

# Michael Chen

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

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## 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, Power BI
- **Relevant Coursework:** Data Structures and Algorithms, Software Design & Development, Artificial Intelligence & Machine Learning, Computer Systems, Networked Systems, Internet & Web Systems, Computer & Network Security
- **Core Competencies:** Healthcare Domain Expertise, Technical Writing & Communication, Analytical & Critical Thinking, Problem Solving, Teamwork & Collaboration, Time Management, Self-Motivated, Fast Learner & Dedicated Achiever

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## 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

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## Work Experience

### Gilead Sciences (Foster City, CA): *Technical Intern V, Information Management Automation*

May. 2024 – Aug. 2024

- Completed BI tool evaluation with robust documentation to support adoption and strategic planning, optimizing data analytics
- Leveraged Postman and GraphQL APIs from GRASP-SAP system to store data in and retrieve data from Oracle databases, automating retrieval with Python scripts, and significantly enhancing real-time data processing and management.
- Designed data mapping and flow diagrams to ensure data quality, and tracked project solutions using Azure DevOps, resulting in successful project outcomes, efficient workflow management, and complete automation of Power BI reports.
- Built complex data visualizations using DAX and M code to detect and resolve data issues in information management 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)

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## 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\*

- Developed a cross-platform mobile application using React Native & Expo CLI, deployment on both iOS and Android devices.

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- 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