Brendan Lai

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Work Experience

BC Children's Hospital – Digital Health Innovation Lab — **Vancouver BC, CA**

Data Analyst – Visualization Development (Part-time Contract) — *September 2022 – Present*

- Developing and deploying data visualizations to help prevent surgical site infections leading to increases of up to 60% in prevention adherence rates
- Improved dashboard usability ratings as determined by anesthesiologist surveys with increases of 30% in satisfaction and 50% in frequency of use
- Poster presentation at CPAS (Canadian Pediatric Anesthesiology Society) conference for work on PeDI (Pediatric Difficult Intubation) dashboards

Developer Co-op – Data Analytics and Visualization Tools — *May 2022 – August 2022*

- Lead end to end development of dashboards for the PeDI registry helping the department understand and analyze difficult intubation techniques
- Built scripts that clean and merge a variety of data sources to conduct data analysis for pain risk prediction studies (POQI)

Canadian Imperial Bank of Commerce (CIBC) — **Toronto, Ontario, CA**

Business Systems Analyst Co-op – Enterprise Solution Design — *September 2021 – April 2022*

- Developed and deployed Tableau dashboards supporting management to identify workflow inefficiencies (teams and applications) and viable solutions
- Presented analysis and dashboards to senior leaders in weekly meetings resulting in a reduction in project delivery length by 5 days on average
- Designed process routines and built automated python scripts reducing time spent on daily tasks and improving data cleanliness
- Lead project to mitigate data loss in preparation for transitioning between tools reducing required data migrations by 60%

MDA Ltd. — **Halifax, Nova Scotia, CA**

Software Engineer Co-op – Test Automation — *May 2021 – August 2021*

- Designed and developed automated tests in Java growing the project's smoke and regression test suites by 50% and 20% respectively
- Refactored and optimized the test precondition steps reducing the runtime by 60% and improved smoke test's reliability to 100% verification
- Monitored and update the statuses of bugs and defects in Jira ensuring all tickets were accurate and effectively logged

Education

University of British Columbia, Bachelor of Applied Science — **September 2018 – May 2023**

Integrated Engineering: *Computer Engineering Major & Engineering Physics Minor* — *GPA - 3.75 / 4.33*

Awards: *Deans Honour List (2020, 2021, 2023), 2 x Design and Innovation Award (IGEN330 and IGEN 430)*

Capstone & Technical Projects

Foosbot: An autonomous foosball opponent (4th Year Capstone) — **UBC (IGEN430)**

Team Lead & Developer — *October 2022 – April 2023*

- Designed and fabricated a robotic foosball opponent using a camera and detection algorithms to track the ball sending commands to our MCU
- Used python to code key elements of the project such as the robotics decision making, ball tracking, and camera calibration methods
- Applied a data driven approach to developing our prediction algorithms for the foosball position and programmed the robot's strategy model
- Developed a real-time GUI for users to understand what is happening behind the scenes and increase interactivity with the final product

1D and 2D Schrodinger Equation Simulations — **UBC Individual Computational Physics Project**

- Implemented advanced numerical and computational methods to simulate a variety of different classical mechanics physics problems in MATLAB

Face Familiarity Prediction Using EEG Collected Brain Wave Data — **UBC Group Course Project**

- Full machine learning project: collecting brain wave data with EEG, processing data, analyzing data, developing and training machine learning model
- The model achieved 98% and 93% classification success on the train and test sets respectively. The regression model achieved r^2=0.96

Overlap: Music Sharing Web Application (3rd Year Capstone) — **UBC (IGEN330)**

Backend Team Lead & Algorithm Developer — *October 2020 – April 2021*

- Built a Spotify integrated web application returning users listening habits and letting you discover your friend's music tastes
- Designed and developed: data schemas, routing, and middleware functions for our RESTful API and its endpoints
- Coded and developed playlist generation model and users' favourite songs incorporating collaborative filtering and clustering in python

Skills

Programming Languages and Tools: Python, PowerBI, Tableau, Jupyter, Git, Excel, MongoDB, REST APIs

Methodologies: Agile, Data Visualization, Data Analysis, Data Cleaning, Machine learning, Object-Oriented Programming, Software Testing