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 sensitivies 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 Gorel
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*