

JOHANN DRAYNE

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🏠 Berlin, Germany

EXPERIENCE

Research Data Analyst

📍 September 2021 – July 2024

Folk Lab @ Stewart Blusson Quantum Matter Institute

📍 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

📍 January 2021 – August 2021

Weber Lab @ BC Children's Hospital Research Institute

📍 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. Repository: WeberLab/LRTC_PLOSCComplex. Published paper: PLOS Complex systems.

R&D Engineer & Project Lead

📍 April 2020 – December 2020

Jans Composites

📍 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
- 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

University of British Columbia

M.Sc. Physics

📍 May 2022 – July 2024

"Occupation resolved conductance as a test for Kondo correlations in the mixed valence regime of quantum dots".

University of British Columbia

B.Sc. Honours Physics

📍 Sept 2017 – May 2022

SKILLS

Languages Technologies Libraries Core

Python, SQL, Bash, R, MATLAB, Arduino, IGOR, PHP, HTML, C
Tableau, git, conda, Jupyter, Excel, \LaTeX , Docker
scikit-learn, pandas, plotly, dash
Collaboration, Problem Solving, Adaptability, Storytelling, Initiative, Enthusiasm

AWARDS

International Tuition Award

2022, 2023

Dean's Honour List

2018, 2019, 2021, 2022

Rosemary Stewart and Ioan James Scholarship

2022

RELEVANT COURSES

- IBM Data Science (Coursera)
- Tableau for Data Scientists (LinkedIn)