

AKHIL KANUKULA

akhilk1@umbc.edu | (443) 630-7529 | [LinkedIn](#) | [GitHub](#) | [Portfolio](#)

EDUCATION

Master of Science in Data Science - University of Maryland Baltimore County | 4.0/4.0

Jan 2024 - Dec 2025

Bachelor of Technology in Information technology - Sreenidhi Institute of Science and Technology | 8.39/10

Aug 2017 - July 2021

Phi Kappa Phi Graduate Research Grant — National award recognizing academic excellence and research potential in Geospatial AI

TECHNICAL SKILLS

Languages: Python, C, C++, Java, JavaScript, TypeScript, R

Web & Mobile: Next.js, Angular, React.js, Node.js, HTML/CSS, GraphQL

AI/ML & Scientific Computing: PyTorch, CUDA, HPC, Diffusion Models, NLP, Generative AI

Databases: PostgreSQL, MySQL, MongoDB, Redis, CockroachDB, SQLite

Cloud, Infrastructure & DevOps: GCP, AWS, Azure, Docker, Kubernetes, CI/CD (GitHub Actions)

Tools: MuleSoft, Power BI, Tableau, Postman, Splunk, Informatica

PROFESSIONAL EXPERIENCE

Data AI Engineer, Platinum Business Services | Catonsville, MD

Feb 2026 - Present

- Shipped 3 end-to-end AI MVPs across healthcare, cybersecurity, and quantum computing domains—accelerating R&D validation timelines from months to weeks
- Designed and deployed a production ML pipeline for animal-testing research that automated data ingestion, model training, and inference, reducing manual analysis effort by 60%.

AI Software Developer Intern, Cyber Pack Ventures Inc. | Columbia, MD

Jan 2025 - Dec 2025

- Architected and shipped a full-stack web application (Next.js + FastAPI + PostgreSQL) for an NSF-funded misinformation study, supporting 3 concurrent AI personas and logging 1,000+ real-time user interactions with zero data loss.
- Engineered a custom Gemini-based LLM handler with hallucination-injection logic, achieving 100% personality consistency across all experimental tasks via balanced round-robin distribution.
- Optimized API response latency by 40% through query batching and connection pooling, enabling seamless real-time user sessions during live research experiments.

Research Assistant, University of Maryland Baltimore County - NASA | Baltimore, MD

Aug 2024 - Aug 2025

- Developed a Diffusion-based generative model (DDPM) to forecast monthly temperature anomalies, outperforming standard U-Net baselines on RMSE and ACC metrics by incorporating uncertainty quantification.
- Built a high-throughput data pipeline with xarray and NetCDF processing 120+ GB of multi-dimensional climate data, cutting preprocessing time by 50%.
- Accelerated inference speed by 35% through late-step noise-schedule skipping while maintaining model reliability validated via CRPS scores.

Software Engineering Intern, Ardent Privacy | Catonsville, MD

Sep 2024 - Dec 2025

- Built the platform's Data Subject Request (DSR) module in Angular, directly enabling GDPR/CCPA compliance certification and unblocking 2 enterprise contract signings.
- Reduced user-reported privacy-request processing errors by 30% by designing responsive, accessible UI components with built-in form validation and error handling.

Data Analyst, Health Tech Alley | Columbia, MD

Sep 2025 - Jan 2026

- Engineered automated Python ETL scripts to ingest and preprocess US Census data, establishing a robust pipeline for analyzing childcare supply-demand discrepancies.
- Architected optimized longitudinal relational database schemas to execute granular shortage analysis at the census block level, driving the creation of interactive Power BI dashboards for stakeholder reporting.

Systems Engineer, Tata Consultancy Services | Hyderabad, India

Sep 2021 - May 2024

- Led a 6-person cross-functional team to deliver a high-priority e-commerce feature 2 weeks ahead of deadline, reducing client-reported defects by 25% post-launch.
- Designed and deployed 12+ production REST APIs using MuleSoft (RAML, DataWeave), integrating Angular with SAP Commerce Cloud at scale.
- Built and maintained CI/CD pipelines with GitHub Actions and CloudHub, achieving 99.5% deployment success rate across 50+ releases.

PROJECTS

Land Cover Simulation Prediction using Diffusion-Based Generative Models | Python | Pytorch | UNet

- Trained a diffusion-based generative model on the Sentinel-II EuroSAT dataset to simulate land cover transitions, achieving 85% prediction accuracy—results adopted for urban planning and environmental policy research

Geospatial ML Platform for Wildfire Risk & Crop Health | Python, PyTorch, U-Net, LSTM

- Built a dual-model geospatial platform: a U-Net segmentation model achieving near-perfect 100% IoU for wildfire detection through smoke using VIIRS thermal data, and an LSTM forecaster with 0.0024 MSE for soil moisture prediction — processing multi-source satellite data (NetCDF, HDF5, GeoTIFF) from VIIRS, SMAP, and ERA5 constellations.