Zeyu Wang

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https://zachzeyuwang.github.io/

Research Interests

My research is at the intersection of Computer Graphics, Human-Computer Interaction, and Artificial Intelligence, with a focus on **intelligent algorithms and systems for digital content creation**. My current research topics include sketching, VR/AR, generative techniques, creative intelligence, and the synergy between computing and the arts, with applications in design, perception, and cultural heritage.

Employment

The Hong Kong University of Science and Technology (Guangzhou) — Guangzhou, Guangdong, China
Assistant Professor of Computational Media and Arts (CMA), Information Hub — Sep 2022 – Present
The Hong Kong University of Science and Technology — Hong Kong, China
Affiliate Assistant Professor, Department of Computer Science and Engineering — Sep 2022 – Present

Education

Yale University — New Haven, CT, USA
PhD in Computer Graphics — Aug 2016 – Aug 2022
Peking University — Beijing, China
BS (Summa Cum Laude) in Machine Intelligence — Sep 2012 – Jul 2016

Publications

[16] Zeyu Wang, Tuanfeng Y. Wang, Julie Dorsey. "Learning a Style Space for Interactive Line Drawing Synthesis from Animated 3D Models." *Pacific Conference on Computer Graphics and Applications (PG)*, 2022. [pdf]

[15] **Zeyu Wang**, Cuong, Nguyen, Paul Asente, Julie Dorsey. "Point Cloud Capture and Editing for AR Environmental Design." *ACM Symposium on User Interface Software and Technology (UIST) Demos*, 2022. [pdf]

[14] Tiange Zhou, Borou Yu, Jiajian Min, **Zeyu Wang**. "DAMUS: A Collaborative System for Choreography and Music Composition." *IEEE ICME Workshop on Artificial Intelligence for Art Creation (AIART)*, 2022. [pdf]

[13] **Zeyu Wang**, Sherry Qiu, Nicole Feng, Holly Rushmeier, Leonard McMillan, Julie Dorsey. "Tracing Versus Freehand for Evaluating Computer-Generated Drawings." *ACM Transactions on Graphics (SIGGRAPH), Invited Presentation at IEEE VIS*, 2021. [pdf][project][dataset]

[12] **Zeyu Wang**, Cuong Nguyen, Paul Asente, Julie Dorsey. "DistanciAR: Authoring Site-Specific Augmented Reality Experiences for Remote Environments." *ACM CHI Conference on Human Factors in Computing Systems,* 2021. [pdf][project]

[11] Weiqi Shi, **Zeyu Wang**, Cyril Soler, Holly Rushmeier. "A Low-Dimensional Perceptual Space for Intuitive BRDF Editing." *Eurographics Symposium on Rendering (EGSR)*, 2021. [pdf]

[10] Yifei Shen, **Zeyu Wang**, Qinying Sun, Anne Chen, Holly Rushmeier. "Reconstructing Dura-Europos From Sparse Photo Collections Using Deep Contour Extraction." *Eurographics Workshop on Graphics and Cultural Heritage (EG GCH)*, 2021. [pdf][video]

[9] Davit Gigilashvili, Weiqi Shi, **Zeyu Wang**, Marius Pedersen, Jon Yngve Hardeberg, Holly Rushmeier. "The Role of Subsurface Scattering in Glossiness Perception." *ACM Transactions on Applied Perception (TAP)*, 2021. [pdf]

[8] **Zeyu Wang***, Shiyu Qiu*, Qingyang Chen, Natallia Trayan, Alexander Ringlein, Julie Dorsey, Holly Rushmeier. "AniCode: Authoring Coded Artifacts for Network-Free Personalized Animations." *The Visual Computer*, 2019. [pdf][video][demo][code]

[7] **Zeyu Wang**, Weiqi Shi, Kiraz Akoglu, Eleni Kotoula, Ying Yang, Holly Rushmeier. "CHER-Ob: A Tool for Shared Analysis and Video Dissemination." *ACM Journal on Computing and Cultural Heritage (JOCCH)*, 2018. [pdf][project][code]

[6] **Zeyu Wang**, Kiraz Akoglu, Holly Rushmeier. "An Introductory Video Generator for Disseminating Cultural Heritage Projects." *Eurographics Workshop on Graphics and Cultural Heritage (EG GCH)*, *Best Paper Award*, 2017. [pdf]

[5] Weiqi Shi, **Zeyu Wang**, Metin Sezgin, Julie Dorsey, Holly Rushmeier. "Material Design in Augmented Reality with In-Situ Visual Feedback." *Eurographics Symposium on Rendering (EGSR)*, 2017. [pdf]

[4] **Zeyu Wang**, Xiaohan Jin, Dian Shao, Renju Li, Hongbin Zha, Katsushi Ikeuchi. "Digital Longmen Project: A Free Walking VR System with Image-based Restoration." *Asian Conference on Computer Vision (ACCV) Workshop on e-Heritage*, 2016. [pdf][seminar][video]

