JOANNA CHEONG

Vancouver, Canada | joannazhg@gmail.com | +1 (778) 798-5054

TECHNICAL SKILLS

- Languages: Python (4 years), C++(2 years), Matlab (1 year), Assembly (1 year), R (1 year), Qiskit (4 months)
- Machine Learning: PyTorch, Tensorflow, Matplotlib, NumPy, Scikit-Learn
- Database: SQL

WORK EXPERIENCE

Software Test Engineer Co-op, Sierra Wireless — Jan 2022 - Aug 2022

- Design, developed, and execute test cases to test firmware & drivers for 5G cellular modules
- Developed python test scripts to automate existing manual tests using internal and public libraries, such as PyWin32
- Developed and tested 5G network functional requirements using RF simulators such as Amarisoft and Anritsu
- Worked with software & firmware engineers to fix bugs on our cellular modules and software applications
- Led and mentored a team of junior interns during fast paced agile testing sprints

Research Assistant, Cognitive Science Laboratory — Aug 2021 - Jan 2022

- Conduct research using StarCraft 2 as a domain to study learning and attention
- Designed and implemented experiments using video game telemetry data
- Analyze data and contribute to the development of research papers and presentations

COURSEWORK PROJECTS

Fake News Detection Using LLM — Machine Learning Developer, SFU — August - Dec 2022

- Built an LLM pipeline for stance detection using BERT, RoBERTa, and ALBERT models and conducted comparative analysis
- Created a preprocessing pipeline that effectively tokenized the headline and article bodies to improve model performance
- Implemented grid search to fine-tune each model's hyperparameters
- Attained an accuracy rate which surpassed the 2018 Fake News Competition's winning result by 18%

Intelligent Systems — Pathfinding Algorithms Researcher, SFU — August - Dec 2021

- Developed multiple solvers for a logic puzzle (nonogram) using different search algorithms such as A*, BFS, DFS, iterative-deepening A*, and genetic algorithm by following pseudocode and flowcharts
- Researched methods to optimize algorithms such as improving node search strategies and adding constraint parameters
- Analyzed time and space complexity performance of algorithms
- Created performance charts as a function of the size and complexity of the nonogram puzzle

Gesture Recognition in Videos — Machine Learning Developer, SFU — August - Dec 2021

- Built a predictive model using CNN to classify deictic and emblem gestures using video data format of up to 99% accuracy
- Designed an efficient pipeline setup and created a new data format by storing lossy compressions of individual video frames into a data file which removed bottleneck and improved training times
- Trained different CNN's such as YOLOv3 and SquuezeNet and transferred weights every 50 epoch to see which epoch had the most accurate classifications during testing

Biomedical Computing — Researcher and Software Developer, SFU — January - May 2021

- Developed a novel image synthesis algorithm that reconstructs higher resolution microscopy images (Stimulated Emission Depletion) from low-resolution microscopy images (confocal) using Pix2pix technology
- Collaborated with medical imaging professionals to obtain paired microscopy image datasets
- Trained our Conditional Generative Adversarial Network (cGAN) model and focused on increasing discriminator sensitivity to simulate the distribution of high-dimensional data which produced excellent multi-modal data generation
- Performed image analysis using Matlab to analyze errors and improved the back-propagation algorithm

HACKATHONS

- Fall Hack SFU 2020 — Sentence Generator Web Application — November 2020
- Hacking for Humanity, Girls In Tech Vancouver — Accident Avoidance Alert App — May 2019

VOLUNTEER AND LEADERSHIP EXPERIENCE

- Electronics Installation Technician & Tech Support, Free Geek Technology Centre — May - October 2018
- Computer Science Peer Tutor, Simon Fraser University — May 2019 - Dec 2020

EDUCATION AND COURSEWORK

Simon Fraser University — B.A. Cognitive Science and Computer Science — January 2018 - Present

Probability and Statistics, Data Structures and Programming, Discrete Mathematics, Calculus, Artificial Intelligence, Database, Cognitive Neuroscience, Biomedical Computing, Quantum Computing, User Interface Design, Intelligent Systems, Consciousness, Cybersecurity, Pharmacology, Computational Linguistics (NLP), Computer Networking