Curriculum Vitae

Dongting Hu

Pronouns: he
Email: timmy11hu@gmail.com
Website: `https://timmy11hu.github.io/`

Education

Sep 2014— Jun 2018
Degree: Bachelor of Engineering in Mechanical Engineering
Where: Donghua University, Shanghai, CN
GPA: 82.3/100

Mar 2019— Jan 2020
Degree: Graduate Diploma in Data Science
Where: The University of Melbourne, Victoria, AU
GPA: 84.9/100 (H1)

Mar 2020— Jul 2021
Degree: Master of Science in Data Science
Where: The University of Melbourne, Victoria, AU
GPA: 83.8/100 (H1)

Sep 2021— Dec 2025
Degree: Doctor of Philosophy in Science
Where: The University of Melbourne, Victoria, AU
GPA: -
Principle Supervisor: Dr Mingming Gong
Co-supervisor: Dr Liuhua Peng, Dr Tingjin Chu

Research Interests

My research interest lies in advanced topics in computer vision and generative models. During my PhD, I focused on 3D vision, including the development of methodologies for robust depth estimation and efficient 3D rendering and editing. Currently, my interests have shifted toward generative models, with a particular focus on their applications in efficient generation, centered around foundation model training and distillation. This includes large-scale text-to-image synthesis, as well as video and 3D content creation.

Work Experience

Aug 2024— Current
Position: Research Intern
Where: Creative Vision, Snap Inc., Santa Monica, USA
My work focuses on efficient multimodal generative models, with an emphasis on developing high-resolution text-to-image foundation models optimized for mobile devices. This includes data preparation, architecture design, pre-training foundational models, cross-architecture knowledge distillation, step distillation, and on-device deployment. I have enabled high-quality image generation on mobile devices within seconds, and my work has been adopted in production systems and leveraged for downstream task development.

Publications

- SnapGen: Taming High-Resolution Text-to-Image Models for Mobile Devices with Efficient Architectures and Training.
  D. Hu, J. Chen, X. Huang, H. Coskun, A. Sahni, A. Gupta, A. Goyal, D. Lahiri, R. Singh, Y. Idelbayev, J. Cao, Y. Li, K.-T. Cheng, S.-H. Chan, M. Gong, S. Tulyakov, A. Kag, Y. Xu, J. Ren.
  Conference on Computer Vision and Pattern Recognition (CVPR) 2025 Highlight.

- Stochastic Diffusion: A Diffusion Probabilistic Model for Stochastic Time Series Forecasting.
  Y. Liu, S. Wijewickrema, **D. Hu**, C. Bester, S. O'Leary, J. Bailey.
  Knowledge Discovery and Data Mining (KDD) 2025.

- Lifting 2D Diffusion Prior for 3D Object Removal via Tuning-Free Latents Alignment.
  D. Hu, H. Fu, J. Guo, L. Peng, T. Chu, F. Liu, T. Liu, M. Gong.
  Advances in Neural Information Processing Systems (NeurIPS) 2024.

- Multiscale Representation for Real-Time Anti-Aliasing Neural Rendering.
  D. Hu, Z. Zhang, T. Hou, T. Liu, H. Fu, and M. Gong.
  International Conference on Computer Vision (ICCV) 2023.

- Uncertainty Quantification in Depth Estimation via Constrained Ordinal Regression.
  D. Hu, L. Peng, T. Chu, X. Zhang, Y. Mao, H. Bondell, and M. Gong.
  European Conference on Computer Vision (ECCV) 2022.

- Towards Evaluating the Robustness of DNNs for Query-Limited Black-box Scenario.
  R. Liu, K. Lam, W. Zhou, S. Wu, J. Zhao, **D. Hu**, M. Gong.
  IEEE Transactions on Multimedia.

- AniFaceDiff: Animating Stylized Avatars via Parametric Conditioned Diffusion Models.
  K. Chen, S. Seneviratne, W. Wang, **D. Hu**, S. Saha, M. Hasan, S. Rasnayaka, T. Malepathirana, M. Gong, S. Halgamuge.
  Pattern Recognition.

- MF-VITON: High-Fidelity Mask-Free Virtual Try-On with Minimal Input.
  Z. Wan, Y. Xu, **D. Hu**, W. Cheng, T. Chen, Z. Wang, F. Liu, T. Liu, M. Gong.
  Preprint.

- ProtoGS: Efficient and High-Quality Rendering with 3D Gaussian Prototypes.
  Z. Gao, **D. Hu**, J. Bian, H. Fu, Y. Li, T. Liu, M. Gong, K. Zhang.
  Preprint.

- Probabilistic Modelling of Disparity Uncertainty for Robust and Efficient Stereo Matching.
  W. Cai, **D. Hu**, R. Yin, H. Fu, J. Deng, W. Yang, M. Gong.
  Preprint.

Teaching

Aug 2020— Dec 2023

Position: Teaching Assistant
Where: The University of Melbourne, Victoria, AU

I served as a casual tutor at the School of Mathematics and Statistics, where I assisted with labs, workshops, invigilation, and marking for several courses. My responsibilities spanned undergraduate subjects, including MAST20005 (Statistics) and MAST30025 (Linear Statistical Models), as well as postgraduate subjects such as MAST90082 (Mathematical Statistics), MAST90104 (Statistical Learning), and MAST90138 (Multivariate Statistics).

Professional Services

- Conference Reviewer: NeurIPS (2025), ICCV (2025), KDD (2025), CVPR (2025), ICLR (2025), ECCV (2024), BMVC (2025, 2024, 2023), ECAI (2025, 2024, 2023), AJCAI (2025, 2024, 2023)
- Journal Reviewer: TIST, Neural Networks, Frontiers in Computer Science

Academic Talks

- "Uncertainty Quantification in Depth Estimation via Constrained Ordinal Regression", AI TIME, Dec 7, 2022 (online)

Honors and awards

- Melbourne Research Scholarship (2021-2025)
- Science Abroad Travelling Scholarship (SATS), 2023

Technical Skills

- Programming Language: Python, R, JavaScript, C, Java, SQL, MATLAB,
- Framework/Software: Pytorch, Tensorflow, CUDA, Jax, WebGL, Swift CoreML