

Wenbo (Paul) Yang

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EDUCATION

University of Waterloo

Waterloo, Ontario, Canada

*PhD. in Electrical and Computer Engineering (overall GPA: 98.57, in progress),
Certificate in University Teaching (completed)*

Sept. 2021 –

- **Research Interests:** Image Degradation Modeling, Image Quality Assessment, Image Enhancement and Restoration, Medical Image Processing, Image Processing and Computer Vision in general.
- **Courses taken:** Digital Signal Processing, Image Processing and Visual Communication, Intelligent Systems Design, Optimization, Applied Functional Analysis, Theory of Probability I & II, Preparing for University Teaching, Preparing for an Academic Career, Teaching Practicum

City University of Hong Kong

Hong Kong SAR

BSc. in Computer Science (First Class Honours, overall GPA: 3.93/4.30)

Sept. 2017 – Jul. 2021

WORK EXPERIENCES

Intern Researcher (Part-time)

Waterloo, Ontario, Canada

IMAX Corp. (Waterloo Office), formerly SSIMWAVE Inc. May. 2024 – Apr. 2025, Jan. 2022 – Apr. 2022

- Develop a Video Quality Assessment model for AI-generated videos, achieving a 0-to-1 progress
- Improve a real-time video super-resolution & enhancement model, achieving a 0-to-1 progress for the team
- Improve an efficient video frame interpolation model for consumer use, satisfying the requirements of artists
- Assist in organizing industrial codebase, modularizing 4+ functionalities
- Develop a 360° Image Quality Assessment model based on SSIMPlus, creating a new market opportunity
- PyTorch programming for Image and Video assessment tasks, clearing several years-old legacy code

Teaching Assistant (Part-time) & Guest Lecturer (Occasional)

Waterloo, Ontario, Canada

Department of E&CE, University of Waterloo

Jan. 2022 – Present

- Conducting tutorials for undergraduate courses, obtaining 4.7/5.0 ratings from students in average
- Assisting in labs sessions, answering students' and other TAs' programming questions regarding C
- Grading assignments and exams
- Delivering guest lectures as a replacement lecturer, receiving compliments from other faculty members

Research Assistant (Part-time → Full-time)

Hong Kong

Department of Accountancy, City University of Hong Kong

Jul. 2018 – Aug. 2021

- Extract information from noisy database and financial documents, enabling a professor to find insights and publish multiple papers
- Perform Semantic analysis of online comments collected from multiple platforms, one of the first computational linguistic applications in the field of accountancy
- Database organization, management and analysis, improving the efficiency of data processing by more than 8x
- Provide technical consultation for professors and RAs and program utilities for them, simplifying the workflow of a research team, reducing the labour cost by 90%

IT Placement Programmer (Full-time Internship)

Hong Kong

Fuji Xerox (Hong Kong) Limited

Jun. 2019 – Mar. 2020

- Program for industrial computer automation projects using .Net, speeding up the development process by 4x
- Manage database and tune on exiting SQL scripts for performance, improving the efficiency several times.

TECHNICAL SKILLS

Languages: English, Hokkien, Mandarin and Cantonese

Programming: Python+PyTorch (*used daily*), C(*Best among all ECE TAs*), NumPy, LaTeX, Typst(*Best among ECE TAs*), SQL (*1st in class*), "old" C++, Django, Java, HTML, CSS, JavaScript, Bash

Tools and Skills: Basic Linux System Managements (pacman, apt, systemd, etc., I am the *de facto* sysadmin in my research lab), Git, Vim(*Best among my research lab*)

PUBLICATIONS

- [1] W. Yang, E. Rezk, W. M. Moursi, and Z. Wang, “Automated Disentangling Analysis of Skin Colour for Lesion Images,” in *Proceedings of the the International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 2026.
- [2] W. Yang, Z. Wang, and Z. Wang, “Towards a Universal Image Degradation Model via Content-Degradation Disentanglement,” in *2025 International Conference on Computer Vision (ICCV)*, 2025. doi: [10.1109/MMSP61759.2024.10743968](https://doi.org/10.1109/MMSP61759.2024.10743968).
- [3] W. Yang, S. Shin, and Z. Wang, “Whole-Slide Image Compression and On-Demand Viewing using Reference-Based Super-Resolution,” in *Proceedings of the Annual Conference on Vision and Intelligent Systems (CVIS)*, Dec. 2025.
- [4] S. Karmani, T. Sivakaran, G. Prasad, M. Ali, W. Yang, and S. Tang, “KPCA-CAM: Visual Explainability of Deep Computer Vision Models Using Kernel PCA,” in *2024 IEEE 26th International Workshop on Multimedia Signal Processing (MMSP)*, 2024, pp. 1–5. doi: [10.1109/MMSP61759.2024.10743968](https://doi.org/10.1109/MMSP61759.2024.10743968).
- [5] Z. Wang, R. Zhou, S. Athar, W. Yang, and Z. Wang, “Boosting Image Quality Assessment Performance: Unsupervised Score Fusion by Deep Maximum a Posteriori Estimation,” in *ICASSP 2024 - 2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2024, pp. 3940–3944. doi: [10.1109/ICASSP48485.2024.10447233](https://doi.org/10.1109/ICASSP48485.2024.10447233).

PREPRINTS

- [6] W. Yang, Z. Wang, J. Xu, J. Zhou, and Z. Wang, “Unifying Image Quality Assessment Datasets: MOSAIQ-500K and MOSAIQ-Bench.” [Online]. Available: <https://arxiv.org/abs/2609.20247>