SANA CHAWLA

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY **Expected Dec 2025**
Master of Engineering, Computer Science

Cornell University, College of Engineering, Ithaca, NY **Expected May 2025**
Bachelor of Science, Computer Science, (Major)
Minors: Electrical and Computer Engineering
GPA: 3.7, Dean's List (All Semesters)

PROFESSIONAL AND RESEARCH EXPERIENCES

Cisco, San Jose, CA, *Software Engineering Intern* **May 2024-Aug. 2024**

- Developed and implemented a CI/CD pipeline using Python and Ansible, resulting in a 40% improvement in pre-deployment anomaly detection for automotive-grade network configurations
- Engineered a distributed backend system with predictive telemetry solutions to identify configuration issues
- Architected a full-stack application with a React frontend and Node.js backend that included HTTP API endpoints for data retrieval and visualization, improving stakeholder understanding of technical specifications by 35%

Gao Labs, Cornell University, *Research Assistant* **Jan 2024-Dec.2024**

- Designed and implemented event-driven cloud architecture on Google Cloud Platform for neural network model training and automated workflows that trigger model training jobs using cloud functions
- Created a version management system using bucket separation for efficient storage and retrieval of ML models
- Optimized memory usage in data preprocessing pipeline for handling large-scale emissions datasets (5-20GB)

PROJECTS

Fast Robots, Ithaca, NY, *Semester Long Project* **Feb. 2025-Present**

- Soldered and integrated an Artemis Nano microcontroller, IMU, and dual Time-of-Flight sensors onto a robotic car platform for real-time sensing and navigation
- Implemented PID control in C++ tuned via experimental gain scheduling for precise wall-following, smooth cornering, and dynamic trajectory adjustments in complex indoor environments
- Developed and tuned a Kalman filter in C++ for multi-sensor fusion and state estimation, significantly improving localization precision and ensuring stable trajectory tracking under noisy sensor conditions

Sign Language Recognition Glove, Ithaca, NY, *Class Project* **May 2025**

- Engineered a wearable sign language interpreter using a Raspberry Pi Pico with integrated flex sensors, contact sensors and an IMU for precise gesture detection, translating common phrases into text with 95% accuracy
- Implemented signal processing techniques in C for real-time threshold-based classification of finger positions and hand orientations, eliminating the need for computationally intensive machine learning models

Pi Tamagotchi, Ithaca, NY, *Class project* **May 2024**

- Designed and prototyped an embedded system using Raspberry Pi hardware with integrated camera systems, demonstrating IoT application development applicable to automotive sensor networks
- Constructed a scalable face recognition system with 90% accuracy, leveraging computer vision techniques relevant to driver-vehicle interface systems and implemented database integration for state management

TECHNICAL SKILLS

Programming Languages: Python, Java, C, C++, SQL, Assembly Language, Git
Technical Skills: Microcontroller Programming, Sensor Integration, Data Analysis & Visualization, Embedded Software