

# Xuan Gao

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## 🎓 EDUCATION



**University of Science and Technology of China**  
*B.S. in Information and Computational Science*

*Sep.2017–Jun.2021*



**University of Science and Technology of China**  
*Ph.D. in Information and Computational Science*

*Sep.2021–Present*  
*Advisor: Prof. Juyong Zhang*

## 📁 WORK EXPERIENCE



**Image Derivative Inc.**  
*Research Intern on Digital Human*

*Oct.2021–Jan.2023*  
*Mentor: Yudong Guo & Boyi Jiang*

- Efficient NeRF Portrait Modeling & Rendering
- Speech Driven NeRF Portrait
- Text to Speech

## 📄 PUBLICATIONS

- **Reconstructing Personalized Semantic Facial NeRF Models From Monocular Video**  
Xuan Gao, Chenglai Zhong, Jun Xiang, Yang Hong, Yudong Guo, Juyong Zhang  
SIGGRAPH Asia 2022 (Journal Track)  
[paper] [project page]
- **IntrinsicNGP: Intrinsic Coordinate based Hash Encoding for Human NeRF**  
Bo Peng, Jun Hu, Jingtao Zhou, Xuan Gao, Juyong Zhang  
IEEE Transactions on Visualization and Computer Graphics, 2023  
[paper] [project page]
- **FlashAvatar: High-Fidelity Digital Avatar Rendering at 300FPS**  
Jun Xiang, Xuan Gao, Yudong Guo, Juyong Zhang  
IEEE/CVF Conference on Computer Vision and Pattern Recognition, 2024  
[paper] [project page]
- **CosAvatar: Consistent and Animatable Portrait Video Tuning with Text Prompt**  
Haiyao Xiao, Chenglai Zhong, Xuan Gao, Yudong Guo, Juyong Guo  
[paper] [project page]
- **Facial Landmark Disentangled Network with Variational Autoencoder**  
Sen Liang, Zhize Zhou, Yudong Guo, Xuan Gao, Juyong Zhang, Hujun Bao  
Applied Mathematics-A Journal of Chinese Universities  
[paper]
- **Multi-Modal Digital Human Modeling, Synthesis, and Driving: A Survey**  
Xuan Gao, Dongyu Liu, Juyong Zhang  
Journal of Image and Graphics (in Chinese)

## PROJECTS

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- **Efficient NeRF Portrait Modeling and Rendering**

We developed a NeRF based parametric portrait representation, based on NeRFBlendshape and neural rendering, which could be reconstructed in 20 minutes and could render at 100 fps.

- **Speech Driven Talking Portrait Synthesis**

We developed a NeRF based talking portrait system. We leveraged audio Audio BERT and expert models to improve lip-synchronization quality.

- **Voice Cloning with Unconstrained Talking Video**

We developed a pipeline to process unconstrained talking video for voice cloning, including detecting voice activity, recognizing and phonemizing the speech content and then adapting multi-speaker VITS model for the new speaker.

## SELECTED HONORS

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- National Scholarship (top 2%) *2022*
- Yang Yuanqing Education Fund Scholarship *2023*
- First-class Academic Scholarships for Postgraduates *2021–2023*

## TALKS

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- CSIAM GDC 2021, Changsha  
Talk title: “Facial Landmark Disentangled Network with Variational Autoencoder”
- SIGGRAPH Asia 2022, Daegu  
Talk title: “Reconstructing Personalized Semantic Facial NeRF Models From Monocular Video”
- CSIAM GDC 2023, Shanghai  
Talk title: “Reconstructing Personalized Semantic Facial NeRF Models From Monocular Video”

## SKILLS

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- **Programming Language:** Python C C++ CUDA MATLAB
- **Software:** Blender Unity
- **Framework:** OpenMesh PyTorch libigl Eigen OpenGL

## ACADEMIC SERVICES

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- I'm the reviewer of IEEE Transactions on Multimedia (TMM)