

# SEAN GHAEI

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## EDUCATION

**University of British Columbia (UBC)**

B.A.Sc. in Engineering Physics, Department of Applied Science

Vancouver, BC

September 2019 – Present

## RESEARCH EXPERIENCE

**UBC Robotics and Control Lab**

May 2023 – August 2023

Machine Learning Research Engineer, Supervisor: Dr. Purang Abolmaesumi

- Developed a tabular transformer for cardiology ultrasound data, harnessing specialized feature embeddings; pre-trained with masked language modeling, achieving an R-squared of 0.96.

**UBC Engineering Physics Project Lab**

September 2022 – Present

Project Engineer, Supervisor: Miti Isbasescu

- Creating a self-resetting wheel robot platform to study simulation to reality transfer of deep reinforcement learning models.

**UBC Quantum Devices Group**

May 2020 – August 2020 Full-Time

Physics Research Engineer, Supervisor: Dr. Joshua Folk

Volunteer Until December 2021

- Designed a low-noise amplification circuit with HEMTs to enhance single-electron tunneling signals and refined the design across two 2-layer PCB iterations for improved stability.

## GRANTS AND AWARDS

**Trek Excellence Scholarship for Continuing Students**

October 2023

- Awarded to domestic students in the top 5% in their undergraduate year, faculty, and school.

**NSERC Undergraduate Student Research Award**

March 2023

- Awarded to conduct machine learning research with the Robotics and Control Lab at UBC.

**University of BC Scholarship**

March 2023

- Awarded by nomination to recognize academic and community contribution achievements.

**NSERC Undergraduate Student Research Award**

February 2020

- Awarded to conduct condensed matter theory research with the Quantum Devices Group at UBC.

**Dean's Honour List**

All Semesters

- Given to students with first-class standing while taking a full-time academic course load.

**High School Valedictorian**

March 2019

- Chosen among graduating class of over 250 seniors based on highest academic standing.

## RELATED PROFESSIONAL EXPERIENCE

**Kardium**

September 2022 – December 2022

Software Systems R&D Engineer Intern

- Redesigned software tools for extracting and processing data from clinical trials through object-oriented programming, optimized for simplicity and bug reduction. Tested with 100% line coverage.

**Motion Metrics**

May 2022 – August 2022

Full-Stack and Cloud Software Engineer Intern

- Individually developed and deployed application to centralize company records management, with automated client profiles to optimize sales and product development tracking to aid engineers.

**Cascadia Carbon**

January 2021 – April 2021

Full-Stack Software Engineer Intern

- Increased product sales by 24% by deploying a new sales platform and company website. Grew mobile userbase by 30% after redesigning the iOS application architecture.

**TEACHING EXPERIENCE****UBC**

January 2024 – April 2024

PHYS158 (E&amp;M) Teaching Assistant

- Preparing and conducting weekly tutorials. Assisting with grading.

**UBC Engineering Undergraduate Society**

September 2023 – Present

Volunteer Tutor

- Created exam revision material, taught first year engineering students.

**UBC Physics Circle High School Outreach**

September 2019 – April 2020

Volunteer

- Created problem sets translating graduate level physics concepts, such as [Hawking radiation](#), to be accessible at a high school level of mathematics.

**Sean Ghaeli Tutoring**

May 2019 – August 2019

Private Tutor

- Supported high school and incoming university students with tutoring in STEM subjects. Created [eight lecture series](#) featured on my personal website.

**VOLUNTEER EXPERIENCE****UBC Physics Circle High School Outreach**

September 2023 – Present

Program Director

- Took the lead to drive youth engagement in physics education at UBC, targeting underrepresented demographics. Broke participation records through strategic promotion.

**UBC Applied Science**

Shad Dinner — Volunteer Presenter

July 2023

- Presented my research to the Shad summer camp cohort to bolster interest in UBC Engineering.

Engineering Physics High School Outreach — Volunteer

January 2023

- Showcasing projects and answering questions about UBC Engineering to prospective students.

APSC Open House — Volunteer Coordinator

November 2022 and 2023

- Guided and oversaw the management of 20+ volunteers, ensuring smooth event operations.

**UBC Applied Science**

September 2020

Orientation Leader

- Guided incoming UBC engineering students through virtual orientation events and distributed resources and advice for undergraduate academic success.

*Last updated on January 1<sup>st</sup>, 2024.*