ROBIN NEWHOUSE

Physics PhD, Software Engineer, Data Scientist

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236-513-0304 · Vancouver, BC
Eligible to work in USA & Canada

Profile

PhD physicist and software engineer developing intelligent data systems and agentic AI workflows. Combining scientific analysis, distributed computing, and machine learning to make technology more autonomous and efficient.

Technical Skills

Languages

Python
C++
Java
JavaScript
SQL

Cloud & Infrastructure

AWS
(RDS | SageMaker | EC2 | S3 | Lambda | Bedrock)
Docker
Linux
GitLab CI/CD

ML & Data Science

TensorFlow
Scikit-learn
Keras
Pandas
NumPy
OpenAI Agents SDK

Experience

Software Engineer (Contract)

July 2025 – Present

Invent

- Designed and implemented a prototype agentic AI system using the OpenAI Agents SDK, enabling dynamic querying of previously unseen structured datasets through autonomous workflow generation
- Delivered a functional backend and lightweight frontend interface for client evaluation and future deployment

Software Engineer

Oct 2022 – July 2025

Amazon Web Services, RDS MySQL and MariaDB Engine Team

- Optimized MariaDB builds for achieving up to 40% higher transaction throughput vs. default community builds
- Automated MySQL corruption cleanup, unblocking hundreds of critical customer upgrades and saving hundreds of engineering hours each month
- Reduced spurious internal system test failures by 80% through automation, debugging, and process optimization
- Implemented robust CI testing pipelines in GitLab for faster regression detection and root-cause isolation
- Spearheaded operational improvements including documentation, tooling, training, and sensitive data protection
- Led AWS's upstream MariaDB contributions, positioning the RDS team as the largest external contributor and improving coordination with the MariaDB Foundation

Experimental Physics PhD

Sep 2016 – Aug 2022

The University of British Columbia & The ATLAS Experiment at CERN's Large Hadron Collider

Contributed to pioneering high-energy physics research and widely-cited publications, focusing on data analysis and machine learning

- Processed petabyte-scale collider data on distributed computing grids, modernizing analyses in Python and C++
- Built deep neural network classifiers for long-lived particle detection, cutting misclassification rates by 95%
- Developed and maintained high-performance data reconstruction software in C++ and ROOT
- Trained 300+ PhD students as lead instructor for the ATLAS Analysis Software Tutorial
- Published in high-impact journals and presented at global conferences

Education

PhD — Experimental Particle Physics

Sep 2016 – Aug 2022

University of British Columbia, Vancouver, Canada – CERN, Geneva, Switzerland
Breakthrough Prize in Fundamental Physics (ATLAS Collaboration, 2025);
ATLAS Outstanding Achievement Award; International Doctoral Fellowship

BSc — Astronomy (Computer Science Minor, Co-op)

Sep 2009 – May 2015

University of British Columbia, Vancouver, Canada
Graduating Class Speaker; Faculty of Science International Student Scholarship;
International Community Achievement Award

Leadership & Outreach

Black Rock Observatory educational non-profit — Board member: 2019 – Present
UBC Physics Graduate Student Association — President: 2017 – 2018
UBC Astronomy Club — President: 2012 – 2014, Lecturer: 2011 – 2015