Vincent Chau

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EDUCATION

University of Tokyo
Exchange Student, Computer Science
Fall 2026 | Tokyo, Japan

University of Washington
B.S., Computer Science
Expected Dec. 2026 | Seattle, WA | GPA: 4.0

Coursework: Machine Learning, Deep Learning, Artificial Intelligence, Natural Language Processing, Data Structures, Algorithms, Systems Programming, Distributed Systems, Computer Security

EXPERIENCE

Outerport (YC S24) | Machine Learning Engineer Intern
Sep. 2025 – Dec. 2025 | Tokyo, Japan; San Francisco, CA

- Engineered a modular **VLM** experimentation framework (**15 models x 100+ configurations**), driving production model and prompt decisions
- Replaced manual scoring of diagram detection outputs with a graph-based system using stable matching and graph edit distance, improving throughput **50x**
- Productionized a **YOLO** detection model achieving **0.76 COCO AP**, enabling client-facing inference visualization

University of Washington | Undergraduate Researcher
Jul. 2023 – Present | Seattle, WA | Advisor: Prof. Brian J. Beliveau

- Built a scalable **Python** pipeline using **Pandas** and **NumPy** to process **hundreds of GB** of genomic data, optimizing performance through **parallelization** and **vectorized operations** for a **150x** speedup
- Developed a genomic sequence binding KNN classifier in **scikit-learn**, achieving **97% accuracy** and **39x** prediction speed compared to the traditional computational approach
- Shipped a search-driven data visualization tool in **React 17** and **Material UI X** to display matching regions from genomic sequence queries as heatmaps

Bellevue College | Teaching Assistant (Fundamentals of Computer Science)
Mar. 2023 – Jun. 2023 | Bellevue, WA

- Identified critical **remote code execution** and **SQL injection vulnerabilities** in a **PHP**-based homework grading platform used by **200+** students and implemented solutions to mitigate risks

PROJECTS

Rankinator | Music Game Level Classification Model

- Drove development of an audio spectrogram-based **transformer** classifier in **PyTorch** leveraging OpenAI's Whisper architecture, delivering a **0.95 F1 score** to automate quality assessment of game levels
- Conducted detailed experimentation with ablation studies on feature embeddings to understand model biases and improve generalization, leading to a **7% increase in accuracy** over the baseline performance

MaiHome | Arcade Machine Emulator

- Recreated the arcade game *maimai* with Arduino hardware emulation and software to replicate system behavior
- Reverse engineered undocumented binaries to uncover encryption keys and system functionality
- Developed an **Express.js** and **C++** toolchain to decrypt and parse custom file formats for **1,000+** users

SKILLS

Technologies: Python, C/C++, Java, JavaScript, Bash, Git, Node.js, React, Next.js, PyTorch, NumPy, Pandas
Languages: English (Native), Mandarin (Proficient), Cantonese (Proficient), Japanese (JLPT N3)