LEVI KEAY

INTRODUCTON

Levi graduated from the **University of British Columbia (UBC)**, with a BSc. major in **Physics** in 2022. He took a year off from studying in 2020/21 to work full time in the UBC department of Forestry in the Integrated Remote Sensing Studio (graduate research lab), where he applied his **Python** programming skills to develop new **Image Processing** and **Computer Vision** algorithms in order to detect forest harvest using high cadence **satellite optical imagery** (publication in progress). Levi is a effective communicator and enjoys collaborating with teammates. He has strong **leadership** and **interpersonal** skills developed in part through his extensive work experience in junior athlete development and the restaurant and food delivery service industries.

SKILLS

Technical/Python libraries

- Data visualization (Matplotlib, Plotly)
- Computation (Numpy, Multiprocessing, Threading)
- Geospatial analysis (Gdal, Rasterio, Shapely)
- Computer vision libraries (OpenCV)
- Experiment design and hypothesis testing

Advanced Math and Physics:

- Partial Differential Equations, Vector Calculus
- Computational Physics
- Electromagnetism
- Advanced Classical Mechanics
- Statistical Mechanics

WORK HISTORY

Research Assistant, 09/2020 to 05/2022

Integrated Remote Sensing Studio - UBC Faculty of Forestry, Vancouver, BC

- Levi designed and implemented algorithms using Python to detect forest harvest using CubeSat optical sensor data. He used open source Python libraries for geospatial operations (GDAL, rasterio, shapely), timeseries analysis (Numpy, Ruptures), and optimization (Numpy, Multiprocessing and Threading) reducing runtimes by 90%.
- He wrote the manuscript describing methods, results and limitations of the algorithm. Collaborating with other lab members, Levi is first author on the research paper that will be submitted for publication later in 2022.

Fulltime Summer Internship (**Monitoring Forest Change with Satellite Imagery)**, 05/2020 to 09/2020

Integrated Remote Sensing Studio - UBC Faculty of Forestry, Vancouver, BC

- Downloaded, processed, and conducted analysis of radiometric calibration of Planet Satellite imagery for use in colleagues' research
- Levi automated the image download process from Planet server using python, saving the colleagues hours of time
- Levi authored and edited funding applications and reports.

Teaching Assistant, 08/2020 to 10/2020

Experimental Physics Laboratory, PHYS 309 - UBC Faculty of Physics and Astronomy

- Levi designed and implemented a Python interface (PyAudio, Numpy, Threading) to audio hardware devices allowing students to conduct at-home experiments measuring Johnson Noise in resistors during covid-necessitated transition to online learning
- He clearly documented the solution and tested it on multiple computer operating systems to ensure full portability and troubleshot all issues prior to product release.

Alpine Ski Coach, 09/2014 to present, winter seasons.

Grouse Mountain Tyee Ski Club – Vancouver, BC

- Levi directed on snow and dryland training sessions for teams of 30-40 athletes aged 12-13 to improve athletic abilities specific to alpine ski racing.
- He collaborated with other coaches to set and maintain a safe training environment.

EDUCATION

Bachelor of Science in Physics, **University of British Columbia**: 2022

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