

# Alex Liu

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## EDUCATION

**University of Florida**, *B.S. Computer Science, Minor in Geography*

GPA:3.80/4.0 | Gainesville, FL

• **Award:** Dean's List | Expected Graduation: May 2028

• **Relevant Coursework:** Computer Organization, Linear Algebra, Data Structures and Algorithms, Programming Fundamentals 2, Discrete Structures, Calculus 3

## SKILLS

**Programming Languages:** Python, C++, C, Java, Rust, C#, Bash, SQL, RISC-V Assembly

**Web & Software Development:** React, Node.js, HTML, CSS, Javascript

**Technical Tools:** Git, Linux, MATLAB, Photoshop, GIS

## EXPERIENCE

**Instructor**, *Logic Lab*

Jun 2022 – Jul 2022 | Gainesville, FL

- Led and instructed a class of **30+** students in math and chess, designing lesson plans, and building basic skills.
- Created engaging materials and adapted teaching methods to foster critical thinking and problem-solving.
- Managed classroom dynamics and evaluated progress to refine instructional strategies.

## PROJECTS

**Geography Dashboard**, *React, Leaflet, Supabase(SQL), Vite, TypeScript* 

Nov 2025

- Built a web-based geospatial dashboard with radius search, custom polygon drawing, multi-layer amenity filtering, heatmaps, and real-time map interactions using OpenStreetMap data.
- Implemented modules to analyze cities by amenity density, diversity, spatial patterns & geographic insights.
- Integrated Supabase authentication and a persistent “Saved Places” system for logging in, storing points of interest, and managing user data across sessions

**UF Health SmartScribe**, *HTML, CSS, JavaScript, Supabase, Gemini AI* 


Nov 2025

- Engineered **AI-powered** medical documentation system that transcribes doctor-patient conversations in real-time and auto-generates structured SOAP notes, reducing clinical documentation time by **60%**
- Integrated DeepGram API for speech-to-text with speaker diarization and Gemini API for clinical fact extraction, processing **60+** words/minute with **sub-5-second** analysis response times
- Architected a full-stack application with PostgreSQL database supporting patient records, visit history, and AI recommendations with secure authentication and encrypted data storage

**Grade Track**, *Flask, React.js, SQLAlchemy, PostgreSQL, Docker* 

Oct 2025

- Engineered a full-stack analytics dashboard that visualizes student performance trends across courses using Flask APIs, React, and Recharts
- Orchestrated deployment in Docker, reducing **85%** setup time ensuring consistent cross-environment builds.
- Integrated real-time data aggregation and visual analytics to demonstrate mastery of backend design, database modeling, and frontend interaction.

**Ability Bridge**, *Python, OpenCV, MediaPipe, PyAutoGUI* 

Sep 2025

- Developed a real-time facial-gesture control system processing over **14,000** facial landmark points/sec to enable hands-free computer interaction for users with limited mobility.
- Designed and optimized 3D head-pose cursor mapping, adaptive mouth-motion Morse decoding, eyebrow-raise click detection, and duration-based blink commands, achieving **30 FPS with < 100 ms** latency.
- Implemented dynamic calibration, exponential smoothing, and hysteresis-based signal processing to improve gesture precision and reduce false activations across diverse lighting and facial conditions.

## LEADERSHIPS & ACTIVITIES

**UF Society of Asian Scientists & Engineers**, *SASE intern*

Aug 2024 – Present | Gainesville, FL

- Planned a professional event with **100+** members dedicating **30+** hours, for **150+** attendees in SASE

**UF Chinese American Student Association**, *Event Committee Member*

Oct 2024 – Present | Gainesville, FL

- Spearheaded a culture Festival for **300+** participants, investing **30+** hours to coordinate & program