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, VHDL.

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

Computer Software: Git/GitHub, Linux, Visual Studio (Code), FPGAs, 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***

- 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.
- 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.
- 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***

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

- Designed and hosted a website made using HTML/CSS/JS and Vite, covering topics related to Japanese language acquisition.
- Refined the website layout to maximize visual presentation and navigability, featuring a toggleable light/dark mode.
- 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***

- Implemented color recognition, edge detection, etc. via OpenCV and NumPy, working with the Linux kernel and Bash.
- Trained a convolutional neural network (Keras) to perform optical character recognition, accurately identifying characters despite blurry image data, images taken at odd angles, etc.
- 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***

- Programmed and tested a PID control loop and IR signal detection routine for STM32 microprocessors and Arduino boards.
- Increased robot driving speed by over 3x via rigorous tuning and optimization of operational code, in C/C++.
- 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.