

Siddharth Mishra

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EDUCATION

- Indian Institute of Technology (Indian School of Mines) Dhanbad** Dhanbad, India
Bachelor of Technology - Electrical Engineering; CGPA: 8.68 December 2021 - May 2025
Relevant Courses: Deep Learning, Machine Learning, Principle of Artificial Intelligence, Probability and Statistics, Stochastic Methods in Data Science, Building Software Systems, Data Structures & Algorithms

SKILLS SUMMARY

- Languages:** Python, C++, C, SQL
- Frameworks:** PyTorch, NumPy, TensorFlow, Flask, FastAPI, PySpark
- Tools:** GIT, Docker, PostgreSQL, Pandas, scikit-learn, MySQL, DVC, MLFlow
- Platforms:** Linux, Windows, AWS - ([certificate](#))

EXPERIENCE

- Deepmatrix Private Limited** On-site
Data Scientist June 2025 - Present
 - Power-line & Cell Tower Defect Detection:** Built a scalable YOLO11/YOLO26 oriented bounding box detection pipeline using the Strategy Design Pattern, achieving 90%+ F1 for defect detection in power-line and telecom components.
 - Point Cloud Segmentation:** Developed end-to-end (LiDAR, Photogrammetry) semantic segmentation pipelines with optimized voxel sampling (FPS, Morton code) and trained custom PointNet-EdgeConv based model and also RandLA-Net & Point Transformer V3 models, achieving up to 89% mIoU on large-scale infrastructure datasets.
 - Training Dataset QA/QC Automation:** Automated QA/QC for object detection datasets, significantly improving annotation quality and reducing manual validation effort in training workflows.
 - Few-Shot Geospatial Object Detection:** Built a INSID3 & DINOv3-based few-shot detection system for satellite, orthomosaic, and SAR imagery, reducing power-line route planning effort by 99%.
 - LLM-Based Data Structuring Agent:** Developed an LLM-powered data extraction agent that converts unstructured text into structured tables, reducing processing time from 2 weeks to 1 hour.
- Deepmatrix Private Limited** On-site
AI/ML Developer (Internship) May 2024 - July 2024
 - Segmentation On Orthomosaic Data:** Completed image labeling and trained the images using the YOLOv8 model for a segmentation task. Performed hyperparameter tuning and applied various data augmentations.
 - Query Performing And Function Calling ChatBot In GIS ToolBox:** Built GPT-4o API chatbot for company queries and GIS automation with complete end-to-end pipeline.
 - Integrating PySpark In GIS Functions:** Integrated PySpark into several GIS functions to enhance their performance by Distributed Computing.
 - GCP Center Detection In Orthomosaic Data:** Created two-stage YOLOv5 pipeline for automated GCP detection and localization in orthomosaics data with multithreaded optimization for production use.

RESEARCH PUBLICATIONS

- Real-Time State-Of-Charge Estimation for Electric Vehicle Batteries Using Driving Pattern Synchronized Neural Networks - [link](#) - *IEEE DECoN* - (December '25)

HACKATHONS & COMPETITIONS

- Fibe: Hack the Vibe! 2.0 - Text Classification Challenge:** Ranked top 10/3000+ teams by developing fairly lightweight solution (compared to finetuned LLMs) for 670K news articles across 26 categories using transfer learning, SetFit, LoRA/QLoRA, and ensemble methods with limited GPU resources. (October '24)
- Rakumon - Rakathon 2024 - [link](#):** Ranked top 3/6375 teams by building hyper-personalized e-commerce platform using GenAI with custom multimodal vectorDB (by using Pinecone and FAISS) and RAG pipeline, enabling conversational product search through an AI shopkeeper chatbot. (August '24)
- PyTorch Docathon - Open Source Contributions:** Contributed to 31 Python files in PyTorch by reviewing and correcting inaccurate docstrings. (November '23)

PROJECTS

- YOLOv11 from scratch [link](#):** Build YOLOv11 model from scratch. Tech: Python, PyTorch (October '25)
- miniGPT - [link](#):** Implemented decoder part of transformer from Attention All You Need, 2017 paper (text generation) in a compact notebook. used the original transformer ideas (decoder-only) to train and sample text. (December '23)

ACHIEVEMENTS

- Second runner-up out of 6,375 teams in Rakathon 2024, a 24-hour coding competition by Rakuten India.
- Received an Honorable Mention in PyTorch Docathon 2023.