Michael Chen

Portfolio: https://chenwmichael.github.io/portfolio-website/
GitHub: https://github.com/ChenWMichael/

Skills

- **Programming Languages/Technologies:** Python, Java, JavaScript, C++, C, HTML/CSS, React.js, Node.js, Express.js, RESTful API, MongoDB, React Native, SQL, R, Stata, Git, GitHub
- **Relevant Coursework:** Data Structures and Algorithms, Software Design and Development, Artificial Intelligence and Machine Learning, Computer Systems, Networked Systems, Internet and Web Systems, Computer and Network Security
- **Core Competencies:** Healthcare Domain Expertise, Technical Writing & Communication, Analytical & Critical Thinking, Problem Solving, Teamwork & Collaboration, Time Management, Self-Motivated, Mentorship (UPenn Mentor), Comfortable Exploring New Domains

Education

University of Pennsylvania *Dec. 2024*
- Master of Computer and Information Technology (Computer Science), GPA 4.0

University of California – Berkeley *Dec. 2020*
- Bachelors (double major) in Molecular & Cell Biology and Economics, GPA 3.76

Work Experience

Gilead Sciences (Foster City, CA): *Technical Intern V, Information Management Automation* *May. 2024 – Aug. 2024*
- Implemented and deployed automation solutions, optimizing business processes and enhancing tool integration
- Utilized APIs to extract, manage, & manipulate large datasets, improving data accessibility and real-time processing capabilities
- Authored & maintained robust documentation for automation projects, facilitating successful rollout and adoption of new systems

Abbott, Medical Device Business Units (Santa Clara & Pleasanton, CA): *Regulatory Affairs Specialist* *Aug. 2021 – Apr. 2023*
- Led regulatory compliance for software in and software as medical devices, ensuring adherence to global standards
- Managed documentation for software updates; developed and presented software regulatory content for non-technical audiences

International Consulting Group (San Jose, CA): *Regulatory Medical Writer & Project Coordinator* *Oct. 2020 – Aug. 2021*
- Led technical and regulatory writing/documentation for 14+ clients (health software, pharmaceutical, and biologic products)

Selected Projects

Syzygy Custom-Search Engine*
- Engineered Java-based multi-threaded crawler on AWS, processing 1M URLs, storing 320k+ pages, & indexing 30k pages/hr.
- Optimized KVS operations for large datasets using Java Streams and persistent queues, ensuring robustness and efficient lookups.
- Enhanced frontend with cached/nested pages, lazy loading, infinite scrolling, text snippets, highlighting, and light/dark Mode.
- Implemented aggressive filtering heuristics & length-based indexing, reducing low-quality pages and tokens, improving accuracy.
- Improved search ranking heuristics with TF-IDF and phrase matching
- Utilized Slack-based monitoring and debugging to address multithreading challenges, ensuring consistent system stability

PennSearch*
- Developed C++ based peer-to-peer search engine atop a self-built Chord Distributed Hash Table overlay network.
- Built LS and DV routing protocols, integrated with Optimized Link State Routing using NS-3 & tested with NS-3 simulation.
- Implemented cryptographic hashing techniques for storage and retrieval within the Chord overlay network

Group Sports Queue
- Engineered a full-stack application for real-time game queuing in group sports, adaptable across various sports.
- Developed the backend using Node.js and Express.js, integrating RESTful APIs for dynamic content delivery.
- Crafted a responsive frontend with React.js and asynchronous JavaScript, featuring a draggable/droppable queue.
- Optimized for mobile browsers, ensuring a seamless user experience on various devices.
- Utilized MongoDB Atlas Cloud for robust data services and Fly.io for global deployment and performance.

React Portfolio
- Implemented dynamic UI components and state management in React to create an interactive and responsive user experience.
- Utilized Email.js for establishing direct user communication features, facilitating integration of contact functionality.
- Employed CSS techniques and JavaScript for creating visually appealing and intuitive clickable images and popups.
- Integrated social media links using React components, enhancing connectivity and user engagement with external platforms.

GPT-Exploration for Enhanced Text Generation*
- Generated quality text applications (summaries, translations, simplifications) using OpenAI's GPT-3.5 and prompt engineering.
- Implemented few-shot & zero-shot learning models to enhance GPT-3.5's ability to handle NLP tasks.
- Fine-tuned GPT-3.5 for biographical data extraction, transforming structured data into coherent biographies and vice versa.
- Conducted performance analysis using precision, recall, and F-score metrics, identifying areas for model improvement.

Mobile Medication Reminder App* (In-Progress)
- Developed a cross-platform mobile application using React Native & Expo CLI, deployment on both iOS and Android devices.
- Implemented secure user authentication with Firebase, supporting email/password to ensure robust user account management.
- Integrated React Navigation to manage in-app navigation, facilitating smooth transitions between key screens.
- Designed and implemented core features for medication management, utilized Expo Notifications to schedule local reminders.

* Private repositories available upon request