YIPENG(CODY) LIU

(+1)204-955-9058 —— yipenglliu@gmail.com —— LinkedIn —— GitHub —— Portfolio

EDUCATION

Simon Fraser University Sep. 2021 - May. 2023
Master of Science in Computer Science, Visual Computing (GPA:3.89/4.33) **Burnaby, Canada**

University of Manitoba May. 2017 - May. 2021
Bachelor of Computer Science, Honours **Winnipeg, Canada**

SKILLS

Programming Languages: **Java, HTML/CSS, JavaScript, Python, C++, C#, SQL, R**
Libraries: **Numpy, Pandas, Matplotlib, SciPy, sklearn, Junit, OpenGL, OpenCV**
Frameworks: **Bootstrap, jQuery, Spring Boot, React, Node.js, PyTorch**
Development & Tools: **AWS, Docker, Git, Unity, MATLAB, Maya, Blender, PowerBI**

WORK EXPERIENCE

Co-op Pharmaceutical Analytics
Sept. 2022 - Dec. 2022
Data Analytics job (BC Ministry of Health) *Victoria. BC*

- Employed data models to perform an **Uncertainty Analysis** of **Business Impact Analysis (BIAs)** to assess and improve the accuracy of financial decisions for new healthcare policies.
- Utilized **Oracle RDBMS** to extract complex, relevant drug-related data from **PharmaNet**, a system handling over **75 million** transactions annually, showcasing strong data retrieval skills.
- Created and fine-tuned **Regression models** and **T-Tests** to find the parameters lead to greater forecasting errors, using tools such as **Python** and **R**, showcasing data modeling and statistical analysis expertise.
- Developed a framework for ongoing data collection and analysis to continuously improve predictive models.
- Effectively visualized and presented analytical results using **Excel**, **Matplotlib** and **Power BI**, prepared an insights paper for stakeholders to communicate findings and recommend improvements.

PROJECT EXPERIENCE

Fleet Management System
Aug. 2023 - Oct. 2023

- Developed a Comprehensive Fleet Management System to enable organizations to efficiently manage and optimize their vehicle fleets with features such as vehicle tracking and maintenance management.
- Designed the front-end using **Bootstrap** and **jQuery**, and the back-end with **Spring Boot** and **Thymeleaf**.
- Implemented full **CRUD** functionality for managing users, vehicles, and employees.
- Ensured data integrity and persistence using **MySQL** and **Spring JPA** and developed a **RESTful API** to facilitate seamless data flow between the front-end and back-end.
- Enhanced system security through user authentication and registration processes using **Spring Security**.

React Based Background Management System
May. 2022 - Sept. 2022

- Developed a **MERN** Stack Background Management System to help users manage their business.
- Designed the front-end with **React** and **Webpack**, and the back-end with **Node.js** and **Express.js**, ensuring persistent data storage with **MongoDB** and managing HTTP requests using **Axios**.
- Implemented key features including user management, commodity classification management, commodity management, and authority management.

High Performance Hand Pose Estimation Jan. 2022 - April. 2022

- Conducted rigorous testing of four leading **Hand Pose Estimation Neural Networks** using RGB image inputs, thoroughly assessing their performance.
- Demonstrated expertise by converting a **Pytorch** model into an offline-ready format, enabling efficient deployment on the **Huawei Atlas 200DK board**.
- Built pre-processing and post-processing pipelines to read input video and generate output GIF.
- Pruned the model effectively to achieve a response time of **18 FPS** while maintaining its accuracy.

3D Plant Model Reconstruction Using Deep Learning Sept. 2021 - Dec. 2021

- Evaluated six most popular Point Completion Neural Networks, including **PF-NET** and **PCN**, for the reconstruction of incomplete 3D plant models, and compared their **Chamfer Distance**.
- Generated 3D plant object dataset using **Vlab**, then transferred the object dataset to **Point Cloud** dataset.
- Demonstrated expertise by adapting widely-used Point Completion Neural Networks, training them with our proprietary dataset, and fine-tuning hyperparameters to optimize model performance.

Impact of the COVID-19 of Various Industries in Canada Jan. 2021 - April. 2021

- Developed **Linear Regression model** and **Polynomial Regression model** using the **Sklearn** library to predict and analyze the impact of COVID-19 on Canada's industry-specific GDP.
- Conducted data **ETL** process on **Statistics Canada** datasets with **Pandas**, fine-tuning model hyperparameters for optimal accuracy.
- Visualized GDP trends during COVID-19 with **Matplotlib** and **PowerBI** and authored a research paper to explain these trends comprehensively.

Time Genie May. 2020 - July. 2020

- Utilized **Android Studio** to create a mobile scheduling app that helps users manage their tasks.
- Designed the front-end using **XML** and the back-end using **Java**, with **SQLite** for persistent data storage.
- Implemented **CRUD** functionality for user events, time reminders, and alarm notifications.
- Employed Test-Driven Development **(TDD)** with **JUnit**, achieving over **80%** test coverage.
- Developed **automation testing** framework and used **GitLab** to implement **CI/CD** processes.

SOFT SKILLS

- Eagerness and ability to continuously learn and quickly grasp new concepts, technologies, and tools.
- Handling pressure and setbacks gracefully, maintaining productivity, and staying motivated in challenging situations.
- Strong analytical and critical thinking skills to identify problems, analyze them, and develop effective solutions.
- Efficiently managing time to balance multiple tasks, meet deadlines, and prioritize work effectively.
- Ability to clearly and effectively communicate ideas, requirements, and feedback with team members, stakeholders, and clients.

INTEREST

Hiking, Cooking, Music, Basketball, Video game.