Elliot Liu

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Education

Duke University *Durham, North Carolina, USA*
Master of Science in Economics & Computation (CS + Economics) *2025 – 2027*
- GPA: **TBD**
- Relevant Coursework: Econometrics, Advanced Computer Networks, Mathematical Finance

University of Florida *Gainesville, Florida, USA*
Bachelor of Science in Computer Science *2021 - 2025*
- GPA: **3.9**
- Relevant Coursework: Data Structures and Algorithms, Intro to Software Engineering, Databases, Operating Systems, Intro to Machine Learning, Computational Linear Algebra, Engineering Statistics, Technical Writing, Intro to Bioinformatic Algorithms, Programming Language Concepts

Experiences

Minetest Migration (C++, Lua) *Gainesville, Florida*
University of Florida *Jan. 2025 – May 2025*
- Modified the open source game Minetest's modding API to support additional programming languages under the supervision of Dr. Jeremiah Blanchard.
- Rewrote and unit tested over 300+ language-agnostic API functions by writing Lua scripts to verify functional correctness.
- Created and presented test mods in Lua and C for demonstrative purposes and to enhance project's pedagogical value.

Full Stack Developer (React, TypeScript, TailwindCSS, SQLite) *Gainesville, Florida*
Society of Asian Scientists and Engineers *Jan. 2025 – May 2025*
- Optimized and updated the website for UF's Society of Asian Scientists and Engineers branch as a full-stack developer.
- Designed serverless backend API endpoints and database schemas, managed service integration, and added interactivity to frontend components.
- Wrote documentation and guides to improve extensibility and allow non-technical staff to use automated site functions.

Projects

AI Financial Advisor (Electron, NodeJS, Python)
- Developed a desktop app that automatically scrapes news websites and harnesses LLMs to deliver financial advice tailored to the user's portfolio.
- Applied async programming, inter-process communication, and prompt engineering to optimize, synchronize, and standardize output from resource-intensive AI models while eliminating room for user error.

Tube Amp Simulator (Modern C++)
- Wrote a cross-platform audio plugin with the JUCE library to simulate the sound profile of a tube amplifier.
- Utilized custom waveshaping functions and parametric equalization to process system audio while displaying changes with a visualizer.
- Implemented a GUI to allow users to toggle and display filter status.

Bioinformatics Research (R)
- Leveraged machine learning to train SVM, random forest, and logistic regression models to classify experimental data, achieving a 93% accuracy rate.
- Gained familiarity with bioinformatics libraries and practices such as Tidyverse and enrichment analysis.
- Generated heatmaps and volcano plots to better understand and visualize gene expression differences between control and experimental groups.

Honors and Awards

Benacquisto Scholarship *2021 - 2025*
- I earned a full cost-of-attendance merit scholarship to the University of Florida

Phi Beta Kappa *2023 - 2025*
- I was inducted into the Phi Beta Kappa Honor Society at the University of Florida for academic excellence.

Skills

Tools: Git, CMake, Unix, Docker, Visual Studio, MATLAB, IntelliJ, Postman, RStudio, ArcGIS, Microsoft Office, Excel
Languages: C++, C, Python, Golang, JavaScript, TypeScript, Shell Scripting, Java, Lua, SQL, R, HTML, CSS
Frameworks: JUCE, React, Jupyter Notebook, Flask, SQLite, MySQL, JUnit, testing (Golang), Bun, Next.js, TanStack, NodeJS