

Alex Y. Wen

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<https://alexwenym.github.io>

Education

2017–22 **University of British Columbia**
BSc. Candidate, Combined Honours Physics & Math

Research

- 2021 **Institute for Quantum Computing - University of Waterloo, Waterloo, ON** (4 mo. full time)
Undergraduate Research Assistant, Pushin Group; Dmitry Pushin
Characterizing birefringence properties of silicon wafers for neutron interferometer gratings; improving pulse shape discrimination for muon background events in the PROSPECT neutrino detector
- 2020-21 **General Fusion Inc., Vancouver, BC** (8 mo. full time)
Plasma Theory Simulations Student; Aaron Froese
Simulations of compressing magnetized plasmas for nuclear fusion stability conditions
- 2020 **University of Toronto & CERN, Toronto, ON** (4 mo. full time)
IPP-CERN Summer Student, ATLAS Group; Pierre Savard
Analysis for reducing uncertainty on measurements of Higgs boson mass; physical participation at CERN cancelled due to pandemic
- 2019 **Imperial College London, London, UK** (2 mo. full time)
Statistics Research Student, LHCb Group; William Barter
Development of two-sample statistical tests with sensitivities for detection of CP violation
- 2019 **University of British Columbia, Vancouver, BC** (2 mo. full time)
Machine Learning Student, ATLAS Group; Colin Gay, Alison Lister
Application of machine learning (hybrid tree-sequence neural networks) to identify rare physics processes (top decays)
- 2017-21 **TRIUMF - Canada's National Particle Accelerator Centre, Vancouver, BC** (4 mo. full time, since then part-time during school year)
Nuclear Physics Research Assistant, ElectroMagnetic Mass Analyzer (EMMA); Barry Davids
Nuclear calculations and Monte Carlo simulations of detector to study astrophysical nuclear reactions; computational studies of p-nuclei abundances (undergraduate thesis)
- 2018 **SNOLAB - Sudbury Neutrino Observatory, Sudbury, ON** (4 mo. full time)
Simulations Student, New Experiments With Spheres – Gas (NEWS-G); Pierre Goret
Detector simulations and signal processing to characterize the effect of neutron radiation on the performance of light dark matter detector

Projects

2019- **UBC Biomedical Engineering Student Design Team**
Machine Learning Engineer
Data processing & training to classify brain EEG signals

Other Work Experience

- 2019- **UBC Physics Department**
Teaching Assistant: Physics 100 (*Introductory Physics*), 216 (*Intermediate Mechanics*), 157 (*Physics for Engineers*)
- 2018-19 **AMS Student Society of UBC**
Physics & Math Group Tutor
- 2017-19 **Wesley Music and Arts Academy**
Speech and Debate Instructor

Conferences, Schools & Public Talks (materials here: <https://alexwenym.github.io/research.html>)

- 2021 Undergraduate School for Quantum Information Processing (USEQIP) [Institute for Quantum Computing/Waterloo]
- 2020 Canadian Undergraduate Physics Conference (CUPC) [Western Ontario] *Title: "Magnetized Target Fusion"*
- 2020 Summer Student Programme [CERN]
- 2019 CUPC [McGill] *Title: "Machine Learning for Top Tagging at ATLAS"*
- 2019 Canadian Astroparticle Physics Summer School (CAPSS) [McDonald Institute/Queen's]
- 2016 International Summer School for Young Physicists (ISSYP) [Perimeter Institute]

Awards & Grants

- 2021 **Institute for Quantum Computing** Undergraduate Research Award - \$10,000
- 2020 **Canada Institute of Particle Physics** CERN Summer Student Fellowship
- 2019-20 **Canadian Natural Sciences & Engineering Research Council (NSERC)** Undergraduate Student Research Award (USRA) public research grant ($\times 2$) - \$12,000 total
- 2018-20 **UBC** Trek Excellence Award ($\times 3$) - top 5% (top ~100 students out of ~2000) of year and faculty - \$4,500 total
- 2019-20 **UBC** Science Scholar ($\times 2$) - total course average of 90%+
- 2019-20 **UBC Faculty of Science** J. Fred Muir Memorial Scholarship ($\times 2$) - \$570
- 2019 **UBC Go Global** Undergraduate Research Program Award - \$2,000
- 2019 **UBC Mathematics** Stanley M. Grant Scholarship - \$1,500