

Debjit Das

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PROFESSIONAL SUMMARY

AI Engineer specializing in Computer Vision and deep learning, with experience in building AI-powered applications. Skilled in designing systems that leverage advanced neural networks and AI techniques. Proficient in Python, YOLO, and related frameworks, with a passion for applying AI to real-world challenges. Background includes work on projects involving natural language processing, generative AI, and model optimization.

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, Bash
- **Libraries:** NumPy, Pandas, Scikit-Learn, OpenCV, TensorFlow, YOLO
- **Databases:** MySQL, Firebase
- **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