Henry Chen

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Education

Simon Fraser University Burnaby, BC
Bachelor of Science in Computer Science *Expected Graduation: December 2025*

Experience

Undergraduate Research Assistant August 2024 – Present
Simon Fraser University *Burnaby, BC*

- Developed a Django-based database to catalog large language models (LLMs) and their functionalities, enabling organized storage and retrieval of model information
- Conducted research on 10+ LLMs, analyzing their performance across different tasks to determine the most suitable models for various use cases, such as text generation, summarization, and question answerings
- Designed and implemented the basic front-end interface for the **Data Levers** website using Vue.js, incorporating dynamic data visualization and user authentication features
- Communicated regularly with potential users and my research professor to identify and prioritize the most desired functionalities for the **Data Levers** project.

Projects

Rankr | *TypeScript, Docker, Vite, React, Socket.io, Next.js, Tailwind CSS, Redis-JSON* June 2024 – July 2024

* Developed a polling system enabling multiple users to create, join, and participate in polls, fostering real-time collaboration and decision-making
* Implemented a ranking feature that lets users nominate and rank their top choices, with results automatically calculated and displayed in order
* Built the front-end using React, Vite, and Tailwind CSS, ensuring a responsive and user-friendly interface for seamless interaction across devices
* Integrated Socket.io for real-time communication, allowing instant updates and synchronization between all participants during the polling process

NBA Player Database | *C++, Python, SQLiteDB, Google Unit Testing* May 2021 – June 2024

* Refactored and optimized over 3,000 lines of C++ code, enhancing code readability, leading to improved maintainability
* Integrated SQLiteDB to implement persistent storage, ensuring the database maintains a saved state across sessions, even after shutdown, improving data reliability
* Built real-time database features in C++ using OOP, enabling dynamic data manipulation and updates
* Implemented comprehensive Google Unit Testing to rigorously validate the functionality and reliability of over 20 key functions, ensuring robustness and minimizing the risk of runtime errors

Netflix Recommendation System | *Python, Flask, JavaScript, TMDb API, pandas* March 2024 – April 2024

* Cleaned and preprocessed 5,000+ lines of data across 6 CSV files, improving the accuracy of the collaborative filtering recommendation model.
* Developed a responsive and interactive Netflix recommendation website using HTML, CSS, JavaScript, and Flask
* Integrated TMDb API for detailed movie recommendations, including ratings, genres, and cast

Image Classifier | *TensorFlow, PyTorch, Python, Google Colab, Jupyter Notebook* May 2023 – May 2023

* Developed and fine-tuned a Convolutional Neural Network (CNN) using TensorFlow and PyTorch to classify images from the CIFAR-100 dataset, achieving an accuracy of over 95%
* Placed 13th out of 120 in a competitive Kaggle challenge within a graduate-level computer vision course
* Enhanced model performance by tuning hyperparameters, reducing training time by 20% while retaining accuracy

Technical Skills

Languages: Python, Java, C/C++, SQLite, JavaScript, HTML/CSS, R
Frameworks: React, Flask, FastAPI, Node.js, NestJS, Django, Vue.js
Developer Tools: Git, Docker, Hadoop, PySpark, TravisCI, Google Cloud Platform, VS Code, IntelliJ, PyCharm
Libraries: Pandas, NumPy, Matplotlib, Tailwind CSS, Redis-JSON