

JOHANN DRAYNE

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EXPERIENCE

Quantum Transport Research Data Analyst Folk Lab @ Stewart Blusson Quantum Matter Institute

📅 September 2021 – July 2024 📍 Vancouver, Canada

- Co-developed updated data collection processes using IGOR, enhancing instrument communication and data management. Actively contributed to a large codebase through Git version control. Created a custom Python parser to visualise function dependencies in the IGOR repository, facilitating onboarding for new team members.
- Leveraged Python for data preprocessing and analysis, including downsampling and outlier removal due to the 10GB of nightly data, streamlining the analysis process. Employed simultaneous fitting techniques to validate data against theoretical models.
- Consistent execution in high-stakes device fabrication within a cleanroom, managing gas systems, cryogenics, and electrical components with precision under pressure.
- Mentored undergraduate and graduate students in data analysis techniques and instrument operation, fostering independence and enhancing lab productivity.
- Presented research findings at international conferences, including Quantropy 2022, 2024, and March Meeting in Las Vegas 2023, communicating complex concepts to diverse audiences.

Research Data Analyst Weber Lab @ BC Children's Hospital Research Institute

📅 January 2021 – August 2021 📍 Vancouver, Canada

- Developed a preprocessing pipeline in Bash for fMRI brain scans, enabling streamlined data handling. Utilised R for data cleaning and modelling, employing linear mixed effects models to analyse changes in fractal dimension across subject categories. Weber-Lab/LRTC_PLOSCComplex

R&D Engineer & Project Lead Jans Composites

📅 April 2020 – December 2020 📍 Antrim, Northern Ireland

- Lead the end-to-end development of a touchless hand washing station, delivering a market-ready product through R&D, strategic supplier sourcing, efficient production management, targeted sales and marketing efforts.

DATA PROJECTS

- Web scraped a liquor store website, performing EDA and feature engineering such as using NLP to cluster the drinks into flavour profiles. Used regression and classification models (gradient boost and random forest) to predict a drink rating. Used evaluation metrics; confusion matrix, ROC curve and learning curve to gain insight into model performance. [johann997/BCL_WebScape](#).
- Developed a Dash app that takes .DXF files and computes quantum properties to streamline device design [johann997/2deg_yodels](#).
- Utilised a water level sensor and Arduino Uno WiFi to transmit sensor data to a PostgreSQL database. I used SQL in Grafana to visualise the data for real-time and remote monitoring.

EDUCATION

M.Sc. Physics University of British Columbia

📅 May 2022 – June 2024

Thesis: Occupation resolved conductance as a test for Kondo correlations in the mixed valence regime of few-electron quantum dots. [johann997/QDEV_masters_thesis](#)

B.Sc. Honours Physics University of British Columbia

📅 Sept 2017 – May 2022

Thesis: Phonon heating: A new method of heating in an entropy measurement.

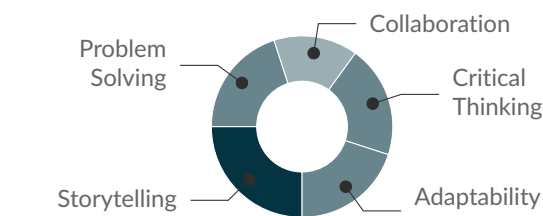
TECHNICAL SKILLS

Python, MATLAB, IGOR
SQL, git, Tableau, \LaTeX
Bash, Arduino
PHP, HTML, R



plotly pandas scikit-learn jupyter
dash WebScraping PostgreSQL

SOFT SKILLS



AWARDS

- 🎓 International Tuition Award
2022, 2023
- 🎓 Dean's Honour List
2018, 2019, 2021, 2022
- 🎓 Rosemary Stewart and Ioan James
Scholarship 2022
- 🏆 Young Enterprise
'Most Sales in Northern Ireland, 2017'

RELEVANT COURSES

- IBM Data Science (Coursera)

INTERESTS

🏃 Running 📰 Current News
🗣️ Language 📖 History
🎵 Music 📊 Data