SHAOYANG STASSEN

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EDUCATION

Cornell University, College of Engineering | **GPA 3.842** **Ithaca, NY**
B.S. of Computer Science, Minor in ECE & Business | **Dean's List: (x5)** **Aug 2022 - May 2026**
Relevant Coursework: Robot Learning, Robotics, Computer Vision, Machine Learning, Computer Systems, System Programming, Computer Graphics, Analysis of Algorithms, Data Structures and Algorithms, Functional Programming, Computer Network

RESEARCH

Assistive Robotics Researcher | *EmPRISE Lab, Cornell University* **October 2024 - Present**

- Developed a video demonstration pipeline to fine-tuned a pre-trained multi-modal foundation model to learn patient transfer
- Integrating video demonstration with other data modalities, and conducting model evaluation using ML performance metrics
- Working with undergraduates and PhD students to address data scarcity in task planning for robotics using novel solutions

EXPERIENCE

Machine Learning Engineer | *Combat Robotics@Cornell* **Sept 2022 - Present**

- Developed a CNN-based model using OpenCV and PyTorch with real-time data achieving $> 90\%$ success rate.
- Utilized reinforcement learning to predict enemy robot locations in real-time via in-house simulation, improving attach strategy
- Collaborated with engineers to design, build, and test autonomous features, including object detection and road tracking

Computer Vision Teaching Assistant | *Cornell University, College of Engineering* **Jan 2025 - Present**

- Co-designed a Vision-Language Model project - Smart Image Captioning - to help students practice and reinforce their learning
- Facilitating learning through office hours, covering core concepts, including feature detection, stereo, and semantic segmentation

Technology Chair | *Cornell Mergers and Acquisitions Club* **Dec 2023 - Present**

- Developed and maintained club site, integrating HTML, CSS, and JavaScript for responsive, interactive designs
- Led digital infrastructure improvements and implementing technical solutions to enhance the club's online presence

Data Engineer | *Travelers Insurance Company* | *Hartfod, CT* **May 2024 - Aug 2024**

- Innovated a new solution for scalable data pipeline for consumer data, leveraging Agile methodologies for efficient development
- Designed a serverless solution to consume 1M+ records daily from Kafka, replacing Kubernetes with an AWS API Gateway
- Processed and delivered data using AWS Lambda and Firehose, ensuring error handling, data integrity, and system reliability
- Compared webhook vs. Kubernetes, analyzing cost and labor, achieving a 20% cost reduction and 8-hour savings per update

PROJECTS

Specialized LLM agent | *Combat Robotics@Cornell* **Aug 2024 - Present**

- Developing a chatbot using Retrieval-Augmented Generation and LLMs, enabling support based on team-specific documentation
- Integrating LangChain, and vector databases to efficiently retrieve, process, and generate responses tailored to the team's needs
- Implementing features like document querying and engineering explanations, leveraging distributive computing for scalability

Softbody Physics Simulation | *Independent* **Aug 2024 - Nov 2024**

- Developed a simulation using the Spring-Mass model in TypeScript, implementing 2D kinematics, gravity, and collision detection
- Built interactive controls for real-time updates and configured local hosting for seamless deployment and transferability

Rubik's Cube Solver | *Independent* **May 2024 - Aug 2024**

- Developed a Rubik's Cube solver in Python with camera integration, analyzing all faces to compute the optimal solution steps
- Implemented computer vision for color detection and Kociemba's algorithm to generate the least-step solution to solve the cube

AWS Slack Task Reminder | *Combat Robotics@Cornell* **Jan 2024 - May 2024**

- Automated task reminders via Slack API, using AWS Lambda and EventBridge, improving workflow efficiency
- Saved 20 hours per semester for Team Leads by streamlining task management and automated reminder processes
- Developed a REST API with API Gateway and CloudFormation, enabling deployment of new features and broader integration

SKILLS

Languages: Python, C++, C, Java, SQL, JavaScript, TypeScript, LaTeX, OCaml, HTML, CSS, C#
Technologies: AWS, Git, PyTorch, Tensorflow, Yolov8, Terraform, Jenkins, Conda, Bash, ROS, Kubernete, Unix, GNU Make