HAORAN TANG

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EDUCATION

University of Pennsylvania *May 2023*
Master of Science in Engineering, Robotics GPA: 3.97/4.0
Master's Thesis: "Navigating the Task Manifold" (Prof. Pratik Chaudhari)

University of Illinois at Urbana-Champaign *May 2021*
Bachelor of Science, Computer Engineering GPA: 3.73/4.0
Minor in Mathematics

EXPERIENCE

Research Intern, Generative AI *June 2023 - Nov 2023*
Baidu USA Sunnyvale, CA

· Develop new anime whole-body dataset with rich annotations including clothing identities, as well as new tasks for diffusion-based personalization.
· Modify LDM architecture to retrieve information from multiple reference images, and propose a new metric to measure the flexibility of generations using VQA models.

Research Assistant, Multitask Learning *September 2022 - Present*
University of Pennsylvania, Prof. Pratik Chaudhari Philadelphia, PA

· Explore the low-dimensionality of multiple tasks in the prediction space as a manifold.
· Embed the task trajectories as more informative foundation priors for transfer learning.

Research Assistant, Autoencoders *May 2022 - Present*
University of Pennsylvania, Prof. Jianbo Shi Philadelphia, PA

· Investigate non-parametric multi-resolution hash tables as intermediate layers of autoencoders.
· Study near-convolutional properties of hash functions such as translational invariance.

Research Assistant, Contrastive Learning *June 2021 - May 2023*
University of Illinois at Urbana-Champaign, Prof. Yuxiong Wang Champaign, IL

· Design systematic corruption to investigate the dependency of contrastive learning on spatial inductive bias.
· Explain the higher dependency of CL than SL with feature space analysis and extensive ablations.

PUBLICATIONS AND PREPRINTS

Retrieving Conditions from Reference Images for Diffusion Models
Haoran Tang*, Xin Zhou*, Jieren Deng, Zhihong Pan, Hao Tian, Pratik Chaudhari aXiv

Contrastive Learning Relies More on Spatial Inductive Bias Than Supervised Learning: An Empirical Study
Yuanyi Zhong*, Haoran Tang*, Junkun Chen, Yuxiong Wang ICCV 2023

HashEncoding: Autoencoding with Multiscale Coordinate Hashing
Lukas Zhornyak*, Zhengjie Xu*, Haoran Tang*, Jianbo Shi arXiv

Shuffle Augmentation of Features from Unlabeled Data for Unsupervised Domain Adaptation
Changwei Xu*, Jianfei Yang*, Haoran Tang, Han Zou, Cheng Lu, Tianshuo Zhang arXiv

Bi-Adversarial Discrepancy Minimization for Unsupervised Domain Adaptation on 3D Point Cloud
Haoran Tang, Changwei Xu, Jianfei Yang   IJCNN 2021

SERVICE

Conference Reviewer	CVPR (2022 – 2024), ECCV (2022), ICCV (2023)
Teaching Assistant	CIS 6800 Advanced Topics in Machine Perception, University of Pennsylvania

SKILLS

Programming Languages	Python, C++
Tools/Softwares	PyTorch, Scikit-Learn, Git, SSH, Jupyter Notebook, VS Code
Operating Systems	Linux, Mac OS, Windows