

Mel Xiao

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EDUCATION

University of Chicago, Chicago, IL

Expected June 2028

Bachelor of Science in Computer Science and Mathematics

GPA: 3.93/4.00; Dean's List (2024 – 2025)

SKILLS

- Programming Languages: Python (NumPy, Pandas), Java, SQL, C, C++, JavaScript
- Developer Tools & Technologies: Git, Docker, REST APIs, WebSockets, AWS Services (Cognito, Bedrock, ECS Fargate, S3, SQS)
- AI/Machine Learning: Llama, PyTorch, Hugging Face Transformers, Gemini, ChatGPT, Claude Code
- Framework: React, Flask, FastAPI, Spring Boot

WORK EXPERIENCE

Software Engineer Intern, VortexNet

Mar. 2026 – June 2026

- Built AI-powered custom playlist platform on AWS using React and Spring Boot microservices, enabling real-time cover design, product customization, and ordering through scalable RESTful APIs
- Designed PostgreSQL schemas and implemented Redis caching for product and cart operations, reducing average API latency by 70% and database load by 40% in load testing
- Developed prompt-based image generation pipeline using Amazon Bedrock and OpenCV to dynamically generate, process, and compose customized product preview images
- Implemented Amazon SQS-based order processing pipeline for asynchronous checkout and fulfillment events, supporting 10K+ daily orders with a success rate above 99%

Software Engineer Intern, Socially Engaging Robotics (SEBO) Lab

June 2026 – Aug. 2026

- Developed a full-stack educational application that enabled real-time interactions between children and the Misty robot through an iPad interface and an LLM-powered spoken conversation pipeline
- Built FastAPI backend services with HTTP APIs and persistent WebSocket connections, enabling low-latency communication between the application and robot
- Integrated Llama-based natural language pipeline combining speech-to-text, language model inference, and text-to-speech capabilities to support lifelike robot conversations
- Designed the backend architecture from the ground up to coordinate lesson workflows, robot control, and speech processing reliably during a 100-participant user study

Software Engineer Intern, UChicago Institute for Climate & Sustainable Growth

June 2025 – Mar. 2026

- Developed and fine-tuned a NuExtract-v1.5 named entity recognition model in Python to extract ESG-related entities from 15k+ corporate sustainability reports and analyze the relationship between sustainability disclosures and corporate behavior
- Built a Python data extraction pipeline using Google DeepMind's AlphaEarth dataset to process 4.7M wetland observations across the United States and evaluate the impact of legislation on wetland degradation

LEADERSHIP & ACTIVITIES

UChicago Robotics Club, Executive

Oct. 2024 – Present

- Led 70-member engineering club by managing a \$50,000 endowment, mentoring 2 junior members weekly, and running an annual 15-week training program covering CAD, prototyping, and engineering design principles
- Developed embedded C++ software on Arduino to convert 3D voxel data into synchronized 2D LED patterns for a persistence-of-vision volumetric display showcased at MakeMIT 2026