Manab Tikadar

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Education

Indian Institute of Technology (Indian School of Mines), Dhanbad Expected May 2027
Bachelor of Technology in Electronics and Communication Engineering(GPA: 8.99 / 10.00) *Dhanbad, Jharkhand*

- **Relevant Coursework:** Data Structures and Algorithms (C++), Prob & Stat, Linear Algebra,Neural Networks and DeepLearning,Convolutional Neural Networks,Digital Circuit And System Design, Signals and Network

Experience

Robotics and AI Club Jan 2024 – Present
Member *Dhanbad, Jharkhand*

- Developed robotics skills including inverse kinematics, computer vision, and microcontroller programming.

Drone Workshop Oct 2024
Attended *Dhanbad, Jharkhand*

- Made a drone from a kit provided by them while learning about Pid Control, GPS navigation and used Mission Planner software.

Projects

Extracting Text Data from Documents | *Python, Flask, Machine Learning, Document Analysis* GitHub Repository

- Deployed a document analysis web app with machine learning integration.

Generative AI for Dialogue Summarization | *Python, LangChain, Prompt Engineering, LLMs* GitHub Repository

- Developed an LLM-based AI system using LangChain for efficient summarization

Breast Cancer Diagnosis | *Python, Scikit-learn, Machine Learning, Data Analysis* GitHub Repository

- Built a machine learning model from scratch to diagnose breast cancer using Random Forest and other algorithms.

Brain Tumor Detection | *Python, OpenCV, TensorFlow, Deep Learning, U-Net* GitHub Repository

- Implemented an image segmentation model from scratch using the U-Net architecture for precise pixel-level segmentation.

ROS2-Based Robotics Project | *ROS2, Gazebo, MoveIt 2, Rviz, Python, C++*

- Developed a ROS2-based autonomous robot navigation system with dynamic path planning, obstacle avoidance, and robotic arm manipulation.

Technical Skills

Languages: C, C++, Python, Matlab, VHDL
Technologies: ROS2, Gazebo, MoveIt 2, Rviz, Vivado, Xilinx FPGA, Scikit-learn, TensorFlow, Pandas, NumPy, OpenCV, Flask, LangChain, Linux, Git, Arduino
Hardware: 555 Timer IC, Digital Gate ICs, 7-Segment Displays, Crystal Oscillators, Sensors
Concepts: Machine Learning, Neural Networks, Supervised and Unsupervised Learning, Data Structures and Algorithms, Digital Logic Design, Sequential and Combinational Circuits, Signal Processing

Achievements

- Participated in the eYantra Robotics Competition (2024) as part of a team working on a logistics cobot project.

Social Engagements

Club Member : at ROBOISM - Robotronics Club of IIT Dhanbad