Fraser Parlane, PhD

Data Scientist | Project Manager | Chemist

hello@fraserparlane.com

Vancouver, Canada

Skills

Programming

Python, SQL, Git, shell, HTML, CSS, PHP, JavaScript, Docker, Google Apps Script, MATLAB, Arduino, XML/SVG, LaTeX

Machine Learning

Multiobjective Bayesian optimization, convolutional neural networks, model validation

Data Science

Automated data analysis, parallelized computing, hyperspectral imaging, data pipelines

Environments

Google Cloud Platform, Adobe Creative Suite, SolidWorks, Docker

Packages

Numpy, Pandas, TensorFlow, Scikit-learn, PyTorch, SciPy, GDAL, Plotly/Dash, Matplotlib, Flask, Luigi

Engineering

Optical design, microscopy/photography, circuit design

Awards

Cover art, Digital Discovery	2022
Tech Connect Award	2019, 2022
Fellowship, SBQMI	2016-2022
Fellowship, NSERC	2015, 2016
USRA, NSERC	2012, 2013, 2015

I am a well-rounded data scientist who thrives in research environments. I am naturally outgoing, curious, and an empathetic communicator. My strengths are analytical and visual storytelling, hypothesis-driven experimentation, and fostering collaborative environments. I have domain knowledge of optimization algorithms, numerical simulations, and various machine-learning models. My work has been featured in Nature, Science, and Forbes. Learn more about my experiences at parlane.ca.

PhD, Chemistry | The University of British Columbia   2015-2022

Supervisor: Prof. Curtis P. Berlinguette

Lead, Data Scientist | Project Ada   2018-2022

Led an $8M project that built the world's first autonomous thin-films robotic laboratory. Developed noise-tolerant, multi-objective Bayesian optimization algorithms. Deployed complete scientific software stacks that included robust extract-transform-load (ETL) pipelines, machine-learning models, parallelized cloud-based numerical simulations, and interactive dashboards. Project resulted in 9 publications, >200 citations, and >$1.5M in follow-on funding.

Technical Program Manager, Software Engineer intern | Google   2017

Liaised a 26-person research program (MIT, UBC, U. Maryland) to develop a replicable fusion experiment. Created a dashboard for experimental fusion data that enabled collaborators to make on-the-fly experimental decisions. Open-sourced the reactor modelling software.

Invited Scientist | Stanford Synchrotron Radiation Lightsource   2016

Devised a new way to characterize high-performance solar cells. Improved the performance of solution-processed solar cells by 25%. Redefined a fundamental chemical bond previously misunderstood by the chemistry community.

Lecturer, Teaching Assistant Mentor | TWU, UBC   2015, 2020

Instructed >600 students and mentored 28 teaching assistants in chemistry and visual communication. Achieved >95% favorable course reviews.

BSc, Chemistry | Trinity Western University   2010-2015

Supervisor: Prof. Craig D. Montgomery

Cofounder | TutorTree   2015-2017

Cofounded a tutoring company and hired 5 tutors that mentored secondary and post-secondary students in STEM subjects. Our services were always fully booked.

Researcher | TWU and ENSCM (Montpellier, France)   2010-2015

Designed and built tailored therapeutics for MRI contrast and pharmaceutical applications. Awarded 3 NSERC grants to perform this work.