Zhefan Guo

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OBJECTIVE

Seeking an internship or research opportunity in machine learning and artificial intelligence.

EDUCATION

University of Connecticut, School of Engineering — Storrs, CT
Bachelor of Engineering, Computer Science — August 2022 – May 2026
Minor: Mathematics
Cumulative GPA: 3.600/4.00

Saint Joseph High School — Trumbull, CT
GPA: 91.38/100 — May 2022

RELEVANT COURSEWORK

Computer Science: Data Structures and Object-Oriented Design, Principles and Practice of Digital Logic Design, Introduction to Discrete System, System Programming, Cybersecurity Lab, Algorithms and Complexity, Probabilistic Performance Analysis of Computer System, Introduction to Computer Architecture, Big Data Analytics, Introduction to Machine Learning,
Math: Calculus, Linear Algebra, Differential Equations, Probability

PROJECTS

Explainable Autonomous Vehicles Project, *Jinbo Bi's Lab, University of Connecticut* **March 2025 – November 2025**

- Built saliency-map pipelines using YOLOv11 and Gaussian heatmaps to show AV decision-making regions.
- Prepared and annotated multimodal datasets by adding saliency highlight regions and writing ground-truth explanations, supporting the training and evaluation of saliency-aware captioning models.
- Built the project's initial GitHub webpage, collaborated to Flask and Supabase backend development, and integrated backend outputs into the deployed web application (with UI implemented by another undergraduate student).

3D Mesh Generation from Image and Text – Senior Design Project **September 2025 – Present**

- Developed the front-end interface in Next.js, including image upload, gallery display, and an interactive 3D OBJ viewer for mesh visualization.
- Designing the system architecture for connecting the front end to a Flask/GPU backend for diffusion-based text-to-image and image-to-3D reconstruction models.
- Implementing API routes and UI components to integrate upcoming LRM / Gaussian Splatting model outputs once backend services are deployed.

Personal Website & Chatbot Project **August 2025 – Present**

- Planning the migration of my personal website from Hugo to Next.js for improved UI customization and modern component-based design.
- Designing BenBot, a personalized chatbot that will use a React frontend and a Google Gemini backend to answer questions about my background.
- Experimenting with retrieval-augmented generation (RAG) to support grounded and personalized responses when the system is deployed.

World Model Dataset & Representation Learning Exploration **November 2025 – Present**

- Implemented early-stage data pipelines for generating multimodal samples (image, heatmap, caption, audio).
- Designing architectures for future latent-prediction modules inspired by JEPA-style world models.

ACTIVITIES

AI Club & Data Science Club & Biotech Club **January 2023 - Present**

- Participate in workshops and collaborative projects on ML algorithms, data analysis, and applied AI research

Chinese Students and Scholars Association (CSSA) **September 2022 – May 2023**

- Engage in cultural and community events supporting international students

Skills and Interests

- Programming languages: Python, PyTorch, Flask, Next.js, React, Git, Supabase, YOLOv11, Gaussian Splatting, Machine Learning, LLMs (Gemini), ChatGPT
- Languages: English, Mandarin Chinese
- Interests: Artificial Intelligence, Machine Learning, Computer Vision, Explainable AI