Manas Kumar Thakur

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Education & Achievements

Bachelor of Technology in Computer Science (AIML) **Expected Graduation: 2027**

Dronacharya College of Engineering *CGPA: 7.5/10*

Experience

Backend Developer Intern **Feb. 2025 – May 2025**

OSS & Consulting *Remote, India*

- Designed a PostgreSQL database for a CRM platform, improving data consistency and enabling efficient client management workflows.
- Collaborated on end-to-end application design, aligning backend logic with CRM features to streamline user experience.
- Deployed and maintained backend infrastructure on a local bare-metal cloud, supporting early-stage product rollout.
- Managed cloud servers and led the backend migration from on-premise to GCP VM instances, enhancing scalability and reducing latency by 30%.

Technical Projects

SIH 2023 - Lithology Project | YOLOv8, Computer Vision, Python **December 2023**

- Developed an intelligent system for real-time object detection and classification using machine learning and computer vision.
- Scraped and annotated a custom lithology image dataset, ensuring high-quality training data for model performance.
- Split dataset in a 70:20:10 ratio for training, validation, and testing, enabling robust evaluation of model accuracy.
- Fine-tuned a YOLOv8 model on the curated dataset, achieving 99.97% accuracy and 99.83% precision on the test set.

Buildspace - Pothole Detection and GPS Tagging | YOLO, OpenCV, GPS API, Python **August 2024**

- Developed a real-time pothole detection system using YOLO and OpenCV to identify road defects.
- Integrated GPS tagging to map detected potholes, providing precise location data for road maintenance teams.
- Optimized the system for deployment in smart city infrastructure to improve road safety.

IDE 2024 - ML for Construction Progress Monitoring | Deep Learning, OpenCV, Python **September 2024**

- Built a real-time ML-powered system for tracking construction progress through automated image analysis.
- Implemented an anomaly detection module to flag inconsistencies and prevent reporting errors.
- Enhanced efficiency by reducing reliance on manual progress tracking and improving data accuracy.

Technical Skills

Programming Languages: Python, R, SQL, C, C++

Machine Learning & AI: Supervised/Unsupervised Learning, Deep Learning, Transfer Learning, Computer Vision, Object Detection, NLP, Reinforcement Learning

Frameworks & Libraries: PyTorch, TensorFlow, Scikit-learn, FastAI, OpenCV, YOLOv8, Hugging Face, LangChain, SentenceTransformers, OpenAI API

Model Architectures: CNNs, RNNs, LSTMs, Transformers, U-Net, DINO, CLIP

Data Science & Visualization: Pandas, NumPy, Matplotlib, Seaborn, Plotly, Streamlit, Jupyter Notebook

MLOps & Tools: Weights & Biases, MLflow, Docker, Git, CUDA, NVIDIA Jetson, CI/CD

Databases & Vector Stores: PostgreSQL, MongoDB, Redis, LanceDB, Pinecone

Leadership & Achievements

Smart India Hackathon Winner: SIH 2023 Winner, Automated lithology classification using AI and deep learning.

Engineers Day Idea Competition (DCE): Secured second place for designing a fire-resistant system for car accidents.

IDE Bootcamp Selection: Advanced to Phase 2 at Amity University Rajasthan, collaborating on innovations.

AI Team - Deviators Club: Worked on AI/ML projects, gaining hands-on experience in advanced technologies.