

Mukta Mahesh Vedpathak

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EDUCATION

Course	College / University	Year	CGPA / %
B.Tech.(CSE)	Indian Institute of Technology, Dharwad	2022-Present	8.38
Class XII (HSC)	AEMS, Baramati, Maharashtra	2020-2022	90
Class X (CBSE)	VPEMS, Baramati, Maharashtra	2007-2020	98

EXPERIENCE

- **Intern | Acharya Academy Pvt. Ltd. (Project) [App Development]** December 2024
 - Real-world Product Development: Outing Request Management System for Hostels
 - Developed a Flutter app with a Flask backend to streamline outing requests for students, wardens, guards and parents. Integrated Google Sheets API for real-time updates and managing student requests.
- **Intern | IIT Dharwad (Project) Guide: Prof. Rajshekhar V. Bhat [IoT, AI, ML]** June 2024-Nov 2024
 - IoT for precision agriculture (soil moisture sensing device).
 - Developed nRF52840 IoT nodes for soil moisture data collection and ESP32 for cloud communication. Built a Machine Learning chatbot to assist farmers and created a prediction model to forecast next-day soil moisture.
- **Intern | IIIT Dharwad Guide: Prof. Animesh Chaturvedi [AI, ML, NLP]** June 2024-August 2024
 - Natural Language Processing (LLM), Web Scraping
 - Conducted web scraping and data cleaning to extract Sanskrit words from ancient scriptures, translated and transliterated them into other Indian languages, and analyzed their similarities using various algorithms.
- **Intern (Coding Tutor) | CodeKaroYaaro [Python, Communication]** March 2024-April 2024
 - Online International Coding school for kids
 - Taught children aged 6-15 the basics of coding in Python and Scratch.

PROJECTS

- **SAM: Security and Management System (Project)**
 - Successfully designed, developed, and deployed a paperless out-pass solution for IIT Dharwad that streamlines coordination between students, wardens, and guards, leveraging technologies like Flutter, Flask, Python, QR/Barcode scanning, Google Sheets API, and Google Sign-In.
 - Hosted on the institute's local server, the app has replaced manual approval processes, enhancing efficiency, record-keeping, and student safety.
- **Bulk Emailing and Mail Merge (Project)**
 - Designed a scalable and secure solution integrating bulk emailing and mail merge to streamline high-volume, personalized communication. It includes features like batch processing, error tracking, and detailed delivery metrics, personalized email templates, and overcomes limitations like daily sending caps and high costs.
 - Built with technologies like FastAPI, Flask, SMTP, and Bootstrap, the system ensures security, performance, and a user-friendly experience.
- **Panorama Image Stitching (Project)**
 - Implemented a pipeline for creating seamless panoramic images using SIFT for feature detection, FLANN(KNN)-based matching, RANSAC for homography estimation, and two blending techniques (Max Pixel Intensity and Weighted Distance Map). It evaluates and compares stitching outcomes across diverse datasets.
- **Bank Churn Prediction Model (Project)**
 - Developed a bank churn prediction model using feature engineering and machine learning algorithms, including KNN, logistic regression, decision trees, random forest, SVC, and neural networks.
 - Utilized Python libraries such as Pandas, NumPy, TensorFlow, Keras, and Matplotlib to identify the most accurate predictive model, enhancing customer retention strategies.
- **Face Detection App (Project)**
 - Created a Face Detection app using Flutter for the frontend and Python Flask for the backend. The app uses OpenCV for real-time face recognition and detection.

- **Bidding Website: Timeless Treasures** ([Project](#))
 - Vintage product bidding platform. Flutter-based front-end and a Flask-based back-end, integrated with Google Sheets data management.
- **Text to Speech Converter** ([Project](#))
 - Developed a text-to-speech converter using the pyttsx3 library, enabling offline conversion of text into natural-sounding speech with adjustable voice and speech rate.
- **Pipelined Processor** ([Project](#))
 - Made a simulator to support a pipelined core model with RW,MA,EX,OF and IF stages.
 - Implemented data and control interlocks to manage hazards.
- **Virtual Memory Manager Simulator** ([Project](#))
 - Developed a VMM Simulator in C++ to handle different page sizes, memory frames and track page faults. Implemented 4 page replacement policies: Optimal, FIFO, LRU, Random and 2 allocation policies: Global and Local.
- **Parallel Processing using Threads, Pipes and Semaphores** ([Project](#))
 - Implemented multi-process communication with pipes and shared memory.
 - Synchronized stages S1,S2,S3 of image processing across 3 cores.

SKILLS

- **Programming Languages:** C++, C, Python, Dart
- **Frameworks and Libraries:** Pandas, NumPy, PyTorch, Tensorflow, Keras, Matplotlib, Flask, Bootstrap, Flutter
- **Web Technologies:** HTML, CSS
- **Databases, Scripting and Tools:** SQL, MongoDB, L^AT_EX, Beamer, Git, Bash, Wireshark

COURSES UNDERTAKEN

Data Structures and Algorithms, Design and Analysis of Algorithms, Discrete Structures, Software Systems Lab, Computer Architecture, Artificial Intelligence, Automata Theory, Deep Learning, Operating Systems, Data Bases and Information Systems, Computer Networks, Compilers, Computer Vision.

OTHER ACTIVITIES

- Best Girl Student 2024 at IIT Dharwad.
- Anchor at grand events like the visit of the Hon'ble Vice President of India to IIT Dharwad.
- Member of Academic Senate (UGAPEC) at IIT Dharwad.
- An active member of Dance, Literary, Dramatics, Fine Arts and Journalism club.
- An ex-member of the editorial board of the official quarterly magazine of IIT Dharwad:"Sambandh".