

AMBIKA DAS

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EDUCATION

Bachelor of Computer Application

Sep 2021 – July 2024

Techno India Institute of Technology, Kolkata, India

CGPA: 8.41/10.00

- Ranked among the top 10 students in the batch.
- Worked as Field Secretary of the TIIT 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, TensorFlow, 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
<ul style="list-style-type: none">Created smart AI tools like AI Storyboard and a Real-Time Product Scanning SystemBuilt 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 Intern, Indian Institute of Technology, Patna, Bihar, India	Jan 2025 - Ongoing
<ul style="list-style-type: none">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>