

Junming (Leo) Chen

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Education

University of California, Berkeley, <i>M.Eng. CS</i>	Aug.2024 – May.2025
University of California, San Diego, <i>Exchange Student CS; GPA: 4.0/4.0</i>	Mar.2023 – Jun.2023
Northeastern University, <i>B.E. Honors Software Engineering; GPA: 3.95/4.0</i>	Sep.2020 – Jun.2024

Industry Experience

Machine Learning Engineer Intern DreamFlow Inc. - San Francisco, CA	Apr.2024 – Jul.2024
<ul style="list-style-type: none">• Worked as the primary contributor of a real-time audio-driven talking face video generation system. Designed and implemented the neural network architecture under the Diffusers framework.• Directed the model training process and hyperparameter tuning through extensive experimentation to optimize the model's performance, enhancing the quality of generated videos.• Created substantial value for the startup. Collaborated effectively to delivered a audio-driven real-time pipeline for generating high-fidelity talking avatars.	

Research Experience

Computer Vision & GenAI Research Assistant BAIR, UC Berkeley	Aug.2024 – present
3DHM: Synthesizing Moving People with 3D Control	
Computer Vision & GenAI Research Assistant Fusion Lab, Fudan University	Jan.2024 – Apr.2024
<i>ECCV 2024</i> (Co-First authored) <i>Champ: Controllable and Consistent Human Image Animation with 3D Parametric Guidance</i>	
<ul style="list-style-type: none">• Introduced a Controllable and Consistent Human Video Generation Framework by leveraging a 3D human parametric model within the diffusion model. Integrated a graphics pipeline that enables highly controllable editing on 3D humans.• Enhanced 3D pose alignment and motion guidance by leveraging the unified representation of varying conditions offered by the SMPL model, significantly improving the capture of realistic human movements and shapes compared to baselines.• Collected and produced a diverse human dancing dataset, significantly enhancing the model's capability to generalize complex motions and diverse scenes.	
Computer Vision & Graphics Research Assistant Université Laval	Jul.2023 – Oct.2023
Learning High Dynamic Range NeRF from Dual Cameras; Advisor: <i>Prof. Jean-François Lalonde</i>	
<ul style="list-style-type: none">• Proposed a Neural Radiance Field based framework to reconstruct the 3D spatially-varying HDR lighting for indoor scenes.• Design a rendering pipeline for object insertions in HDR NeRF, which both lits scene and casts reasonable shadows.	
Computer Vision & Graphics Researcher UC San Diego	Apr.2023 – Jul.2023
Creating 3D Virtual Dataset for Indoor Scenes; Advisor: <i>Prof. Manmohan Chandraker</i>	
<ul style="list-style-type: none">• Present a novel iterative approach for completing mesh's 3D part segment with only interactive 2D prompt point.	

Publications

Champ: Controllable and Consistent Human Image Animation with 3D Parametric Guidance	<i>ECCV 2024</i>
<i>Shenhao Zhu*, Junming Leo Chen*, Zuozhuo Dai, Qingkun Su, Yinghui Xu, Xun Cao, Yao Yao, Hao Zhu, Siyu Zhu.</i>	

Opensource Projects

Champ: Human Video Generation	🔗 4.3K ★
<ul style="list-style-type: none">• A Controllable and Consistent Human Video Generation Framework, implemented in Diffusers.	
Torrey: PBR Render Engine	🔗
<ul style="list-style-type: none">• A Path Tracer built only on C++ std library. Support many PBR materials and lights. Implement various rendering algorithms, covering Multiple Importance Sampling, Bounding Volume Hierarchies, Image-based Lighting, Texture mapping, Mip mapping, etc.	

Technical Skills, Awards

Languages: Python, C++, C, Java, Shell, LaTeX, Markdown.

Technologies: PyTorch, Diffusers, Accelerate, Blender, Numpy, Pandas, sklearn, OpenCV, OpenGL, Docker, Git

Awards: UC Berkeley Ning Fellowship (\$50K, highest)