.org/10.1007/978-981-96-5969-$2_2$1 *2025*