Debjit Das

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Profile Summary

Recent **Information Technology graduate** with a strong foundation in **Computer Vision**, **Deep Learning**, and **Artificial Intelligence**. Skilled in **Python**, **YOLO**, and related AI frameworks, along with experience in **HTML**, **CSS**, and **JavaScript** for building web-based applications. Passionate about applying AI techniques to solve real-world problems, with interests spanning **Computer Vision**, **Natural Language Processing**, **Generative AI**, and **Model Optimization**. Motivated to learn, innovate, and contribute to cutting-edge projects in the fields of **Artificial Intelligence** and **Web Development**.

Projects

- **Automatic Number Plate Recognition (ANPR) System:** Designed an AI-based solution for license plate detection and recognition using **YOLOv8** for detection and **PaddleOCR** for text extraction. Integrated **OpenCV** for frame processing and employed **Pandas** and **NumPy** for structured analysis.
  [**Technologies:** YOLOv8, EasyOCR, OpenCV, Pandas, NumPy, Python]
- **Football Analytics:** Developed a video analytics pipeline for football match analysis. Applied **YOLOv8** for detection of players and ball, with **K-Means** clustering for jersey color segmentation. Used **Optical Flow** for camera movement analysis and **OpenCV** for perspective transformation to estimate player motion statistics.
  [**Technologies:** Python, YOLOv8, OpenCV, Scikit, K-Means, Optical Flow]
- **Waste-to-Recycle:** Built an AI system that identifies waste materials and generates creative reuse suggestions. Utilized **Salesforce BLIP** for image captioning and prompt-based generation with **GPT-Neo** to create recycling ideas.
  [**Technologies:** Generative AI, Prompt Engineering, GPT-Neo, Salesforce BLIP, Python]
- **Research Publications:**
  - Time-Dependent Eikonal Solution Using Physics-Informed Neural Networks
  - Physics-Informed Neural Networks (PINNs) for Burgers' Equation
  - Solution of Allen–Cahn Equation Using Physics-Informed Neural Networks
  - IoT-based Covid-19 Detection and Patient Monitoring in Remote Regions using UAV

Skills

- **Languages**: Java, Python, C, SQL
- **Libraries**: NumPy, Pandas, Scikit-Learn, OpenCV, TensorFlow, YOLO
- **Databases**: MySQL
- **Tools**: Git, VS Code, MS Office

Education

- **Meghnad Saha Institute of Technology (MSIT)** — Kolkata, WB, India
  Bachelor of Technology (Information Technology); CGPA: 8.45 — *2021 - 2025*
- **St. Augustine's Day School** — Kolkata, WB, India
  ISC - Science + Computer; Percentage: 86.83% — *Jan 2019 - March 2020*
- **St. Augustine's Day School** — Kolkata, WB, India
  ICSE - Science; Percentage: 80% — *Jan 2017 - March 2018*