

# XIN CHEN

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## ABOUT ME

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I'm a Research Scientist T10 at Tencent, working with [Dr. Gang Yu](#) for Generative AI. I obtained my Ph.D. from [Chinese Academy of Sciences](#), advised by [Prof. Jingyi Yu](#). Before that, I was supervised by [Prof. Youyi Zheng](#) at ShanghaiTech University, working on 3D modeling.

My research interests focus on Computer Vision for Graphics. I have a great passion on new things and new ideas, my goal is to create Generative AI which is about humans, used for humans, and benefits humans.

## RESEARCH INTERESTS

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|----------------------------|-----------------------------|------------------|------------------|
| • <b>Generative AI</b>     | Multi-modal Language Models | 3D AIGC          |                  |
| • <b>Computer Vision</b>   | Human Performance Capture   | Motion Synthesis | View Synthesis   |
| • <b>Computer Graphics</b> | Image-based Modeling        | Neural Avatar    | Neural Rendering |

## EDUCATION

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Ph.D Degree, Computer Science		2018-2022
	University of Chinese Academy of Sciences	
Master Student, Computer Science		2016-2018
	ShanghaiTech University	
B.Sc, Electronic Information Science	Rank: 1/172	2012-2016
	Qingdao University of Technology	

## EXPERIENCE

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Conference/Journal Reviewer	CVPR, ICCV, AAAI/ TPAMI, TIP, IJCV, TMM, ...	Jan. 2020 to Present
Research Scientist	Tencent - QQ Image Lab	Feb. 2022 to Present
Research Scientist Intern	Tencent - Youtu Lab	Dec. 2020 to Mar. 2021

## PROJECTS

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- **3D AIGC for Digital Avatar and Textured Mesh.** Feb. 2022 to Present  
Proposed a text-to-texture framework for creating diverse avatar appearances and a text-to-shape model, Michelangelo, to generate 3D objects using diffusion models. Accepted to [NeurIPS'23](#).
- **Human Motion Generation via Language/Diffusion Models.** Feb. 2022 to Present  
Introduced **MotionGPT**, a unified motion-language model to learn the semantic coupling and generate both motions and languages on multiple motion tasks. Accepted to [NeurIPS'23](#). Presented **Motion-Latent-Diffusion**, a fast and high-quality motion diffusion model. Accepted to [CVPR'23](#).
- **Human Shape/Motion Reconstruction for Clothed Avatars.** Dec. 2018 to Apr. 2022  
Built a **Dome System using 80 cameras** for multi-view stereo. Proposed a GAN-based scheme for human reconstruction, clothing segmentation, and virtual fitting, using non-rigid deformation for alignment. Lead **the reconstruction project, 1000+ clothed humans**, accepted to [SIGGRAPH'22](#). Lead **the MoCap project**. Collected a sports motion dataset in diving, boxing, and more. Published on [IJCV'21](#).
- **Image-based Shape Generation.** Aug. 2017 to Aug. 2018  
Introduced a fully automatic framework with the learning-based instance semantic segmentation part and the graphics-based reconstruction part. Published on [TVCG'18](#) (Graphics journal).
- **Early R&D Projects.** Before Aug. 2017  
**Mobile Virtual Fitting.** A single-view human body estimation and virtual fitting on Android in Real-time. Based on the front-facing RGBD camera (ToF). A Linear Blend Skinning (LBS) body model.  
**Dynamic 4D Mesh Player.** Stand-alone development work for free-view browsing on 4D scans, which supports mesh rendering, free-angle viewpoint change, and Poisson Surface Reconstruction.  
**Gesture Interaction in VR.** A two-hand controller. Leap Motion, HTC Vive for hardware support.

## SELECTED PUBLICATIONS (COMPLETE LIST...)

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About 30 papers, over 10 as first/co-first author(\*) or project leader (†), 5000+ GitHub Stars in total.

