Tiantian Wang

Curriculum Vitae

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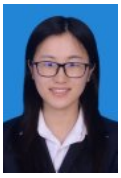
https://tiantianwang.github.io/



EDUCATION

2018 - Present: Ph. D. University of California, Merced, CA, USA.

Research Focus: Free-Viewpoint Human Video Generation with Diffusion Model; Novel View Synthesis & Animated Human with Neural Radiance Fields (NeRFs) & Gaussian Splatting, Video Matting.

Advisor: Ming-Hsuan Yang in Electrical Engineering and Computer Science.

2015 - 2018: M. S. Dalian University of Technology, Dalian, China.

Research Focus: Salient Object Detection.

2011 - 2015: B. S. Dalian University of Technology, Dalian, China.

RESEARCH EXPERIENCE

Research Intern **Stability AI**, *San Francisco, California, CA, USA*, *Mar 2024 - Present.*

Research Focus: **Photo-Realistic 4D Human Video Generation with Diffusion Model.** Generate 360-degree coherent human videos from a single image using a stable video diffusion model for global correlations and neural networks for key conditions. Factorize self-attention across space, views, and time for robust 4D modeling.

Mentor: Chun-Han Yao, Mallikarjun Byrasandra, Varun Jampani.

Research Intern **Snap Research**, *Los Angeles, CA, USA*, *Aug 2021 - Mar 2022.*

Research Focus: **Human Performer Stylization.** Enable 4D human video stylization through a unified framework for style transfer, novel view synthesis, and human animation. Dual NeRFs jointly model the human subject and surrounding scene, allowing stylized animation across diverse poses and viewpoints.

Mentor: Xinxin Zuo, Fangzhou Mu, Jian Wang.

Research Intern **Meta Reality Lab**, *Sausalito, CA, USA*, *Jan 2021 - July 2021.*

Research Focus: **Neural Representation Learning of Human Body.** Develop a user-controlled model for unseen poses by integrating multi-frame observations. Human pose captures body shape, point clouds provide fine details, and a temporal transformer ensures coherence across keyframes, enabling realistic reconstruction of novel poses.

Mentor: Nikolaos Sarafianos, Tony Tung.

Research Intern **Adobe Research**, *San Jose, CA, USA*, *May 2019 - Aug 2019.*

Research Focus: **Deep Video Matting.** Improve temporal coherence in video matting using Consistency-Regularized Graph Neural Networks (CRGNN). CRGNN corrects pixel errors by relating adjacent frames, while consistency regularization enforces coherence in alpha and foreground predictions across frames.

Mentor: Brian Price, Joon-Young Lee, Ning Xu, Scott Cohen.

PUBLICATION

[Ongoing Work] Tiantian Wang, Chun-Han Yao, Mallikarjun Byrasandra, Ming-Hsuan, Yang, Varun Jampani. Photo-Realistic 4D Human Video Generation with Diffusion Model. Target **CVPR2025**.

[15] Tiantian Wang, Xinxin Zuo, Fangzhou Mu, Jian Wang, Ming-Hsuan Yang. Towards 4D Human Video Stylization. In arXiv 2023.

[14] Tiantian Wang, Nikolaos Sarafianos, Ming-Hsuan Yang, Tony Tung. Neural Rendering of Humans in Novel View and Pose from Monocular Video. In arXiv 2022.

[13] Tiantian Wang, Sifei Liu, Yapeng Tian, Kai Li, Ming-Hsuan Yang. Video Matting via Consistency-Regularized Graph Neural Networks. In **ICCV** 2021.

[12] Tiantian Wang, Yongri Piao, Xiao Li, Lihe Zhang, Huchuan Lu. Deep Learning for Light Field Saliency Detection. In **ICCV** 2019.

[11] Yi-Wen Chen, Yi-Hsuan Tsai, Tiantian Wang, Yen-Yu Lin, Ming-Hsuan Yang. Referring Expression Object Segmentation with Caption-Aware Consistency. In **BMVC** 2019.

[10] Tiantian Wang, Lihe Zhang, Shuo Wang, Huchuan Lu, Gang Yang, Xiang Ruan, Ali Borji. Detect Globally, Refine Locally: A Novel Approach to Saliency Detection. In **CVPR** 2018.

