Manas Vellaturi

AI/ML Developer | Computer Science & Statistics, UNC Chapel Hill

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PROFESSIONAL OVERVIEW

CS & Statistics student who builds working AI/ML systems end-to-end — from event-camera research hardware to a live product. Experience spans computer vision, NLP, and full-stack development, with a track record of shipping real software (a hackathon platform, independent research, and a functioning product) and explaining technical concepts clearly to non-expert audiences. Comfortable moving between low-level data/hardware pipelines and high-level application design.

WORK EXPERIENCE

Undergraduate Student Researcher | UNC Department of Computer Science NOV 2025 – PRESENT

- Built and wired precision analog hardware for event-camera research, including a constant-current infrared LED driver circuit (op-amp/MOSFET-based) and photodiode-based optical feedback for closed-loop validation, learning analog circuit design and validation methodology in the process.
- Developed Python tools for programmable LED pulse generation (width, frequency, duty cycle) with synchronized trigger output, plus data pipelines for trigger-window extraction and event-level analysis.
- Built diagnostic visualizations (cumulative event curves, event-rate plots, reconstructed event images) to validate recording quality and system behavior.

Vice President of Company Outreach | UNC IEEE DEC 2025 – PRESENT

- Led corporate outreach and sponsorship strategy, building relationships with industry partners and organizing technical talks and info sessions for UNC's engineering community.

PROJECTS

Janora (janora.dev) – AI Agent Readiness Platform | Creator & Sole Developer

- Independently designed and built a working v1 platform, from architecture to shipped product, that tests whether AI agents are safe to deploy for a given workflow — covering agent manifests, automated test-scenario generation, and manual/transcript/sandbox testing.
- Built the certification and Launch Readiness Report system that turns agent-behavior and action-safety testing into a clear go/no-go decision for companies deploying AI agents.

TextScope – NLP Pipeline & Model Optimization | Python, scikit-learn

- Built an end-to-end NLP pipeline (TF-IDF, embeddings, logistic regression) with cross-validation and L1/L2 tuning; switching from TF-IDF to sentence embeddings raised cross-validated accuracy from 0.50 to 0.96.

C. elegans Connectome as an RL Policy | Python, PyTorch

- Independent research training a biologically-constrained RL agent using the full C. elegans connectome as its policy network for chemotaxis; in development for a conference submission.

EDUCATION

UNC Chapel Hill (Computer Science & Statistics) | Chapel Hill, NC Currently Enrolled
Panther Creek High School | Cary, NC Graduated: 2025

SKILLS

SQL	Python	Java
Full-Stack Development	API Development	Machine Learning
Software Testing	Computer Vision	Artificial Intelligence