

MANAS KUMAR THAKUR

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Education & Achievements

Bachelor of Technology in Computer Science(AIML)

Dronacharya College of Engineering

Expected Graduation: 2027

CGPA: 7.5/10

Experience

Backend Developer Intern

OSS & Consulting

Feb. 2025 – May 2025

Remote, India

- Designed and optimized relational database architecture to ensure scalability and efficiency.
- Developed and managed database schemas using PostgreSQL, enforcing best practices in normalization and indexing.
- Implemented query optimization techniques, reducing query execution time and improving system performance.
- Designed and developed RESTful APIs for seamless database interactions, ensuring secure and efficient data handling.
- Integrated secure authentication mechanisms, including JWT tokens and OAuth, ensuring data protection.
- Collaborated with backend and cloud teams to streamline data flow across distributed systems using AWS and GCP.

Technical Projects

SIH 2023 - Lithology Project | Machine Learning, Computer Vision

December 2023

- Developed an intelligent system for real-time object detection and classification using machine learning and computer vision.
- Utilized a multi-language approach, with the primary codebase in JavaScript, alongside HTML, Python, CSS, Java, Jupyter Notebook, and C++.
- Implemented advanced detection techniques to enhance accuracy and reliability in object classification.

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

August 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.

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

September 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.

Building Thoughts - AI-Powered Diary | Ongoing

- Developing an AI-powered diary that interacts with users, responding intelligently to their entries.

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.