

ABHINIT K. SUNDAR

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SUMMARY

AI researcher focused on foundational model development, agentic AI, and high-stakes bioinformatics applications. Skilled in experimenting with large-scale Transformers (LLaMA2, Galactica, GPT), GNNs, and vision-based robotics architectures. Proven ability to run rigorous experiments, analyze multi-objective ML metrics, and publish impactful results. Seeking R&D roles in AI-first labs or biotech innovation teams to develop next-gen intelligent systems.

EDUCATION

New Jersey Institute of Technology, M.S. in Data Science — May 2025

New Jersey Institute of Technology, B.S. in Data Science — May 2024

RESEARCH EXPERIENCE – NEW JERSEY INSTITUTE OF TECHNOLOGY, NEWARK, NJ

LLM-Guided ASO Drug Design | May 2024 – Present

- Engineered inference pipelines for predicting ASO efficacy using Galactica-6.7B, LLaMA2-7B, and GPT-3.5-Turbo.
- Benchmarked zero-shot and few-shot prompting for chemical-modified RNA targets; reduced RMSE by 50%.
- Integrated Hugging Face Transformers, PyTorch, and CUDA optimization for large-scale bio-sequence prediction.

Multitask Graph Learning with Graphormer | Jan 2025 – Present

- Trained GNNs on ASO datasets for multitask regression/classification using Graphormer with task-specific heads.
- Experimented with UNREACHABLE_NODE_DISTANCE tuning to improve signal propagation in sparse molecule graphs.
- Tracked scientific metrics: R^2 , AUROC, RMSE across folds using Scikit-learn and live logging dashboards.

Agentic AI for Robotics + Scene Understanding | Jan 2025 – Present

- Built LangChain + ROSA system enabling LLM-based robotic decisions from battery status and vision input (ReAct).
- Used LLaMA2 + GPT to parse scene descriptions, align to localization via VSLAM, and autonomously plan motion.
- Demonstrated agent robustness in drone maze environments with integrated computer vision pipeline.

Kalman Filter-Based Scene Prediction | Sep 2023 – Dec 2023

- Enhanced tracking via Kalman filters + ResNet50/FasterRCNN bounding box fusion for robust temporal modeling.
- Created IOU-matched masks and anchor boxes, improving object detection generalization across scenes.

OTHER RESEARCH EXPERIENCE

Climate Modeling via CNNs | New Mexico State University | Las Cruces, NM | May 2022 – Jul 2022

- Developed CNN models to predict solar radiation using satellite + atmospheric data sources.
- Benchmarked against SVMs and decision trees; published findings via IEEE/NSF.
- Collaborated with HPC engineers to tune models under faculty supervision (Dr. Cao, Dr. Badawy).

SKILLS

Frameworks: PyTorch, Hugging Face Transformers, LangChain, CUDA, OpenCV

ML Techniques: Zero-shot/Few-shot prompting, Graph Neural Networks, Multitask Learning, ReAct Agents

Programming: Python, R, C++, Java | Tools: Docker, Git, SLURM, ChemBERTa

Domains: LLMs for Drug Discovery, Bioinformatics, Vision Robotics, Agentic AI