Xuanyou Chen

Address: 960 Spring St. NW, Atlanta GA | Tel: (760) 390-0895 | Email: xchen3019@gatech.edu | Personal Website

Education

Georgia Institute of Technology — Atlanta, GA
Bachelor of Science in Electrical Engineering — Expected May 2028
Dual Degree Engineering Program

Emory University — Atlanta, GA
Bachelor of Science in Computer Science and Mathematics | Dean's List — May 2025
Cumulative GPA: **4.0/4.0**

Experience

Georgia Tech ECE Department | Robotics Course Assistant — Aug 2025 – Dec 2025 (expected)

- Develop a Python package for new robotics platforms (myCobot 280 manipulators) used in ECE 4560 *Introduction to Automation and Robotics*.
- Replicate in Python the full set of robot-control functionality previously provided in MATLAB, adapting them to myCobot in place of the original servomotor interface.
- Implement educational robotics algorithms—forward/inverse kinematics and the Jacobian—using fundamental mathematical operations to help students learn the underlying derivations.
- Create unit tests to validate core arm functions and custom kinematics implementations.

Emory Center for AI Learning | Project Leader — Jan 2025 - May 2025

- Led the development of a medical chatbot in collaboration with MedView to answer device-related questions.
- Coordinated development efforts, guiding integration between frontend, backend, and database components.
- Developed a React + TypeScript frontend supporting both text and voice interaction using the Web Speech API.
- Built a FastAPI backend to query the DeepSeek API, with semantic caching using Sentence Transformers and FAISS for low-latency FAQ retrieval from a predefined MongoDB database.

Curastone | Software Developer Intern — Sep 2023 - Dec 2023

- Developed an AI learning assistant generating flashcards and personalized exercises using TypeScript and Next.js.
- Implemented user authentication, file upload, and course management, integrated with backend API using Redux.
- Designed responsive webpages using Tailwind CSS to ensure proper display of elements on various screen sizes.
- Deployed website using Vercel and AWS Route 53 and documented the deployment process for future reference.

Emory Goizueta Business School | AI Research Assistant — Jan 2024 - May 2024

- Developed a full-stack video analytics platform with Next.js frontend and a SpringBoot backend (42+ REST APIs).
- Deployed backend server and MySQL database instance on Linux-based AWS EC2 instances, configured network settings to enable remote access.
- Designed database schema and automated data transfer from local development to Linux server using Bash scripts.
- Developed a video content similarity model using AWS Rekognition for object detection, ChatGPT-4 + SpaCy for transcript-based semantic analysis.

Emory Robotics Club | Programming Team Member — Sep 2024 - May 2025

- Built and programmed the VEX V5 Classroom Starter Kit robot as a foundation for autonomous and driver control.
- Developed motion code using the PROS C++ library for the 2025 VEX "High Stakes" competition.
- Implemented path-planning logic and tuned PID controllers for drivetrain and lift stability.

Projects

Behavioral Cloning for Collision-Free Panda Arm Trajectories | GitHub — 2025 Summer
Tools: Python, ROS, MoveIt, PyTorch

- Built a behavioral cloning agent for the Franka Emika Panda arm to generate collision-free trajectories in a cluttered environment, using expert demos from MoveIt.
- Implemented data generation pipeline in ROS: randomized obstacles and target, validated inverse kinematics, planned trajectories, and extracted observations.
- Trained a PyTorch MLP network (2x256 hidden layers) mapping observations to joint increments.

Deep Reinforcement Learning for Mobile Robot Navigation | GitHub — 2025 Summer
Tools: Python, PyTorch, MuJoCo, SB3

- Trained SAC expert agents in 4 benchmark environments using SB3 and collected expert rollouts.
- Implemented AIRL in PyTorch: built discriminator with reward g(s,a) and shaping network h(s), adversarially training against the policy to recover reward functions.
- Demonstrated that the learned rewards correctly distinguish expert vs random behavior (e.g. Bipedal: 5390 ± 159 for expert vs. -23215 ± 20535 for random) .

Skills

Robotics & Simulation: ROS 1 & 2, MuJoCo, MoveIt, PyTorch, Scikit-Learn, Stable-Baselines3 (SB3), OpenCV
Programming Languages: Python, Java, C, C++, SQL, JavaScript
Systems & Tools: Linux, Git, VMware, Amazon Web Services, Google Cloud Platform