Yichen (Amanda) Lu

Phone: +1 412-377-8290 | Email: yichenlu@andrew.cmu.edu | Website: www.amanda-lu.com

EDUCATION

Carnegie Mellon University **Pittsburgh, PA**
Bachelor of Science in Information Systems, Minors in Engineering, Philosophy 08/2022 – 05/2026

- GPA: 3.70/4.00, College Dean's List in all semesters
- Relevant Coursework: Data Structures, Database Development and Design, Application Development and Design, Machine Learning, Fundamentals of Programming and Computer Science, Multivariate Calculus, Linear Algebra, Discrete Math, Probability

SKILLS

Programming skills: Python, C, SQL, Ruby, HTML/CSS, JavaScript, R, LaTeX
Technologies: Git, PostgreSQL, Mongo dB, Vertabelo, Figma
Languages : Chinese (Native), English (Full Professional Proficiency)

PROJECTS

C0 Virtual Machine | Github | (C) 12/2023

- The virtual machine can run any C0 code that has been compiled to C0 byte code.
- Implemented using an operand stack, call stack, local variable array, program counter, and constant and function pools. In addition to supporting all C0 instructions, including memory allocation on the heap, the VM provides dynamic checks for safety, a cornerstone of the C0 language, which forbids out-of-bound array accesses and dereferencing the NULL pointer, among other unsafe behaviors.
- Beyond full support for C0 code in the virtual machine, I extended it with support for the C1 language, which adds generic tagged pointers and function pointers. Just as with the C0 instructions, it includes dynamic safety checks that prohibit unsafe casts.

Sudoku | Demo | Github | (Python) 04/2023

- Sudoku game made in **Python**, integrated automatic filling, undo & redo, and auto-candidate mode (update fillable numbers in grid).
- Created innovative features based on Sudoku techniques, including updating obvious singles, doubles, triples, and autoplayed singletons (automatically showing and setting all the singletons).
- Used **Object-Oriented Programming** to record the changes of numbers in the Sudoku grid
- Used **backtracking algorithm** to integrate the automatic filling, tested to be able to solve 10+ medium level Sudoku problems within one second.
- Designed a minimalist user-friendly interface using **Figma**, including starter screen, main screen, and help screen.

PROFESSIONAL EXPERIENCE

Re:Bloom Pittsburgh, Pennsylvania
Web Developer Intern 09/2023 – 12/2023

- Created website for small local businesses: built sitemaps, designed wireframes using Figma, devised custom responsive sites via Squarespace, created detailed documentation about the website so business owners can keep it up to date afterwards.
- Weekly consulting meeting with client, performed user research and user testing, proactively liaised with developer team and project manager to ensure efficient and time delivery of significant projects.

Jaguar Land Rover China Shanghai, China
Business Strategy Intern 06/2023 – 08/2023

- Conducted in-depth research on China's automotive battery swapping and BaaS (Battery as a Service) market, analyzed the business model and market participants, wrote an 8-page analysis report, designed 12-page slides to present the research results.
- Monitored industry trends (including policies, exports, and technologies), tracked macroeconomic data and financial performance of NEV companies, built databases and made dashboard using Excel (pivot table), supported to make data-driven decisions.

RESEARCH

Statistics and Data Science Department, Carnegie Mellon University Pittsburgh, PA
Research Assistant 08/2023 – 12/2023

- Worked with a 6-person research team to clean, visualize, and analyze the NSF fellowship database using Excel, R, and SQL.
- Cleaned data, matched college name with state and standardized subject names using SQL, used the cleaned data to create visualizations.
- Implemented various fuzzy matching techniques in R to standardize university names and applied a majority vote approach for final name standardization.