[9] Xiaoning Zhang*, Tiantian Wang*, Jinqing Qi, Huchuan Lu, Gang Wang. Progressive Attention Guided Recurrent Network for Salient Object Detection. In **CVPR** 2018. (* denotes equal contributions).

[8] Tiantian Wang, Ali Borji, Lihe Zhang, Pingping Zhang, Huchuan Lu. A Stagewise Refinement Model for Detecting Salient Objects in Images. In **ICCV** 2017.

[7] Tiantian Wang, Lihe Zhang, Huchuan Lu, Chong Sun, Jinqing Qi. Kernelized Subspace Ranking for Saliency Detection. In **ECCV** 2016.

[6] Lihe Zhang, Jie Wu, Tiantian Wang, Pingping Zhang, Ali Borji, Huchuan Lu. A Multi-Stage Refinement Network for Salient Object Detection. **IEEE Transactions on Image Processing**, vol. 29, pp. 3534-3545, 2020.

[5] Lihe Zhang, Jiayu Sun, Tiantian Wang, Yifan Min, Huchuan Lu. Visual Saliency Detection via Kernelized Subspace Ranking with Active Learning. **IEEE Transactions on Image Processing**, vol. 29, pp. 2258-2270, 2020.

[4] Wenlong Guan, Tiantian Wang, Jinqing Qi, Lihe Zhang, Huchuan Lu. Edge-Aware Convolution Neural Network Based Salient Object Detection. **IEEE Signal Processing Letters**, vol. 26, no. 1, pp. 114-118, 2019.

[3] Lihe Zhang, Xiang Fang, Hongguang Bo, Tiantian Wang, Huchuan Lu. Deep Multi-Level Networks with Multi-Task Learning for Saliency Detection. **Neurocomputing**, vol. 312, pp. 229-238, 2018.

[2] Dakhia Abdelhafid, Tiantian Wang, Huchuan Lu. A Hybrid-Backward Refinement Model for Salient Object Detection. **Neurocomputing**, vol.358, pp. 72-80, 2019.

[1] Dakhia Abdelhafid, Tiantian Wang, Huchuan Lu. Multi-scale Pyramid Pooling Network for Salient Object Detection. **Neurocomputing**, vol. 333, pp. 211-220, 2019.

PATENT

Animatable Neural Radiance Fields from Monocular RGB-D Inputs. Tiantian Wang, Nikolaos Sarafianos, Tony Tung. US Patent 20240104828A1, 2024

TEACHING EXPERIENCE

Teaching Assistant:	Electrical Engineering and Computer Science, University of California, Merced, CA, USA.
Fall 2018	CSE165: Introduction to Object Orient Program.
Spring 2019	CSE021: Introduction to Computing II.
Fall 2019	CSE175: Introduction to Artificial Intelligence.

PROFESSIONAL SERVICE

Conference Reviewer:	International Conference on Learning Representations (ICLR).
	Neural Information Processing Systems (NeurIPS).
	Conference on Computer Vision and Pattern Recognition (CVPR).
	Association for the Advancement of Artificial Intelligence (AAAI).
	Winter Conference on Applications of Computer Vision (WACV).
	European Conference on Computer Vision (ECCV).
	International Conference on Computer Vision (ICCV).
Journal Reviewer:	IEEE Transactions on Visualization and Computer Graphics (TVCG).
	International Journal of Computer Vision (IJCV).
	IEEE Transactions on Neural Networks and Learning Systems (TNNLS).
	IEEE Transactions on Multimedia (TMM).

AWARD

Graduate Dean's Dissertation Fellowship, *2024.*

Third Place (3rd), *1st International Workshop and Challenge on People Analysis: From Face, Body and Fashion to 3D Virtual Avatars (ECCV 2022).*

Outstanding Reviewer of CVPR 2021.

Excellent Postgraduate of Dalian City, 2018.

Excellent Postgraduate of Dalian University of Technology, 2017.

Excellent Graduate of Dalian University of Technology, 2015.

TECHNICAL SKILL

Language:	Python, MATLAB, C/C++, LATEX.
Framework:	Pytorch, Caffe, Tensorflow.
Other Tools:	Vim, Git.

REFERENCE

Ph.D. Advisor:	Ming-Hsuan Yang, Professor, University of California, Merced.
	mhyang@ucmerced.edu.