

# Praneet Popuri

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## EDUCATION

### University of Wisconsin-Madison

Madison, WI

BS; Computer Science; Classes: Linear Algebra, Machine Learning Theory, Artificial Intelligence, Algorithms, OS  
Aug 2023 – December 2026

## EXPERIENCE

### AI/ML Researcher

September 2025 – Present

University of Wisconsin Madison, Department of Entomology

Madison, WI

- Working in a research group composed of Software Engineers, Entomological field experts, Statisticians, and Hardware Engineers to create a deployable device to **classify insect species**
- Implemented a Computer Vision model trained using a **Self Supervised framework DINO** and backbone architecture ViT, able to classify 10 different species of insects with **93% validation** accuracy. Algorithm deployed to research devices across farms in the United States
- Created a custom python package Bugrunner to automate Machine Learning workflows so any of the **100+ contributors** could easily run, test, and develop

### AI/ML Intern

May 2025 – Aug 2025

BeesBridge LLC

- Using **DataBricks AI/ML** workflows created **RAG-based LLM** that was made using GPT-4 and deployed to internal users, saving employees time and generating efficiency
- Created documentation and pipelines so new and existing users could quickly learn and **master utilization** of the LLM
- High user satisfaction amongst testers and those questioned

## PROJECTS (ALL PROJECTS CAN BE FOUND IN GITHUB)

### AI-Edits | Python, Prompt Engineering, Qwen-VL Models, In-Context Learning, Hugging Face Jan 2026 – Present

- Lead a team of student developers** to create a **novel** prompt-based **Agentic** video editor based on open source **Qwen-VL** on runpod GPU's models designed to reduce redundant and tedious workflows common in content creation, outputting edited videos.
- Prompt engineered** reliable edit decision lists in JSON format, created and implemented **in context** examples for better output reliability, implemented **custom Diarized Audio** and a **Waveform** timeline of audio levels to make up for models lack of audio understanding
- Used an **Orchestrator Agentic** structure to break the task of editing **ultra long 3+ hour videos** into independent parallelizable segments
- Automated common video editing workflows, such as, **rough cuts**, inserting b-roll, and **applying transitions and edits**, reducing editing times by **up to 80 percent** for common video editing tasks

### Recreating Machine Learning Algorithms | Python, Numpy, Scikit-learn, Scipy Winter 2024 – Spring 2025

- Recreated Fundamental Machine Learning Algorithms, Such as Mini-Batch **Stochastic Gradient Descent**, Adaptive Moment Estimation (**Adam**), Nesterov accelerated momentum, multiple Cross-Entropy Loss, Binary Cross-Entropy Loss, and many more.
- I made these algorithms by reading the **text-book Understanding Deep Learning** by Simon J.D Prince and other Machine/Deep learning resources such as, Andrew Ng's coursera courses.

### Mirror | React Native, MongoDB, Clerk, Expo

Jan 2024 – May 2024

- Developed a **full-stack mobile application** where users could take pictures of their clothes which then was displayed onto a closet from where users could show these clothes to friends
- I used remove.bg's API to remove backgrounds of clothes which would then appear in the users closet and then **store them as images using MongoDB**
- Finally I used MongoDB to have a collection of users and manage friendships within users

## TECHNICAL SKILLS

**Languages:** Python, Java, C#, JavaScript, C

**Frameworks:** Pytorch, Numpy, SkictLearn, Tensor Flow, JAX, React

**Developer Tools:** Git, Google Cloud Platform, VS Code, RunPod