Joshua Himmens

Engineering Physics Student

joshua@himmens.com | 587-434-0118 | himmens.com | linkedin.com/in/joshua-himmens | github.com/joshuah143

Technical Skills

- **Machine Learning**: TensorFlow, Keras, PointNet, Weights and Biases (wandb), ONNX, Azure ML
- **Embedded Programming**: Experienced with FreeRTOS on TMS570, RP2040, ESP32, and STM32
- **Software Development**: Rust, C, C++, Python, Java, MATLAB, Bash, Git
- **Particle Physics**: Root, CERN grid compute, Athena

Education

University of British Columbia   **Vancouver, BC, Canada**
Bachelor of Applied Science at Engineering Physics   Sep 2023 – May 2028
- First-year average of 92% (A+)
- Working knowledge of English and French

Work Experience

AltaML
Associate Machine Learning Developer   Jan 2025 – Apr 2025
- Developed machine learning models using Scikit-learn to save the Government of Alberta >**$4 million** annually.
- Created training pipelines using Azure ML and Azure App Service.
- Worked with fine-tuned LLM's, classical ML, and OpenAI models.

TRIUMF
ATLAS Deep Learning Research Student   May 2024 – Feb 2025
- Developed panoptic segmentation models for the ATLAS detector using the PointNet ML framework with Wandb, TensorFlow, Keras.
- Used CERN's grid computing to parallelize compute across thousands of nodes.
- Worked independently to develop models using cutting edge transfer learning approaches.

UBC Orbit Satellite Design Team
Command and Data Handling (CDH) Lead and Firmware Developer   Oct 2023 – Present
- Led the CDH team to develop software to meet mission and testing objectives from ESA (European Space Agency) for the ALEASAT project.
- Managed a team of **16** firmware developers, with over **$15 000** worth of technical infrastructure.
- Developed mission testing, function testing, and acceptance testing procedures to meet ESA and ECSS standards.
- Programmed device drivers and electrical ground support equipment (EGSE).

Elections Alberta
Elections Officer   Jan 2023 – Dec 2023
- Integrated as part of a team to run a safe and fair provincial election.
- Managed public interactions and vote counting.

Publications and Presentations

Developing Machine Learning Techniques for Particle Flow in the ATLAS Experiment
Canadian Astroparticle Physics Summer Student Talks Competition (CASST 2024)   Jun 2024
- Placed 2nd of 44 presentations

JetPointnet: A Machine Learning Approach to Cell-to-Track Attribution in the ATLAS Experiment
Canadian Undergraduate Physics Conference   Oct 2024

3D Particle Flow in the ATLAS Calorimeter: How to Train Your Model
TRIUMF Science Week   May 2024

ALEASAT ESA "Fly Your Satellite!" Training Week Presentation
European Space Agency's ESEC-GALAXIA (Transinne Belgium)   Mar 2024

Honors and Awards

Hector J. MacLeod Award ($2000)
Issued by *IEEE Vancouver Section*   Apr 2024
- Awarded to students who have demonstrated pioneering efforts in their chosen field of study and attained high scholastic honours.

Erich Vogt First Year Summer Research Experience (FYSRE) Award
Issued by *UBC Department of Physics and Astronomy*   May 2024
- Awarded to promising students in physics for a 4-month research placement.

Alberta Centennial Award and Alberta Premier's Citizenship Award ($2000)
Issued by *Government of Alberta*   May 2023
- Awarded for outstanding community service.

Calgary Flames Foundation Community Involvement Scholarship ($2005)
Issued by *Education Matters*   Aug 2023
- Awarded for community involvement.

Julia Turnbull Leadership Award for exceptional community service ($1000)
Issued by *The Calgary Foundation*   Jul 2023
- Awarded for exceptional community service.

Ted Rogers Entrance Scholarship ($2000)
Issued by *Rogers Communications*   Jun 2023
- Awarded for academic achievement.

Leadership and Advocacy

Highly Qualified Personnel (HQP) Advisory Committee Member
Arthur B McDonald Astroparticle Physics Institute   Canada (remote)
Jan 2024 – Present
- Worked with members across Canada to develop opportunity lists for students and recent graduates.
- Shared McDonald Institute opportunities with eligible HQP in BC and Alberta.

Advisory Team Member
Child Rights Connect   Geneva, Switzerland (remote)
Jan 2021 – Dec 2023
- Provided guidance to UN delegations on communication strategies for high-level rights goals.
- Presented to governments and consulted on international initiatives to support the UN Convention on the Rights of the Child.
- Created and edited content on human and child rights in the Americas.
- Attended the 3rd Pan American Child and Youth Forum in Cartagena, Colombia with the Government of Canada.

Additional Experience

- **Quantum School for Young Students** (University of Waterloo and Institute for Quantum Computing): Participant in intensive quantum computing program
- **Introduction to Quantum Computing** (IBM): Participant in 8-month course using IBM's quantum infrastructure
- **Scientific Computing with Python certification** (freeCodeCamp): 300 hours of training