Chen Yang

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EDUCATION

University of Michigan **Aug 2022 – Dec 2024**
Bachelor of Science in Computer Science *GPA: 3.60/4.00*
- Relevant Coursework: User Interface Development, Mobile app development, Software Engineering, Web Systems, Database Management, Data Structures and Algorithms

Tulane University **Aug 2020 – May 2022**
Bachelor of Science in Management *GPA: 3.93/4.00*
- Relevant Coursework: Business Computing, Financial Accounting

EXPERIENCE

Pocket Ledger (Capstone) **Ann Arbor, MI**
Application Developer *Jan 2024 – April 2024*
- Developed using **SwiftUI** and **Swift**, with the advanced OCR capabilities of the **Apple Vision** framework to enable seamless invoice scanning and accurately capture details from various invoices.
- Integrated the **GPT API**, utilizing the powerful capabilities of GPT-3.5-Turbo-Instruct for precise classification of items extracted from scanned receipts. This advanced feature enhances user experience by automatically categorizing expenses and supports a wide range of financial management tasks.
- Implemented comprehensive **CRUD** operations, allowing users to easily manage their financial data. Users can effortlessly set and track their financial goals within the app and receive insightful monthly reports to monitor their spending habits and progress towards their objectives.
- Integrated the **MobileNetV2** machine learning model for item recognition and used Apple's Speech framework for voice recognition, providing users with a smooth experience for inputting invoice items.

PROJECTS

Artist Search Web Application **Mar 2024 – April 2024**
- Developed a responsive, dynamic web application allowing users to find artists through the iTunes Search API, implementing **MVC** pattern and responsive design principles.
- Utilized **Vue.js** for frontend development and Bootstrap for CSS styling to ensure a friendly user experience.
- Developed a search bar for real-time artist searches, an artist grid for displaying search results, navigation tabs for detailed artist information, genre selection for filtering searches, and a sorting menu for result organization.

InstaCraft: Instagram Clone **Nov 2023 – Jan 2024**
- Utilized **React.js** to create an interactive web application with **client-side dynamic pages**. Implemented features like infinite scrolling and interactive elements such as double-clicking to like, enhancing user engagement.
- Used **Flask** for backend development, ensuring a robust and responsive server environment. Implemented a **RESTful web service** for accounts, posts, and comments CRUD operations, enriching platform features.
- Employed **AJAX** for asynchronous data processing and integrated **NGINX** as a high-performance web server and reverse proxy, enhancing the application's scalability and reliability. Configured NGINX to efficiently handle high traffic loads and optimize content delivery, contributing to faster load times and improved overall performance.
- Deployed the application on **AWS EC2**, demonstrating proficiency in cloud services and application deployment.

Scalable Search Engine Development **Oct 2023 – Dec 2023**
- Employed **Service-Oriented Architecture** for scaling dynamic web pages and searches, alongside developing Index and Search servers that deliver search results in JSON and HTML formats.
- Optimized search queries by cleaning and refining input, employing a weighted combination of tf-idf and PageRank scores for accurate result ranking.
- Developed a scalable search engine with features similar to Google or Bing, focusing on information retrieval, text analysis (tf-idf), link analysis (PageRank), and MapReduce parallel data processing.

Hadoop MapReduce Simulation **Aug 2023 – Oct 2023**
- Built using **Python**, inspired by Google's original MapReduce paper, this framework efficiently executes MapReduce programs across computer clusters.
- Designed Manager and Workers components for task distribution and execution, ensuring stable communication through **TCP/UDP** sockets. All communication content is formatted in JSON to maintain consistency and ease of parsing.
- Utilized **OS concurrency** (threads, processes) for task and resource optimization. Implemented robust communication protocols and a heartbeat mechanism for enhanced stability and fault tolerance.

SKILLS

Languages: C++, Python, Java, SQL, HTML/CSS, JavaScript, R, Swift
Frameworks/Cloud/Libraries/Tools: Django, Flask, React, REST, AWS, MongoDB, Linux, OCR, Git, Vue