

Ramaakshay Mallireddy

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OBJECTIVE

Highly motivated Aerospace Engineering student with hands-on experience in machine learning, natural language processing, data science, AI systems, and full-stack development. Seeking AI/ML and product engineering roles where I can apply deep learning, LLM integration, and statistical modeling to address real customer needs, inform business strategy, and ship scalable solutions grounded in human-centered design.

EDUCATION

University of Texas at Austin

B.S. Aerospace Engineering | Minors: Computer Science, Robotics

Austin, TX

Expected Graduation: May 2028

Relevant Coursework:

- Computer Programming (Python, C++)
- AI Design and Development
- Mathematics: Vector Calculus & Linear Algebra
- Machine Learning in Robotics

EXPERIENCE

AI/Software Engineering Intern

May 2026 – Present

IBM Austin, TX

- Designed AI-powered solutions in Agile sprints as part of IBM's Client Engineering team, translating customer needs and user feedback into proof-of-concept deliverables aligned with business strategy and compliance
- Implemented cloud-native workloads (Python, Terraform, Ansible, Docker/Kubernetes) across Red Hat OpenShift, IBM Cloud, and AWS; delivered technical support and handoff documentation to client teams
- Engineered a hybrid STL + Isolation Forest anomaly detection model for time-series pipeline metrics, applying statistical seasonal-trend decomposition to isolate residuals before ML-based scoring to distinguish true anomalies from normal seasonality
- **IBM WorkTrace** — Built with a founder mindset; product managed the full lifecycle from market analysis of intern pain points and human-centered design through production deployment; adopted by interns and managers for time reporting and billability tracking
 - Built a RAG platform with semantic search, NLP-powered meeting summarization, and multi-provider LLM inference (watsonx.ai, Groq, Ollama) via Python, FastAPI, React, and pgvector
 - Engineered an agentic pipeline that parses transcripts, classifies tasks, and routes time entries into PostgreSQL autonomously; integrated with agentic coding tools for in-editor work logging
 - Deployed on an OCP (OpenShift) cluster with Supabase-managed Postgres, environment-driven provider switching, and GitHub CI/CD

Texas Spacecraft Laboratory (Electrical Power Systems)

August 2025 – Present

University of Texas at Austin Austin, TX

- Designed EGSE PCB integrating complex components for spacecraft power system testing and validation
- Selected and tested 15+ power components (batteries, solar panels, converters) ensuring compatibility with spacecraft power requirements
- Ran orbital energy simulations modeling power consumption across mission scenarios, validated against load profiles and bench data

PROJECTS & RESEARCH

IL & RL Blended Recovery Architecture for Robotic Manipulation | PyTorch

January 2026 – May 2026

- Built a dual-policy robotic control framework in PyTorch, combining a behavior cloning (IL) policy with a deep RL recovery policy (actor-critic) to handle out-of-distribution states in dynamic environments.
- Implemented safety-constrained action projection (shielding layer) to bound control inputs and prevent collisions
- Evaluated performance in simulated manipulation tasks, measuring collision rate, recovery latency, and task success under novel obstacle configurations; leveraged natural language processing to parse and summarize experiment results across training runs.

AIAA Aircraft Design | MATLAB, CAD, ANSYS

August 2025 – May 2026

- Selected and integrated 2 high-thrust jet engines to meet thrust requirements, enabling catapult-assisted launch and sustained Mach 1.6 dash performance for the DC25 aircraft
- Modeled and optimized fuel and thermal management systems using MATLAB and ANSYS, validated through simulation to improve avionics thermal performance and overall system endurance
- Refined engine nacelle geometry and intake placement through iterative CFD analysis to improve thrust-to-weight ratio

Stock Tracker | Next.js, TypeScript, TradingView API, React, Tailwind CSS

May 2026 – Present

- Built a real-time stock dashboard in Next.js/TypeScript with TradingView widgets for live charts, market heatmaps, sector-grouped quotes, and financial news, enabling on-demand market analysis
- Iterated on features based on user feedback and customer empathy, adding personalized watchlists, configurable price alerts, per-ticker financials, and a modular React/TypeScript component architecture

TECHNICAL SKILLS

AI/ML Tools: IBM watsonx.ai, Groq, Ollama, pgvector, LangChain, Hugging Face, scikit-learn, OpenAI API, FAISS

Developer Tools: Git, Docker, OpenShift/Kubernetes, Terraform, Ansible, AWS, MATLAB, ANSYS, CAD

Frameworks: React, Next.js, Node.js, Flask, FastAPI, Material-UI, Tailwind CSS

Languages: Python, Java, C/C++, SQL (Postgres), JavaScript, TypeScript, HTML/CSS

Libraries: PyTorch, pandas, NumPy, Matplotlib