

Alex Wen

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<https://alexwenym.github.io>

I'd like to 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 (5 year co-op degree - all of year 4 is a co-op work term)

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)

2017- **TRIUMF** (Summer 2017, since then part-time during school year)
Research Assistant, ElectroMagnetic Mass Analyzer (EMMA) Collaboration
Nuclear calculations and Monte Carlo simulations of detector to study nuclear reactions with astro-physical motivations

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

From research and coursework, I have experience with **C/C++**, **Python** (and most common frameworks, including **PyTorch**), **MATLAB**, **TeX**, **Geant4**, **CERN ROOT**, and the **Linux terminal**. I'm always happy to learn new languages, packages, and frameworks.

I'm also skilled at public speaking, presenting, tutoring, and academic writing.

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**
Teaching Assistant, Physics 100 (*Introductory Physics*) & 216 (*Intermediate Mechanics*)
- 2018-19 **AMS Student Society of UBC**
Physics & Math Group 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**

Relevant Certifications

- 2019 Authorization and Training for Basic Machine Shop Tools (UBC Physics Department)
- 2018 Workplace Tagging and Lockout Procedures (SNOLAB/Vale Mining)

A Collection of Relevant Buzzwords

Particle Physics | Computing | Mathematics | Statistics | Machine Learning | Monte Carlo | Phenomenology | Nuclear Physics | Topology | Theory | Speech | Debate | Writing | Teaching | Table Tennis | Running | Kayaking | History | Technology |