- Paint3D: Paint Anything 3D with Lighting-less Texture Diffusion Models.  
Xianfang Zeng\*, **Xin Chen\***, Zhongqi Qi\*, Wen Liu, Zibo Zhao, Zhibin Wang, Bin Fu, Gang Yu  
[[Arxiv'23](#) | [Project](#) | [Code](#) | [Paper](#) | [Github Stars 400+](#)]
- AppAgent: Human Motion as a Foreign Language.  
Chi Zhang\*, Zhao Yang\*, Jiaxuan Liu\*, Yuchen Han, **Xin Chen**, Zebiao Huang, Bin Fu, Gang Yu  
[[Arxiv'23](#) | [Project](#) | [Code](#) | [Paper](#) | [Github Stars 3k+](#)]
- LL3DA: Visual Interactive Instruction Tuning for Omni-3D Understanding, Reasoning, and Planning.  
Sijin Chen, **Xin Chen**†, Chi Zhang, Mingsheng Li, Gang Yu, Hao Fei, Hongyuan Zhu, Jiayuan Fan, Tao Chen.  
[[Arxiv'23](#) | [Project](#) | [Code](#) | [Paper](#)]
- M3DBench: Let's Instruct Large Models with Multi-modal 3D Prompts.  
Mingsheng Li, **Xin Chen**†, Chi Zhang, Sijin Chen, Hongyuan Zhu, Fukun Yin, Gang Yu, Tao Chen.  
[[Arxiv'23](#) | [Project](#) | [Code](#) | [Paper](#)]
- Chartllama: A multimodal llm for chart understanding and generation.  
Yucheng Han\*, Chi Zhang\*, **Xin Chen**, Xu Yang, Zhibin Wang, Gang Yu, Bin Fu, Hanwang Zhang  
[[Arxiv'23](#) | [Project](#) | [Code](#) | [Paper](#)]
- MotionGPT: Human Motion as a Foreign Language.  
Biao Jiang\*, **Xin Chen\***, Wen Liu, Jingyi Yu, Gang Yu, Tao Chen  
[[NeurIPS'23](#) | [Project](#) | [Code](#) | [Paper](#) | [Github Stars 1k+](#)]
- Michelangelo: Conditional 3D Shape Generation based on Shape-Image-Text Aligned Latent Representation.  
Zibo Zhao, Wen Liu, **Xin Chen**, Xianfang Zeng, Rui Wang, Pei Cheng, Bin Fu, Tao Chen, Gang Yu, Shenghua Gao  
[[NeurIPS'23](#) | [Project](#) | [Code](#) | [Paper](#) | [Github Stars 100+](#)]
- Executing your Commands via Motion Diffusion in Latent Space.  
**Xin Chen\***, Biao Jiang\*, Wen Liu, Zilong Huang, Bin Fu, Tao Chen, Jingyi Yu, Gang Yu  
[[CVPR'23](#) | [Project](#) | [Code](#) | [Paper](#) | [Github Stars 400+](#)]
- End-to-End 3D Dense Captioning with Vote2Cap-DETR.  
Sijin Chen, Hongyuan Zhu, **Xin Chen**, Yinjie Lei, Tao Chen, Gang Yu  
[[CVPR'23](#) | [Video](#) | [Code](#) | [Paper](#)]
- A Large-Scale Outdoor Multi-modal Dataset and Benchmark for Novel View Synthesis and Implicit Scene Reconstruction.  
Chongshan Lu, Fukun Yin, **Xin Chen**, Tao Chen, Gang Yu, Jiayuan Fan  
[[ICCV'23](#) | [Project](#) | [Code](#) | [Paper](#)]
- TightCap: 3D Human Shape Capture with Clothing Tightness Field.  
**Xin Chen**, Anqi Pang, Peihao Wang, Wei Yang, Lan Xu, Jingyi Yu  
[[SIGGRAPH'22](#) | [Project](#) | [Code](#) | [Paper](#) | [TOG Journal Track](#)]
- SportsCap: Monocular 3D Human Motion Capture and Fine-grained Understanding in Challenging Sports Videos.  
**Xin Chen**, Anqi Pang, Yuexin Ma, Lan Xu, Jingyi Yu  
[[IJCV'21](#) | [Project](#) | [Code](#) | [Paper](#)]
- ChallenCap: Monocular 3D Capture of Challenging Human Performances using Multi-Modal References.  
Yannao He, Anqi Pang, **Xin Chen**, Han Liang, Yuexin Ma, Lan Xu  
[[CVPR'21 Oral](#) | [Project](#) | [Paper](#)]
- Anisotropic Fourier Features for Neural Image-Based Rendering and Relighting.  
Huangjie Yu, Anpei Chen, **Xin Chen**, Lan Xu, Ziyu Shao, Jingyi Yu  
[[AAAI'22 Oral](#) | [Project](#) | [Paper](#)]
- Few-shot Neural Human Performance Rendering from Sparse RGBD Videos.  
Anqi Pang\*, **Xin Chen\***, Haimin Luo, Minye Wu, Jingyi Yu, Lan Xu  
[[IJCAI'21](#) | [Paper](#) | [Video](#)]

- Neural Free-Viewpoint Performance Rendering under Complex Human-object Interactions.  
Guoxing Sun, **Xin Chen**, Yizhang Chen, Anqi Pang, Pei Lin, Lan Xu, Jingya Wang, Jingyi Yu  
[[ACMMM'21](#) | [Paper](#) | [Video](#)]
- Pose2Body: Pose-Guided Human Parts Segmentation.  
Zhong Li\*, **Xin Chen**\*, Wangyiteng Zhou, Yingliang Zhang, Jingyi Yu  
[[ICME'19 Oral](#) | [Paper](#)]
- AutoSweep: Recovering 3D Editable Objects from a Single Photograph.  
**Xin Chen**, Yuwei Li, Xi Luo, Tianjia Shao, Jingyi Yu, Kun Zhou, Youyi Zheng  
[[TVCG'18](#) | [Project](#) | [Code](#) | [Paper](#)]
- Sparse Photometric 3D Face Reconstruction Guided by Morphable Models.  
Xuan Cao, Zhang Chen, Anpei Chen, **Xin Chen**, Shiyang Li, Jingyi Yu  
[[CVPR'18](#) | [Paper](#) | [Video](#)]

## REFERENCES

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Prof. <a href="#">Jingyi Yu</a>	Supervisor, IEEE Fellow	SHANGHAI TECH UNIVERSITY	<a href="mailto:yujingyi@shanghaitech.edu.cn">yujingyi@shanghaitech.edu.cn</a>
Prof. <a href="#">Youyi Zheng</a>	Former Supervisor	ZHEJIANG UNIVERSITY	<a href="mailto:youyi.zheng@zju.edu.cn">youyi.zheng@zju.edu.cn</a>