

HAN YANG

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EDUCATION

University of Pennsylvania

Exchange in School of Engineering and Applied Science

Aug. 2023 - Dec. 2023

PA, USA

- Cumulative GPA: **4.000**/ 4.000
- Advanced Courses:
Computer Graphics; Natural Language Processing; Applied Machine Learning

The Chinese University of Hong Kong (CUHK)

B.Sc. in Computer Science

Sep. 2021 - Present

Hong Kong SAR, China

- Cumulative GPA: **3.899**/ 4.000
- TOEFL iBT: 104/120
- Honors and Awards:
Arthur and Louise May Memorial Scholarship (2023); Yasumoto International Exchange Scholarship (2023);
The KY Young and CK Ma Memorial Scholarship (2023); Professor Omar Wing Memorial Scholarship (2022);
ELITE Stream Scholarship (2022, 2023); Dean's List (2022, 2023); Honors at Entrance Scholarship (2021)

RESEARCH INTEREST

Multi-modal learning, Embodied AI.

PUBLICATIONS

Yuncong Yang*, **Han Yang***, Jiachen Zhou, Peihao Chen, Hongxin Zhang, Yilun Du, and Chuang Gan, Snap-Mem: Snapshot-based 3D Scene Memory for Embodied Exploration and Reasoning, In submission to *International Conference on Learning Representations*, 2025

Han Yang, Kun Su, Yutong Zhang, Jiaben Chen, Kaizhi Qian, Gaowen Liu, and Chuang Gan, UniMuMo: Unified Text, Music, and Motion Generation, In submission to *the AAAI Conference on Artificial Intelligence*, 2025

Han Yang*, Tianyu Wang*, Xiaowei Hu, and Chi-Wing Fu, SILT: A Shadow-aware Iterative Label Tuning Approach for Learning to Detect Shadows from Noisy Labels, In *Proceedings of the IEEE/CVF International Conference on Computer Vision*, 2023

RESEARCH EXPERIENCE

Lifelong scene memory for embodied exploration and reasoning

supervised by Prof. Chuang Gan, UMass & MIT-IBM Watson AI Lab

May 2024 - present

MA, USA

- Proposed a snapshot-based scene representation that uses a set of informative images to represent scenes.
- Integrated with frontier-based exploration to facilitate active exploration with VLMs.
- Designed an incremental memory construction pipeline and a memory retrieval mechanism for lifelong memory.
- Achieved state-of-the-art performances on embodied question-answering and lifelong navigation benchmarks.

Unified generative model for music, motion and language

supervised by Prof. Chuang Gan, UMass & MIT-IBM Watson AI Lab

May 2023 - May 2024

MA, USA

- Able to perform conditional generation tasks on any combination of music, motion, and text.
- Adopted dynamic-time-warping to align unpaired music and motion and synthesize large-scale data.
- Employed a joint codebook for encoding music and motion and performed music-motion joint generation.
- Reduced computation demands by only requiring fine-tuning existing music and language models.

Shadow detection with self-training on noisy training data

supervised by Prof. Chi-Wing Fu, CUHK

May 2022 - Feb 2023

Hong Kong SAR, China

- Designed a self-training framework to train a shadow detection network and refine the noisy training data
- Proposed data augmentation methods to enhance the network's understanding of shadow
- Relabeled and refined the test set of SBU-shadow dataset
- Surpassed previous state-of-the-art methods by large margins, *i.e.*, reduced Balanced Error Rate from 5.58 to 4.18.

EXTRA-CURRICULAR ACTIVITIES

- Won Honorable Mention Award in 2022 Mathematical Contest in Modeling.

SKILLS

Languages

Mandarin (native), English

Programming

Python, PyTorch, C/C++, Java, html, L^AT_EX