Kaelyn Long Lin

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EDUCATION

University of Michigan | College of Engineering **Ann Arbor, MI**
B.S.E in Computer Science, Minor in Statistics and UX Design *Expected Graduation: May 2026*

- **Relevant Coursework**: Data Structures and Algorithms, Computer Organization and Hardware, Web Applications and Systems, Computer Science Pragmatics, Statistical Computing, Discrete Mathematics, Applied Linear Algebra, Calculus I-III, Robotics Mechanisms

PROFESSIONAL EXPERIENCE

University of Michigan **Ann Arbor, MI**
NLP Researcher and AI Software Developer *Nov 2024 – Present*

- Conduct research on text summarization, evaluating ChatGPT using human methods like Likert scales and pairwise comparisons
- Build web crawlers and benchmark a UMich-developed bot across diverse datasets, and automate data preprocessing workflows

Akima **Herndon, VA**
Software Engineering Intern *June 2024 – August 2024*

- Designed and developed a robust web-based E911 dispatch system for 179 Air Force bases, leveraging AWS, React, Spring Boot, and Tableau to resolve 300+ tickets
- Automated base and ticket tracking with MySQL and Python by developing data validation scripts, ETL pipelines, and real-time API integrations, streamlining updates and enhancing efficiency
- Led a cross-functional team of 7 as Scrum Master, facilitating Agile practices, refining backlogs, and driving on-time delivery
- Presented the MVP to 50+ stakeholders, including the CEO, senior leadership, and military teams, effectively communicating progress, aligning on objectives, and gaining buy-in for future phases

Center for Academic Innovation at University of Michigan **Ann Arbor, MI**
XR Researcher *October 2023 – May 2024*

- Implemented audio functionalities for vocal interaction with virtual patients in a VR application using Google Cloud Speech API, Unreal Engine, and C++, capturing and processing auction input with optimized settings
- Collaborated with medical experts and professors to lead iterative user testing sessions, gathering extensive feedback and analyzing data to drive continuous design improvements and elevate user experience
- Oversaw financial and HR operations for the XR program, managing 32 projects and optimizing performance across 17 schools

PROJECTS

Wikipedia Search Engine and Custom MapReduce Server *(Python, HTML/CSS, JavaScript, Hadoop)* **October – December 2024**

- Built a multi-worker and fault-tolerant MapReduce server in Python using threading and TCP to process user-submitted tasks
- Built a scalable search engine from scratch in React based on text segmentation, Hadoop MapReduce indexing, and tf-idf scores, allowing users to query Wikipedia pages and returning a list of results ordered by relevance

Instagram Clone *(Python, HTML/CSS, JavaScript, AWS)* **September – October 2024**

- Developed a client and server-side dynamic web app using React, Flask, SQLite, and custom REST APIs, emulating Instagram
- Features photo uploads, likes, comments, user following, session management, and infinite scrolling

LC-2K Pipeline Assembler, Cache Simulator, Linker *(C)* **September – December 2024**

- Developed a custom RISC architecture assembler, simulator, and linker to convert assembly code into machine code, simulate execution, and combine object files into executables
- Built a pipeline assembler with forwarding and stall mechanisms to handle data and control hazards
- Implemented a cache simulator supporting fully associative, direct-mapping, and set-associative caches

Data Structure and Algorithms Class Projects *(C++)* **January – May 2024**

- Word Morphing: Implemented BFS and DFS algorithms for customizable word transformations (e.g., letter changes, insertions, deletions, swaps), enabling efficient graph search and route tracing of complex dictionaries
- Mine Escape: Developed a pathfinding simulation using priority-based search algorithms, custom priority queues with binary heaps and sorted arrays to optimize tile discovery
- Database Query Language: Built a command-line shell emulating a relational database with a simplified SQL-like query language, leveraging dynamic arrays, hash tables, and BST for efficient table management and query execution
- Drone Delivery: Created a fast route tracking mechanism across campus using MST, branch and bound, and Kruskal's Algorithms, and explored heuristic approaches to achieve nearly-optimal solution (eg. Traveling Salesperson and Knapsack)
- Euchre: Developed a text-based simulator of popular card game, Euchre, supporting gameplay for up to 4 AI/human players to learn about abstract data types, object-oriented programming, and polymorphism

SKILLS

Languages: C/C++ | Python | HTML | CSS | JavaScript | Shell scripting | SQL | R
Software: Visual Studio Code | Github | Git | AWS | Jira | Confluence | Tableau | Jupyter Notebook | Excel
Libraries: React | Node | Jinja | Flask | JQuery | SQLite | Bootstrap | TensorFlow