MIANLUN ZHENG

Meta Reality Labs \diamond Pittsburgh, PA 15222 USA \diamond mianlunz@usc.edu \diamond Webpage: https://zhengmianlun.github.io

EDUCATION

University of Southern California

08/2018 - 10/2024

Ph.D candidate in Computer Graphics, GPA: 4.0/4.0

Advisor: Professor Jernej Barbič

Research focus: 3D graphics, AI animation, digital humans, haptics

Wuhan University 09/2015 - 06/2018

Master in Computer Science, GPA: 3.81/4.0

Advisor: Professor Zhiyong Yuan

Wuhan University 09/2011 - 06/2015

Bachelor in Computer Science, GPA: 3.69/4.0

PUBLICATIONS

Ph.D. Thesis: Real-time Simulation of Hand Anatomy Using Medical Imaging.

Mianlun Zheng, Jernej Barbič. Multi-Resolution Real-Time Deep Pose-Space Deformation, ACM SIGGRAPH Asia 2024. (accepted to journal track)

Mianlun Zheng*, Bohan Wang*, Jingtao Huang, Jernej Barbič. **Simulation of Hand Anatomy** Using Medical Imaging, ACM Transactions on Graphics 41(6) (SIGGRAPH Asia 2022). (*equal first authors)

Shihan Lu, <u>Mianlun Zheng</u>, Matthew C. Fontaine, Stefanos Nikolaidis, Heather Culbertson. **Preference-Driven Texture Modeling Through Interactive Generation and Search**, IEEE Transactions on Haptics, 2022, 15(3): 508-520. (Best Paper Award Finalist of IEEE Transactions on Haptics in 2022 (one of two finalists))

Mianlun Zheng, Yi Zhou, Duygu Ceylan, Jernej Barbič. A Deep Emulator for Secondary Motion of 3D Characters, CVPR, 2021. (Oral Presentation, top 4% of submissions)

Bohan Wang*, <u>Mianlun Zheng*</u>, Jernej Barbič. **Adjustable Constrained Soft-Tissue Dynamics**, Pacific Graphics 2020 and Computer Graphics Forum, 39(7), 2020. (*equal first authors) (the only Best Paper Award of both PG2020 and PG2021).

Mianlun Zheng, Danyong Zhao, Jernej Barbič. Evaluating the Efficiency of Six-DoF Haptic Rendering-Based Virtual Assembly Training, IEEE Transactions on Haptics, 2021, 14(1): 212-224.

Qianqian Tong, Zhiyong Yuan, Xiangyun Liao, Mianlun Zheng, Tianchen Yuan, Jianhui Zhao. Magnetic Levitation Haptic Augmentation for Virtual Tissue Stiffness Perception. IEEE Transactions on Visualization and Computer Graphics, 2018, 24(12): 3123-3136.

Mianlun Zheng, Zhiyong Yuan, Qianqian Tong, Guian Zhang, Weixu Zhu. A Novel Unconditionally Stable Explicit Integration Method for Finite Element Method. Visual Computer, 2018, 34(5):721-733.

Mianlun Zheng, Zhiyong Yuan, Weixu Zhu, Guian Zhang. A Fast Mass Spring Model Solver for High-resolution Elastic Objects. Simulation: Transactions of the Society for Modeling and Simulation International, 2017, 93(10): 797-807.

Qianqian Tong, Zhiyong Yuan, Xiangyun Liao, Mianlun Zheng, Weixu Zhu, Guian Zhang, Munan Ning. A joint multi-scale convolutional network for fully automatic segmentation of the left ventricle. IEEE International Conference on Image Processing (ICIP), 2017.

Qianqian Tong, Zhiyong Yuan, Mianlun Zheng, Xiangyun Liao, Weixu Zhu, Guian Zhang. A novel nonlinear parameter estimation method of soft tissues. Genomics, proteomics & bioinformatics 15.6 (2017): 371-380.

Qianqian Tong, Zhiyong Yuan, Mianlun Zheng, Weixu Zhu, Guian Zhang, Xiangyun Liao. A Novel Magnetic Levitation Haptic Device for Augmentation of Tissue Stiffness Perception. Proceedings of the 22nd ACM Conference on Virtual Reality Software and Technology. ACM, 2016: 143-152. (Best student paper award).

PATENTS

Duygu Ceylan, Mianlun Zheng and Yi Zhou. Predicting Secondary Motion of Multidimensional Objects Based on Local Patch Features. U.S. Non-provisional Patent, No. 11830138, issued on 11/28/2023.

Shihan Lu, Heather Culbertson, Matthew Fontaine, and Mianlun Zheng. Interactive Texture Generation and Search System Driven by Human Preference. U.S. Provisional Patent Application No. 11972052, issued on 04/30/2024.

EXPERIENCE

Meta Reality Labs, Pittsburgh, USA

10/2024 - present

Postdoc research scientist

Meta Reality Labs, Zurich, Switzerland

05/2023 - 08/2023

Research intern

Manager: Dr. Ryan Goldade

Topic: Learning-based human facial expression modeling; differentiable simulation.

Meta Reality Labs, Pittsburgh, USA

05/2022 - 08/2022

Research intern

Managers: Dr. Breannan Smith and Dr. Javier Romero

Topic: Loose and dynamic clothing tracking using physical priors.

Meta Reality Labs, Sausalito, USA

05/2021 - 08/2021

Research intern

Manager: Dr. Tuur Styuck

Topic: Virtual human body simulation and its interaction with the tight-fitting cloth.

Adobe Research, San Jose, USA

05/2020 - 08/2020

Research intern

Managers: Dr. Yi Zhou and Dr. Duygu Ceylan

Topic: Learning-based 3D character dynamics (secondary motion) modeling.

Tencent America, Los Angeles, USA

05/2019 - 08/2019

Research intern

Managers: Dr. Bo Yang and Dr. Ming Gao

Topic: Learning-based snow simulation using the Material Point Method.

SKILLS

Languages: C/C++, Python/Pytorch, Pybind.

Tools: Maya, Meshlab, Houdini, Git.

TEACHING

$Summer\ 2024$
Spring 2024
Fall 2023
$Spring \ 2023$
Fall 2022
$Spring \ 2022$
$Spring \ 2021$
$Spring \ 2020$
$Spring \ 2019$

AWARDS

USC Provost Top Off Travel/Research Award	2022
2022 Meta PhD Research Fellowship finalist	2022
USC Provost Fellowship	2018-2022
Pacific Graphics 2020 and 2021 Best paper award	2021, 2020
Wuhan University The Second Prize Scholarship	2016, 2014
VRST'2016 Best Student Paper Award	2016
National Scholarship (China)	2015, 2012
Outstanding Bachelor's Degree Thesis (Hubei Province, China)	2015
Meritorious Winner in Mathematical Contest in Modeling (MCM)	2015
First Prize in The 7th National College Students Information Security Contest	t of China 2015
Wuhan University Merit Student	2013, 2012
Huang Zhangren Alumni Scholarship	2013