Chidaksh Ravuru

+1 (919) 923-5355 | chidaksh@unc.edu | Portfolio | Github | LinkedIn | Google Scholar

EDUCATION

University of North Carolina, Chapel Hill — Chapel Hill, NC
Master of Science in Computer Science — *Aug 2024 - May 2026*

Indian Institute of Technology, Dharwad — Dharwad, India
Bachelor of Technology in Computer Science — *Nov 2020 - Apr 2024*

PUBLICATIONS

Agentic Retrieval-Augmented Generation for Time Series Analysis — Barcelona, Spain
Chidaksh Ravuru*, *Sagar Sakhinana, Venkataramana Runkana* — *KDD*

Reprogramming Foundational LLMs for Spatio-Temporal Applications — Vancouver, Canada
*Sagar Sakhinana, **Chidaksh Ravuru***, Sannidhi Geethan, Venkataramana Runkana* — *AAAI*

EXPERIENCE

Computer Vision Engineering Intern — Delhi, India
Indian Institute of Technology, Delhi — *Jan 2024 - May 2024*

- Deployed advanced transformer-based face recognition models using PyTorch, achieving **85% Top-1** accuracy.
- Benchmarked a test dataset comprising **150+ videos of 50+** subjects with variations in lighting, height, and angle and contributed to research in video-face recognition.

Machine Learning Engineer Intern — Bangalore, India
Tata Research Development and Design Centre — *May 2023 - Aug 2023*

- Developed an **Agentic-RAG** model for time series, achieving a **12% improvement in prediction accuracy** on complex temporal forecasting tasks.
- Enhanced model performance by **18% in anomaly detection** and **15% in pattern recognition** across 400 task-specific benchmarks using finetuned SLMs.

TECHNICAL SKILLS

Languages: Python, C++, C, Java, Bash, HTML, CSS, JavaScript, NodeJS, React, PHP, Django
Python Libraries: NumPy, Pandas, Matplotlib, Seaborn, SciPy, Sklearn, JAX, PyTorch, TensorFlow
Expertise: Large Language Models, Retrieval-Augmented Generation, Deep Learning, Natural Language Processing, Computer Vision, Reinforcement Learning
Software Skills: AWS, Microsoft Azure, MySQL, LaTeX, Git, Docker, PySpark, Hadoop, XGBoost

PROJECTS

Visual Reasoning and Artificial General Intelligence — Report

- Engineered a **transformer** network, increasing model accuracy by **15%** in ARC-AGI visual reasoning tasks.
- Ensured **equivalent performance** to finetuned **Llama-8B**, **Gemma-2B** models with **100x fewer parameters**.

LLM Chatbots for Real-World APIs — Report

- Designed a chatbot using **CoT** prompting, solving **95%** of test cases for tasks requiring complex reasoning.
- Optimized performance to **87.5% accuracy**, surpassing GPT and ReAct, and **cutting** response time by **15 sec**.

3D Brain Tumor Segmentation — Report

- Implemented video architectures, including **3D U-Net**, and **TimeSformer**, **reducing** segmentation error by **7%**.
- Elevated performance to a Dice score of **95.45** for core and **95.65** for enhanced tumors, improving by over **12%**.

Spurious Correlations Mitigator

- Constructed a framework utilizing **LLMs** to mitigate spurious correlations in pre-trained models, enhancing robustness and fairness.
- Created a **spurious classifier, evaluator, and data generator**, reducing biased predictions by **5%**.

ACHIEVEMENTS

- Selected as one of the **top 1%** of applicants countrywide for **Google Research Week**, Bangalore, India
- Secured **4th place** in Inter IIT Techfest 2023 in **Open Domain Question Answering**
- Selected for the **Machine Learning Summer School** (MLSS) 2022 in Krakow, Poland, as one of the few **fully funded** participants.