Alex Wen

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https://alexwenym.github.io (personal site & blog)

Education

2017–22	**University of British Columbia** BSc. Candidate, Major in Combined Honours Physics and Mathematics, Minor in History *Year 4 of 5 in 2020-21 (5 year degree w/ co-op)*

Research

2020-	**General Fusion Inc.** (September - present) Plasma Physics Co-op Student *Simulations of compressing magnetized plasmas for design of nuclear fusion reactor*
2020	**University of Toronto & CERN** (May - August) Analysis Student, ATLAS Group *Analysis for reducing uncertainty on measurements of Higgs boson mass. IPP CERN Summer Student; physical work at CERN cancelled due to COVID-19*
2019	**Imperial College London** (July - August) Statistics Research Student, LHCb Group *Development of two-sample statistical tests with sensitivities for detection of CP violation*
2019	**University of British Columbia** (May - June) Machine Learning Student, ATLAS Group *Application of machine learning (hybrid tree-sequence neural networks) to identify rare physics processes (top decays)*
2017-20	**TRIUMF** (Summer 2017, since then part-time during school year) Nuclear Physics Research Assistant, ElectroMagnetic Mass Analyzer (EMMA) Group *Nuclear calculations and Monte Carlo simulations of detector to study astrophysical nuclear reactions*
2018	**SNOLAB** (May - August) Simulations Student, New Experiments With Spheres – Gas (NEWS-G) Group *Detector simulations and signal processing to characterize the effect of neutron radiation on the performance of light dark matter detector*

Experience: **C/C++**, **Python** (and most common frameworks, including Pandas, NumPy, PyTorch, etc.), **MATLAB**, **TeX**, **Geant4**, **CERN ROOT**, and **Unix environments**.

I was a competitive debater for many years. I love presenting my ideas and discussing complex topics.

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. Leading ML tutorials for teammates*

Other Work Experience

2019-20	**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 & Summer Schools

2020	Canadian Undergraduate Physics Conference (Western Ontario)
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)

Awards

2020	**Canada Institute of Particle Physics** CERN Summer Student Fellowship
2018-20	**UBC** Trek Excellence Award ($\times$3) - *academically top 5% of year and faculty*
2019-20	**UBC** Science Scholar ($\times$2) - *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