Anbang Wang

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Wang Anbang | Aawangas

Hong Kong SAR, China

Research Interest

My research interests primarily focus on computer vision and machine learning. Specifically, I am particularly interested in developing fundamental methods to fully leverage large-scale world knowledge. My recent interests are particularly centered on 3D vision.

Education

- **The Hong Kong University of Science and Technology** *2023/9 - 2027/9 (expected)*
  BSc in data science and technology Hong Kong SAR, China
  - GPA: 4.028/4.3 (top 2%)
- **École Polytechnique Fédérale de Lausanne** *2026/2 - 2026/7 (expected)*
  Exchange Program in Computer Science section Lausanne, Switzerland

Publications

- **Geometric-Guided Few-Shot Dental Landmark Detection with Human-Centric Foundation Model** *MICCAI 2025*
  Anbang Wang*, Marawan Elbatel*, Keyuan Liu, Lizhuo Lin, Meng Lan, Yanqi Yang, Xiaomeng Li
  * *Equal contribution.*
- **ReasonNav: Human-Inspired Global Map Reasoning for Zero-Shot Embodied Navigation** *Under review*
  Yuzhuo Ao*, **Anbang Wang***, Yu-Wing Tai, Chi-Keung Tang
  * *Equal contribution.*

Projects

- **ReasonNav: Human-Inspired Global Map Reasoning for Zero-Shot Embodied Navigation** *2025/06-2025/09*
  Advised by Prof. Chi-Keung Tang And Prof. Yu-Wing Tai
  - Developed ReasonNav, a framework that leverages MLLMs for global reasoning and a deterministic planner for local navigation, creating a novel reason-then-act paradigm.
  - Enabled unified, zero-shot navigation across diverse tasks (object, image, text goals), eliminating the need for task-specific fine-tuning or reinforcement learning.
  - Demonstrated superior performance over existing methods in efficiency and reliability.
- **Geometric-Guided Few-Shot Dental Landmark Detection with Human-Centric Foundation Model** *2024/12 - 2025/03*
  Advised by Prof. Xiaomeng Li [GitHub]
  - Engineered a novel few-shot learning framework (GeoSapiens) by creatively adapting a human-centric foundation model (Sapiens) for a challenging medical imaging task.
  - Innovated a novel geometric loss function that encodes anatomical structural priors, significantly improving the model's robustness and precision in low-data scenarios.
  - Achieved state-of-the-art (SOTA) results, outperforming the previous leading method by 8.18% in Success Detection Rate (SDR) at the clinically-critical 0.5mm precision threshold.
- **Unsupervised Domain Adaptation for 3D Bone Reconstruction from 2D X-rays** *2024/09 - 2024/11*
  Advised by Prof. Xiaomeng Li
  - **Investigated** the challenge of domain shift in 3D bone reconstruction by building a baseline model utilizing the Pixel-Aligned Implicit Function (PiFU) framework.
  - **Implemented** a state-of-the-art unsupervised domain adaptation (UDA) algorithm to enhance the model's generalization capabilities across different X-ray datasets.
  - **Aimed to improve** reconstruction accuracy and robustness on out-of-domain data without requiring costly new annotations from the target domain.
- **Knowledge Distillation on Skin Lesion Segmentation** *2024/01 - 2024/09*
  Advised by Prof. Albert C. S. Chung [GitHub]
  - **Developed** a lightweight segmentation model for skin lesions by designing and implementing a knowledge distillation (KD) pipeline.
  - **Engineered** a student-teacher framework where knowledge from a large, complex model was effectively transferred to a compact student network.

Honors and Awards

- **HKUST Scholarship for Continuing Undergraduate Students (highest band)**
- **UROP research travel sponsorship**
- **Dean's List for all semesters**

Teaching Experience

- **Teaching Assistant of COMP 2711, Discrete Math and its Applications in Computer Science** *2024/09 - 2024/12*
  HKUST, CSE department
  - **Assist** weekly tutorial sessions for undergraduate students, clarifying core concepts in logic, set theory, graph theory, and combinatorics.
  - **Provided** regular one-on-one guidance, helping students debug complex proofs and master challenging assignment problems.

Academic Engagement and Service

- **Reviewer**, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2026
- **Attendee**, International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), , Daejeon, Republic of Korea, Oct 2025

Skills

- **Programming Languages** Python (Proficient), C/C++ (Proficient)
- **Frameworks & Libraries** PyTorch, NumPy, Pandas, Scikit-learn, OpenCV
- **Developer Tools & OS** Git, GitHub, Linux, LaTeX
- **Languages** Mandarin (Native), English (Fluent - IELTS 7.5/9.0)