Michael Wang

LinkedIn: https://www.linkedin.com/in/michael-wang-52446b338/

Personal Website: https://michaelgarfield2357.github.io/

(403) 852-8768

hwang210@student.ubc.ca

EDUCATION

University of British Columbia, Vancouver

SEPTEMBER 2024 - CURRENT

B.Sc. Combined Physics and Computer Science 2nd year.

Cumulative average: 91.2

Expected graduation: 2029

SKILLS

COMMUNICATION AND TEAMWORK

Fluent in two languages (English and Mandarin Chinese) and can speak and understand French.

Leader and co-founder of Rockridge badminton team and club; coordinated meetings with the coaches and organized events. Planned and collaborated on advertising for the club.

Collaborated on the satellite project with a large club of around 100 people. Communicated effectively with team leaders and asked for clarifications when needed.

Collaborated on a Falling Sand-style game with three other collaborators; coordinated meetings, debugged issues, and planned future development of the game.

PHYSICS AND LABORATORY

Experienced with the use of IC components, logic gates, breadboard, Arduino, and multimeter.

Competent at data analysis, least-squares fitting, error analysis with chi-squared and t-score, as well as writing lab reports using Jupyter notebook (Phys 119).

Experienced in data analysis using Python, determining uncertainties, debugging circuits using oscilloscopes, and designing experiments (Phys 229).

COMPUTATIONAL

Programming languages: Python, Java, Racket, C++, and some C experience.

Self-taught Python and Java programming languages; worked with object-oriented programming concepts as well as abstraction.

Experienced with graphs, recursion, tree traversal, basic data structures and algorithms, and some experience with numerical integration techniques such as Verlet and Runge-Kutta.

Experienced with software design principles and designing expandable program structures.

AWARDS

May 2025| Dean's Scholar

Graduating students and students promoted to 2nd, 3rd, or 4th year class standing with an average of 90.0% or better in the previous Winter Session

June 2024 | BC Achievement Scholarship'

Given to the 8,000 graduates with the top academic achievement in the province.

June 2024 | Rockridge Distinguished Scholarship

Given to the top 2-4 students in the graduating class

August 2021 | First Class Honours with Distinction

RCM Level 8 Theory

July 2021 | First Class Honours

RCM Level 8 Piano

RELEVENT COURSES

MATH 223 – Proof based linear algebra.

MATH 217 - Multivariable and Vector Calculus.

CPSC 210 – Software construction.

CPSC 213 - Introduction to Computer Systems.

CPSC 221 - Basic Algorithms and Data Structures.

PHYS 229 – Intermediate Experimental Physics II.

PERSONAL PROJECTS AND EXPERIENCES

UBC Orbit satellite design team

Advertised for the club during the IEEE 2025 conference that took place at UBC in Vancouver.

Part of the AOCS subteam; collaborated on the simulation framework ALEASIM, which simulates the satellite's systems as well as the environment using Python. Worked on simulating static and dynamic imbalance in the reaction wheels and debugged issues with the magnetorquer moments.

Experienced with version control tools such as git and github/gitlab. Effective use of NumPy and Matplotlib, and experienced with documentation.

Neural network and machine learning

Researched the gradient descent with momentum algorithm. Built a Python program from scratch that implements the algorithm and solves the XOR classification problem with 97% accuracy.

3D rendering pipeline

Developed two variations of a 3D rendering pipeline – both implemented from scratch using Python with Pygame.

Implemented occlusion using algorithms such as the Painter's algorithm. Implemented basic shading and lighting. Improved rendering speed by using the .obj file format for storing 3D objects.

Physics simulations

Made a multiplayer online 2D pool game using Python with the game development framework Pygame. Implemented 2D collisions between particles.

Rigid body and spring simulation implemented using Verlet integration and Python.

Global illumination research project

Interpreted papers and articles on the radiance cascades algorithm for global illumination and implemented the algorithm from scratch in a game project.

Improved effective debugging skills for faster pinpointing of issues in the code and algorithms. Devised plans for implementing algorithms.

AM radio project

Made a small AM radio from scratch. Utilized efficient oscilloscope skills and physics knowledge to debug the circuit. The final product was able to tune into CBC News.

Knowledgeable about RC, LRC, and amplifier circuits.

Todo tracker project

Built a Todo tracker using Python and Pygame for graphics. Worked on implementing software design principles such as modularity and abstraction in the project.

Designed and implemented a coordinate system for each of the components shown on the screen.

PHYS 106 – Introduction classical mechanics and relativity.

PHYS 108 -Introduction to electricity and magnetism.

PHYS 200 - Relativity and Quanta.

CPSC 121 - Physical and mathematical structures of computation.

ABOUT ME

In my free time, I like to play lots of sports, especially outside. I enjoy playing badminton, golf, and skiing in the winter. Growing up in Calgary, I had the great pleasure of skiing at Calgary Olympic Park, and now, moving to Vancouver, Whistler Blackcomb has become one of my favorite ski resorts. Besides skiing in winter, when the weather's warm enough – a rarity in Vancouver given that it rains pretty much all year round - I enjoy getting out onto the water for sailing. I think nothing quite beats the feeling of riding the waves and the unique feeling of being surrounded by water and away from everything else. Besides sports and activities outside, I also enjoy playing the piano and sometimes drawing.