Howard Li

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EDUCATION

University of British Columbia, Vancouver   *Sep 2021 - Present*

Bachelor of Applied Science - Major in Engineering Physics | Average: 94% (3.97 / 4.0 GPA) | Graduation: May 2026.

SKILLS

Programming Languages: Python, Java, C/C++, HTML, CSS, JavaScript, Vite, SQL, Bash, MATLAB.

Python Libraries: NumPy, SciPy, Matplotlib, Beautiful Soup, OpenCV, LMFIT, Keras.

Computer Software: Git/GitHub, Linux, Visual Studio (Code), Gradle, Docker, Microsoft Office (Word, Excel, Teams), Zoom, WordPress, SOLIDWORKS, Autodesk AutoCAD/Inventor, Onshape. Highly proficient in LaTeX.

Electrical & Mechanical: Soldering, oscilloscopes, signal generators, multimeters, circuit simulation/analysis, STM32 microprocessors, 3D printing.

WORK EXPERIENCE

Undergraduate Research Assistant   Vancouver, Canada
Quantum Devices & Ultrafast Coherent Control Group, UBC Physics & Astronomy   *May 2024 - Aug 2024*

o   Utilized Python libraries (Matplotlib, LMFIT) in conjunction with Microsoft Excel to perform non-linear regression on physical signals, employing and making decisions based on statistical tests.

o   Aided in the setup and execution of low-temperature optical experiments with liquid (superfluid) helium, clearly communicating technical information to supervisors and suggesting improvements for sources of experimental error.

o   Improved existing programs and wrote new data analysis scripts, optimizing code to speed up data processing by ~70%.

Learning Hub Rover   Vancouver, Canada
UBC Centre for Teaching, Learning, and Technology   *Jan 2023 - April 2023*

o   Assisted UBC faculty and students alike in solving technical issues related to teaching software, ensuring client satisfaction and managing multiple tasks simultaneously via strong organizational and interpersonal skills.

o   Updated technical documentation and guides for the UBC GitHub service using Microsoft Word and WordPress.

o   Supported end-users via a mix of Microsoft Teams, phone, email, and Zoom, resolving issues in a timely manner.

TECHNICAL PROJECTS

Japanese Language-Learning Blog (*https://jouzunare.neocities.org/*)   Vancouver, Canada
HTML/CSS/JS + Vite, Web/UI Design, Website Hosting, Version Control   *Jul 2024 - Present*

o   Designed and hosted a website made using HTML/CSS/JS and Vite, covering topics related to Japanese language acquisition.

o   Refined the website layout to maximize visual presentation and navigability, featuring a toggleable light/dark mode.

o   Gained valuable experience troubleshooting and designing web content, working with Markdown, JSON, etc.

Machine Learning Virtual Robot   Vancouver, Canada
Python, Neural Networks, Computer Vision & Graphics   *Sep 2023 - Dec 2023*

o   Implemented color recognition, edge detection, etc. via OpenCV and NumPy, working with the Linux kernel and Bash.

o   Trained a convolutional neural network (Keras) to perform optical character recognition, accurately identifying characters despite blurry image data, images taken at odd angles, etc.

o   Placed 3rd in a cumulative robot competition featuring ~20 teams through optimized testing and efficient teamwork.

Autonomous Tape-Following Robot   Vancouver, Canada
C/C++, Embedded Systems, Lab Equipment, Manufacturing Tools   *Jun 2023 - Aug 2023*

o   Programmed and tested a PID control loop and IR signal detection routine for STM32 microprocessors and Arduino boards.

o   Increased robot driving speed by over 3x via rigorous tuning and optimization of operational code, in C/C++.

o   Gained significant hands-on experience with 3D printers, heat guns, soldering irons, oscilloscopes, digital multimeters, etc.

For more details relating to technical projects, my portfolio is available here.