

# YIPENG(CODY) LIU

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## EDUCATION

### Simon Fraser University

Master of Science in Computer Science, Visual Computing

Sep. 2021 - May. 2023

(GPA: 3.89/4.33) Burnaby, Canada

### University of Manitoba

Bachelor of Computer Science, Honours

May. 2017 - May. 2021

Winnipeg, Canada

## SKILLS

**Programming Languages:** Java, HTML/CSS, JavaScript, Python, C++, SQL, MATLAB, R  
**Libraries:** Numpy, Pandas, Matplotlib, SciPy, Scikit-learn, OpenGL, OpenCV  
**Development & Tools:** AWS, Docker, PyTorch, Git, Unity, Maya, Blender, PowerBI

## WORK EXPERIENCE

### Co-op Pharmaceutical Analytics

*Data Analytics job (BC Ministry of Health)*

Sept. 2022 - Dec. 2022

*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

### 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.