AMBIKA DAS

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EDUCATION

Bachelor's Degree, Computer Science
Maulana Abul Kalam Azad University of Technology, WB, India *CGPA: 8.41/ 10.00*

- Ranked among the top 10 students in the batch.
- Worked as Field Secretary of the Techno Core Committee, organizing cultural and technical events.
- Founded and was a member of *Techno Endeavours*, a club to help underprivileged students and poor people.
- Completed two Java Full Stack Web Development projects using React.js, Spring Boot, Servlet, JSP, MySQL, and Oracle 10g.

SKILLS

Programming Languages:	Python3, Java, C Programming, UNIX and Shell Programming
Machine Learning & Deep Learning:	Machine Learning Using Python, Deep Learning with PyTorch, Supervised/Unsupervised Learning, Federated Learning (Model Poisoning, Robust Aggregation), Object Detection, Text to image, AI Storyboard.
Libraries & Frameworks:	PyTorch, Scikit-learn, NumPy, Pandas, Matplotlib, Seaborn, NLP, LangChain Framework, TensoeFlow, Ultralytics YOLO, OpenCV, FAISS, YOLOv9, SAM2, DINOv2, Transformers, Stable Diffusion, Hugging Face, Git & GitHub.
Development Skills:	HTML5, CSS3, Spring Boot, Servlet, MySQL, Oracle 10g
Soft Skills:	Problem Solving, Research, Independent Development, Team Collaboration, Communication

EXPERIENCES

Data Scientist (AI/ML Engineer), *WildChild Studios, Ahmedabad, Gujarat, India* Jan 2025 – June 2025

- Created smart AI tools like **AI Storyboard** and a **Real-Time Product Scanning System**
- Built a system that uses a **camera to scan products** and **updates the cart database** automatically.
- Collected data through **web scraping**, cleaned and processed it using **Pandas** and **NumPy** for training and testing.
- Created visual reports and performance charts using **Matplotlib** and **Seaborn** to understand model results.
- Independently handled the full development lifecycle: research, data collection, model design, evaluation, and deployment.

Deep Learning Research Intern, *Indian Institute of Technology, Patna, Bihar, India* Jan 2025 - Ongoing

- Working on a **Deep Learning project** in **Federated Learning** to build secure systems that remain accurate even when attacked.
- Creating attacks like **Backdoor Attacks**, **Model Poisoning**, and **Krum**, and developing ways to protect against them using methods like **Bucketing-Filtering** and **GAN**.
- Improving my **research**, **coding**, and **problem-solving skills** through hands-on work.

PROJECTS

Real-Time Object Detection and Smart Cart System

- Built a fast object detection and segmentation system using **YOLOv9** and **SAM2**.

- Used **DINOv2** and **FAISS** to find product details like **name**, **brand**, and **price**.
- Created a smart cart system that scans products using a **camera**, and **automatically adds or removes** them from a cart database.
- The system also **saves all product details** in the database when a product is added or removed.
- Tools used: **PyTorch**, **OpenCV**, **FAISS**, **YOLOv9**, **SAM2**, **SQLite**, **CUDA**

AI Storyboard Generator

- Built a tool that turns text into images using Stable Diffusion 3 (SD3 Large), Qwen 2.5, and ControlNet to create visual storyboards.
- Used Qwen 2.5 to write detailed prompts and ControlNet to guide the style and layout of the images.
- Designed a cumulative prompt-building pipeline that dynamically generates detailed scene descriptions using LLMs and feeds them into an image generation loop.
- Tools & Models: PyTorch, HuggingFace Transformers, SD3 Large, Qwen 2.5, ControlNet, Diffusers

Federated Learning Model in Attacks and Byzantine-Robust Aggregators Jan 2025 – Apr 2025

- Working on a **Federated Learning project** during my internship at **IIT Patna**, to build models that stay reliable even if attacked.
- Testing different types of attacks like **Backdoor**, **Model Poisoning**, and **Krum**.
- Developing ways to protect the model using methods like **Bucketing-Filtering** and **GAN**.

Project Link - https://github.com/ambikad04/Secure-Robust-Federated-Learning

Heart Disease Prediction Using Machine Learning

Jul 2024 – Aug 2024

- Trained models like **Logistic Regression, SVM, KNN, Random Forest, XGBoost** to predict heart disease.
- Engineered features like **BMI**, handled missing data, and optimized model performance.

Project Link - https://github.com/ambikad04/Heart-Disease-Prediction

Crop Prediction using Machine Learning Aug 2023 – Sep 2023

- Built a **crop prediction system** using **2000 data points** and cleaned the data with **Pandas**.
- Applied **Logistic Regression** to predict crop outcomes based on the cleaned data.
- Used **Matplotlib** for visual reports and **heatmaps** to identify patterns and correlations in the data.

Project Link - https://github.com/ambikad04/Machine-Learning-Python-Crop-Prediction-project

CERTIFICATES

Google Data Analytics, *Coursera*

- Learned the basics of **data analytics** and gained practical experience in **organizing**, **analyzing**, and **presenting data**. | **View Certificate**

Introduction To Data Science, *Cisco*

- Learned the basics of **data science**, including data analysis and interpretation techniques.
  View Certificate

RESEARCH PAPER

Empowering Agricultural Sustainability: Integrating Nanosensors and Machine Learning for Informed Crop Management in India (About to Publish)

Publisher: APPLE ACADEMIC PRESS

- This research paper shows how **nanosensors** and **machine learning algorithms** like **Logistic Regression** can help improve crop predictions and farming practices.

Link: https://www.appleacademicpress.com/nanotechnology-and-beyond-the-synergy-of-materials- and-artificial-intelligence-/9781779643025