MASUMI YANO

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EDUCATION

UNIVERSITY OF WASHINGTON TACOMA — Tacoma, WA
Computer Science & Systems — June 2025
Advisor Chris Marriott (cmarriot@uw.edu), Martine De Cock (mdecock@uw.edu)
Dean's List Autumn 2023
Dean's List Winter 2024

Green River Community College — Auburn, WA
Computer Science — June 2023
Dean's List Winter 2022
Dean's List Spring 2022
Dean's List Summer 2022
Dean's List Fall 2022
Dean's List Winter 2023

AWARDS AND HONORS

Outstanding Undergraduate Researcher (University of Washington Tacoma), 2024

TECHNICAL SKILLS

Probability, Calculus, Linear Algebra, Python, Machine Learning library (PyTorch, TensorFlow, etc.)

RESEARCH EXPERIENCE

Privacy Preserving Machine Learning Lab (PPML Lab) — Tacoma, WA
Undergraduate Researcher, School of Engineering & Technology (September 2024 – Present)

Led collaborative research with UW Tacoma School of Nursing to develop machine learning models predicting insulin injection side effects. Implemented and optimized algorithms such as logistic regression, random forest, Cat boost, SVC, etc. to achieve AUC scores exceeding 83% (paper in preparation).

Collaborated with PhD students from PPML lab to designed and implement an efficient computer vision model for encrypted ImageNet classification. Achieved 95% accuracy using 2 CNN layers and 1 dense layer.

Currently competing in IEEE SaTML competition on reverse engineering synthesized tabular data, working with PhD researchers to develop reconstruction algorithms for identifying original data from diffusion model outputs.

Research Apprenticeship — Tacoma, WA
Undergraduate Researcher, School of Engineering & Technology — (September 2024– Present)

Led weekly research discussions with Prof. Marriott focusing on landmark Computer Vision papers, progressing from foundational architectures (AlexNet, ResNet) to advanced generative models (GANs), developing critical analysis and research evaluation skills.

Participated in academic peer review process by assisting with conference paper reviews to develop research evaluation and scholarly critique.

Attended CVPR 2024 conference under faculty mentorship, engaging with state-of-the-art research and expanding professional network in the field.

COMPETITION

Large Language Model Capture-The-Flag (LLM CTF) — Online
(January 2024 – May 2024)

Participate in the Competition with PhD student from PPML lab to generate LLM defense system to secure the secrete from the attackers.

Led OpenAI team and created prompt against defense LLM system by utilizing a few shots prompting, roll playing system prompt.

CIFAR-10 Image Classification — Online
(April 2024 – June 2024)

Collaborating with PhD students from PPML lab, designed and trained classification models for the FHERMA.io privacy preserving machine learning challenge using homomorphic encryption.

EXTERNAL AND INTERNAL FUNDING

CVPR 2024 Conference Funds:
University of Washington Tacoma; Tacoma, WA
PI: Chris Marriot
July 2024: $810

RESEARCH INTERESTS

Computer Vision
Vision Language Model
Generative AI

PROFESSIONAL EXPERIENCE

University of Washington Tacoma — Tacoma, WA

Research Assistant, School of Engineering & Technology — (July 2024– September 2024)

Successfully migrated earthquake particles simulation codebase from FISH to Python, overcoming scoping problem of FISH and improving code readability while maintaining functionality.

Developed documentation for FISH manual for future reference.

Optimized particle tracking and graphing capabilities in Python, enhancing the performance and maintainability of civil engineering research simulations.

Green River Community College — Auburn, WA

Tutor, MESA — (December 2022–June 2023)

Provided one-on-one tutoring in Computer Science, Mathematics, and Physics for over 20 students at sophomore and freshman levels. Result in consistent grade improvements of 0.4+ points.

Developed personalized homework assignments and implemented whiteboard brainstorming to enhance student understanding and problem-solving capabilities.

REFERENCES

Martine De Cock (mdecock@uw.edu)
Chris Marriott (cmarriot@uw.edu)