

Rohith Pallamreddy

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EDUCATION

Georgia Institute of Technology

Bachelor of Science in Computer Science, GPA: 4.00/4.00

Atlanta, GA

May 2027

EXPERIENCE

REMAP Lab

Software Engineer - Machine Learning Researcher

Atlanta, GA

Jan 2025 – Present

- Designing **machine learning pipelines** for large-scale spatiotemporal mobility data to predictively model urban travel behavior
- Implementing and benchmarking **algorithmic trajectory reconstruction** methods (map-matching) as preprocessing for ML models
- Developing **predictive and graph-based learning models** to forecast street-level mobility changes during extreme heat events

No-HEAT (Vertically Integrated Project)

Software Engineer - Microclimate Modeling Researcher

Atlanta, GA

Aug 2025 – Present

- Engineered a **geospatial data processing pipeline** to generate high-resolution microclimate features (buildings, canopy, elevation)
- Integrated **LiDAR-derived features** with physics-based thermal models using Google Earth Engine and SOLWEIG
- Implemented **UTCI** and route-optimization logic, identifying paths that reduce heat exposure by **~12 °C** without increasing distance

Kavi Audio

Software Engineer Intern - Systems and Machine Learning

Atlanta, GA

Aug 2024 – Present

- Developed an **NLP-based recommendation system** using transcript similarity analysis to automate/personalize recommendations
- Migrated local authentication systems to **AWS Cognito** to enhance security, user data encryption, and cloud infrastructure scalability
- Developed "Project Amplify" using **C++** and **Raspberry Pi 4** to convert analog radio waves into digital internet radio streams

System Technology Works

Lead Software Engineer Intern - Machine Learning

Alpharetta, GA

May 2024 – Aug 2024

- Led deployment of **LLMs** on an embedded humanoid robot (Zeus2Q), optimizing **on-device inference pipelines** using Ollama
- Reduced inference latency through **model selection, quantization, and system-level optimizations**

PROJECTS

LADEE Lunar Dust Risk Mapping & Path Optimization

Nov 2025 – Dec 2025

- Built predictive models using NASA's **LADEE dataset** to quantify lunar dust hazards, implementing a danger coefficient (0 – 10)
- Simulated terrain-level dust accumulation and micro-meteoroid impacts with **PyBullet Physics Engine**
- Implemented **graph-based optimization** with a Dijkstra's algorithm, reducing dust risk by **~50%** vs shortest-path routing

Cosmetics Wizard (Full-Stack Ingredient Analyzer)

Sept 2025 – Nov 2025

- Developed an AI/ML system for **cosmetic safety**, leveraging **vector embeddings** to detect hazardous ingredients
- Built a full-stack interface that generates **safety ratings (within 0.3 points)** and identifies the 5 safest/unsafest ingredients

CounterPunch (Full-Stack Computer Vision Defense Analyzer)

May 2025 – Sept 2025

- Built a **computer vision system** using MediaPipe to model defensive boxing movement and predict opponent exploitability
- Designed quantitative metrics including a **Predictability Score**, reducing user vulnerability by **~70%** during training

Motorcycle Simulator Project

Aug 2025 – Dec 2025

- Developed a **motorcycle racing simulator** via Georgia Tech **Create-X** with realistic controls for the gaming industry
- Designed **CAD models** in Fusion 360 and integrated with Arduino-based control system for physical input mapping

CERTIFICATIONS

NVIDIA | AI Infrastructure and Operations Fundamentals

Dec 2025

IBM | GenAI and LLMs: Architecture and Data Preparation

Dec 2025

Microsoft | Generative AI for Data Science

Dec 2025

SKILLS

Programming & Data Science: Python (Pandas, NumPy, SciPy, Matplotlib, Seaborn, Plotly, TensorFlow, PyTorch, Keras, PyBullet, MediaPipe, OpenCV, Vector Embeddings, AI/ML, CV, NLP), C, C++, Java, SQL, R, Julia, MATLAB, Bash/Shell Scripting, Julia, GeoSpatial Data (LiDAR, Raster, Vector, SOLWEIG, UMEP, QGIS, ArcGIS, Google Earth Engine), APIs/REST, Docker, Kubernetes

Mathematics & Statistics: Probability, Hypothesis Testing, Linear Algebra, Multivariable Calculus, Differential Equations, Discrete Math, Graph Theory, Optimization, Numerical Methods, Proofs, Machine Learning Theory, Bayesian Methods, Time Series Analysis

Tools & Platforms: Git/GitHub, GitLab, Jupyter, VS Code, IntelliJ, Linux/Unix, Docker, Kubernetes, AWS, GCP, Azure, Postman

Creative & Design: Drawing (8 yrs), 3D Modeling & Animation (5 yrs), Blender, Maya, Photoshop, Illustrator, CAD, Figma