William Jh Cheng

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Computer Science Major at the University of British Columbia

SKILLS

Languages: Python, Java, JavaScript/TypeScript, Scala, R, C++, C, C#, SQL, PHP, HTML/CSS, Assembly Language

*Frameworks***:** PyTorch, NumPy, SciKitLearn, Node.js, Express.js, React.js, Spring Framework, Apache Kafka, Akka

Software/Environment: Jupyter, Amazon Web Services, Kubernetes, Docker, Firebase, Oracle Database, Jenkins, Github Actions, Gradle, Android Studios, Unity, Unix, Selenium, LabView

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EDUCATION

B.Sc (Bachelor of Science), Major in Computer Science (**GPA**: 93% for 4 years)   (2020 – 2025)
University of British Columbia, Vancouver, BC, Canada
Science Scholar/Dean's Honour List (2020 – 2024)

International Baccalaureate (IB) Diploma   (2017 - 2020)
Western Canada High School, Calgary, Alberta, Canada

RESEARCH EXPERIENCE

Independent Studies supervised by Dr. Mi Jung Park (CPSC 448)   (May 2024 - Present)
University of British Columbia, Vancouver, BC, Canada
- Research proposal – Exploring reconstruction attacks and differential privacy in machine learning, machine unlearning, and generative modelling, including areas in deep neural network training and image generations.
- PyTorch coding for transfer learning techniques, convolutional neural networks, and vision transformers.

UBC Machine Learning Research Club   (February 2024 – Present)
University of British Columbia, Vancouver, BC, Canada
- Conducted research with fellow peers on latent manifolds with image generation models, such as GAN and Diffusion Models, with applications in fashion.

TECHNICAL WORKING EXPERIENCE

Undergraduate Teaching Assistant for CPSC 304 (Relational Databases)   (July 2024 - August 2024)
University of British Columbia, Vancouver, BC, Canada
- Mentored students in SQL, Oracle, REST API, JavaScript, PHP, and relational database design.
- Hosted tutorials and office hours to clarify complicated concepts and provide guidance for the students' group projects.
- Collaborated with the professor and other TAs to refine the course structure, resulting in clearer material for students and for grading.

Software Engineer Co-op (May 2023 – December 2023)

Planview, Vancouver, BC, Canada

- Executed end-to-end full-stack development with React.js as frontend and Spring framework and Akka as backend.
- Designed and implemented GitHub Action workflows for enhanced automation, performance, and maintenance, improving application build times from an average of 20 minutes to 8 minutes.
- Led data migration efforts by refactoring frontend and backend with AWS databases such as AWS Redshift for enhanced compatibility and concurrency, resulting in a 35% improvement in overall API performance.
- Developed well-documented REST endpoints and effective streaming with Kafka.
- Contributed to Planview's Hackathon training a Large Language Model to parse Datadog Logs and offer solutions from Confluence.

Undergraduate Teaching Assistant for CPSC 210 (Software Construction) (September 2023 – December 2023)

University of British Columbia, Vancouver, BC, Canada

- Mentored students in Java, object-oriented programming, abstraction, debugging, and design patterns.
- Facilitated hands-on coding labs and hosted office hours to guide students in the right direction.
- Demonstrated effective communication by leading a lab, clarifying complicated concepts, and collaborating with other TAs and the professor.

Software Automation Engineer/Developer Co-op (January 2022 – August 2022)

Delta-Q Technologies, Burnaby, BC, Canada

- Improved the efficiency of regressions by 30% by developing an essential tool for a centralized test automation system with Python, LabView, and RESTful API.
- Developed and maintained software and hardware tools with Hardware-In-Loop to allow automation of test scripts.
- Learned about communication protocols such as CANOpen, MODBUS, J1939, and HTTP.
- Ran automation regressions after every software release and troubleshooted failed test cases.

Junior Software Tester (May 2021 – September 2021)

Rentrax Software Inc, Vancouver, BC, Canada

- Analyzed user stories and use case requirements for validity and feasibility.
- Applied quality engineering principles throughout the Agile product lifecycle.
- Supported product documentation through technical support and edited user manuals.
- Provided timely solutions for software defects and postproduction issues.

PERSONAL PROJECTS

IntroInvert: An Android Chat Application with Google Firebase Backend (January 2022 – May 2023)

Personal Android Java Project

- Utilized XML, Gradle, and binding features to allow Java Activities to interact with layout designs.
- Used asynchronous functions to develop multiple user connections between the application and Firebase database.
- Developed authentication for accounts and used tokens to process the user activity via Share Preferences.

Kitchen Nightmares: Unity 2D Game for Itch.io's 2022 - 2024 GMTK Game Jam (July 2022 – July 2024)

Game Developer

- Applied skills from Unity and C# to build a game with a team environment in under 48 hours.
- Developed the main game mechanics, scripts, and GUI for every scene.
- Managed version-control files to review the source code of the game.

DigiBOP: a Java Music Studio program   (February 2021 – April 2021)
Personal Java Course Project
- Applied abstraction to form clear and concise code.
- Utilized external libraries such as JFugue and Swing for back-end and GUI construction.
- Evaluated systematic problems in code with Unit Tests and provided debugging solutions.

MapSquad.org: Mapathon Website made from HTML/CSS and JavaScript.   (May 2020 – September 2021)
Website Designer and Technical Leader
- Helped organize computer networks for online collaboration and coordinated mapping events to improve mapping data for areas at risk.
- Communicated with non-profit leaders and users through online chat and surveys.

ACHIEVEMENTS AND LEADERSHIP EXPERIENCE

UBC Trek Excellence Scholarship for Continuing Students and Dean of Science Scholarship   (2021 - 2023)

UBC Presidential Scholars Award and UBC Tuum Est Experiential Award   (2020-2024)

Western Canada High School Geography Club • *Club Leader*   (September 2018 – June 2020)
- Facilitated weekly meetings and the Canadian Geographic Challenge and International Geography Olympiad.

The Royal Conservatory of Music First Class Honours with Distinction for Piano level 10 (RCM)   (2010- 2017)