Yuheng Wang

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Education

University of Washington, BS in Mathematics, Computer Science — Sept 2023 – May 2027

- GPA: 3.91/4.0
- **Coursework:** Linear Algebra, Probability, Optimization, Deep Learning, Software Design & Implementation, Natural Language Processing, Math Analysis

RESEARCH EXPERIENCE

Researcher Assistant, Raivn Lab - University of Washington, Seattle, US — Sep 2025 – Now

- Work on image and video generation systems with a focus on representation learning and tokenization for generative models.
- Build and scale training and evaluation pipelines on multi-GPU clusters, with attention to efficiency and scalability.
- Explore and prototype reference-aware modeling strategies for generative architectures.

Researcher Assistant, Institute of Computing Technology, Chinese Academy of Sciences – Beijing, China — Jul 2023 – Aug 2023

- Developed sign language recognition models for AR/VR scenarios to enhance user interaction.
- Implemented and evaluated deep learning pipelines for gesture recognition.

Researcher Assistant, Institute of Automation, Chinese Academy of Sciences – Beijing, China — Jan 2021 – Aug 2022

- Developed and implemented LSTM-based models for sign language recognition.
- Built gesture recognition pipelines using Python and deep learning frameworks, leveraging MediaPipe for keypoint extraction.

Project

Tokenizing with References — Sep 2025 – Now

Allen Institute for AI (AI2) | Raivn Lab, University of Washington

Built a reference-aware tokenization framework for image and video generation to overcome limitations of discrete tokens. Designed and implemented a Wan-based backbone with attention to reference frames, enabling continuous tokenization and hierarchical token routing. Trained and evaluated models on large-scale video datasets, achieving faster decoding and improved reconstruction efficiency over baseline approaches.

Pedestrian Button Detection and Direction Classification — Mar 2025 – Jun 2025

University of Washington

Developed a two-stage deep learning pipeline for pedestrian button detection and crossing direction classification using YOLOv8 and CNN/Transformer backbones. Built and annotated a custom dataset, and applied HiResCAM to visualize attention and analyze model behavior.

github.com/Arrokothwh/Push-Button-Heroes-Instant-Crosswalk-Button-Recognition

Technologies

Languages: Python, Java, C, JavaScript, TypeScript, MATLAB

Technologies: PyTorch, TensorFlow, Distributed Training, Computer Vision, Generative Models, Transformer Architectures, Data Pipelines