

Alex Wen

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<https://alexwenym.github.io>

I must understand why things happen.

Education

2017–22 **University of British Columbia (UBC)**
BSc. Candidate, Major in Combined Honours Physics and Mathematics, Minor in History
Year 3 of 5 in 2019-20

Research

2019 **Imperial College London, High Energy Physics** (July - August)
Research Student, LHCb Experiment
Development and analysis of two-sample statistical tests with extreme sensitivities for particle physics analysis (detection of CP violation with matter/antimatter decay asymmetry)

2019 **UBC, Physics Department** (May - June)
Summer Student, ATLAS Experiment
Application of machine learning (hybrid tree-sequence neural networks) to identify rare physics processes (top decays), with large amounts of data

2017- **TRIUMF** (Summer 2017, since then part-time during school year)
Research Assistant, ElectroMagnetic Mass Analyzer (EMMA) Collaboration
Accelerator beam-target reaction & detector Monte Carlo simulations of detector to study nuclear (astrophysical) reactions

2018 **SNOLAB** (May - August)
Research Assistant, New Experiments With Spheres – Gas (NEWS-G) Collaboration
Calibration source simulations, detector simulations, and signal processing to characterize the effect of neutron radiation on the performance of upcoming light dark matter detector

Projects

2019- **UBC Biomedical Engineering Student Design Team**
Machine Learning Engineer
Data processing and classifier training to discriminate between brain EEG signals for home automation applications

Other Work Experience

2019- **UBC, Physics Department**
Physics 100 Course Teaching Assistant

2018-19 **AMS Student Society of UBC**
Physics & Math Tutor

2017-19 **Wesley Music and Arts Academy**
Speech and Debate Instructor

Conferences, Schools, and Symposia

2019 Canadian Undergraduate Physics Conference (McGill)
2019 Canadian Astroparticle Physics Summer School (McDonald Institute/Queen's)
2016 International Summer School for Young Physicists (Perimeter Institute)

Honours and Awards

2018,19 **UBC Trek Excellence Award** ($\times 2$) - *academically top 5% of year and faculty*
2019 **UBC Science Scholar** - *total course average of 90%+*
2019 **UBC Faculty of Science J. Fred Muir Memorial Scholarship**
2019 **UBC Department of Mathematics Stanley M. Grant Scholarship**
2017-18 **UBC Science One Gateway Program Class President**
2017 **TRIUMF High School Fellow**
2017 **SOAR Philanthropic Society Scholarship**

A Collection of Relevant Buzzwords

Particle Physics | Computing | Python | C/C++ | Geometry | Statistics | Machine Learning | Monte Carlo | Phenomenology | Gravity | Astrophysics | Nuclear Physics | Topology | Geant4 | ROOT | PyTorch | TeX | Speech | Debate | Writing | Tutoring | Academia | Table Tennis | Running | Kayaking | Skiing | History | Military | Armoured Fighting Vehicles | Technology | Politics | Society | International Baccalaureate | Liverpool Football Club