[3] **Zeyu Wang**, Xiaohan Jin, Fei Xue, Renju Li, Hongbin Zha, Katsushi Ikeuchi. "Perceptual Enhancement for Stereoscopic Videos Based on Horopter Consistency." *ACM Symposium on Virtual Reality Software and Technology (VRST)*, 2016. [pdf][video]

[2] **Zeyu Wang**, James K. Min, Guanglei Xiong. "Robotics-driven Printing of Curved 3D Structures for Manufacturing Cardiac Therapeutic Devices." *IEEE International Conference on Robotics and Biomimetics (ROBIO)*, 2015. [pdf][video]

[1] **Zeyu Wang**, Xiaohan Jin, Fei Xue, Xin He, Renju Li, Hongbin Zha. "Panorama to Cube: A Content-Aware Representation Method." *ACM SIGGRAPH Asia Technical Briefs*, 2015. [pdf][video][code]

Selected Honors

- Adobe Research Fellowship 2021
- Franke Interdisciplinary Research Fellowship 2018
- William Grey Warden Scholarship, Yale University 2017
- Outstanding Graduate Award, Beijing City 2016
- National Scholarship, Ministry of Education of China 2015
- iCAN-IEEE CES Global Young Innovator Award 2015

Research Experience

Yale University (Computer Graphics Group) New Haven, CT, USA
Research Assistant advised by Julie Dorsey, Holly Rushmeier, Leonard McMillan Aug 2016 – Aug 2022

- Conducted dissertation research on spacetime-aware interfaces for content creation in sketching [13] and AR [5, 8, 15], with applications in design, perception [9, 11], and cultural heritage [6, 7, 10]

Adobe Research (Creative Intelligence Lab) London, UK
Research Intern advised by Tuanfeng Wang, Aaron Hertzmann, Li-Yi Wei Jun 2021 – Aug 2021

- Developed a pipeline for learning a style space for interactive sketch animation [16]

Adobe Research (Creative Intelligence Lab) San Jose, CA, USA
Research Intern advised by Paul Asente and Cuong Nguyen Jun 2020 – Sep 2020

- Developed a tablet-based remote AR authoring interface with LiDAR reconstruction [12]

Harvard University (Chinese Art Media Lab) Cambridge, MA, USA
Technical Advisor to Eugene Wang and Chenchen Lu Aug 2021 – Aug 2022

- Provided technical advice to artists and historians on latest graphics and AI research

Google (Display Advertising Team and Google Research) Mountain View, CA, USA
Research Intern advised by Xia Li and Feng Yang Jun 2017 – Aug 2017

- Designed neural networks for image beautification and automatic composition

Peking University (Key Laboratory of Machine Perception) Beijing, China
Research Assistant advised by Hongbin Zha and Katsushi Ikeuchi Jul 2013 – Aug 2016

- Worked on a content-aware representation of panoramas [1], perceptual enhancement of stereoscopic videos [3], and the Digital Longmen Project [4]

Microsoft Research Asia (Visual Computing Group) Beijing, China
Research Intern advised by Peiran Ren and Gang Hua Feb 2016 – Jun 2016

- Designed algorithms for face anti-spoofing and video person re-identification

TEACHING

- Yale CPSC 579: Advanced Topics in Computer Graphics Spring 2018, Fall 2020, Fall 2021, Fall 2022
- Yale CPSC 576: Advanced Computational Vision Spring 2022
- Yale CPSC 678: Creative Artificial Intelligence for Visual Computing Spring 2019, Spring 2021
- Yale CPSC 578: Computer Graphics Spring 2020
- Yale CPSC 376: Advanced Web Development in the Digital Humanities Fall 2018, Fall 2019
- Yale CPSC 100: Introduction to Computing and Programming (joint with Harvard CS50) Fall 2017
- Peking University: Data Structures and Algorithms (A) Fall 2015

MENTORING

- Noah Shapiro (Yale '22): Viewing 3D Sketches in Augmented Reality Fall 2021
- Yifei Shen (Yale '20, '21 MS): Constructing 3D Scenes from 2D Sketches Summer 2019, Spring 2021
- Isabel Lee (Yale '21): Painting Retrieval Using Real-Time Human Pose Estimation Fall 2020
- Ting Gao (Yale '20): Breaking Barriers in 3D Modeling with 2D Sketching Spring 2020
- Evelyn Huang (Yale '20): Automatically Generating Camera Paths for 3D Scene Navigation Spring 2020
- Nishitha Burman (Yale '20): Configurable Camera Paths for 3D Scene Navigation Spring 2020
- Nicole Feng (Caltech '20): Spatio-Temporal Drawing Analysis Summer 2018, Summer 2019
- Bonnie Rhee (Yale '18): Time-Based Sketching Application Spring 2018
- Alexander Ringlein (Yale '18): Image Segmentation for Animation Encoding Fall 2017

SERVICE

- Reviewer for ACM Transactions on Graphics, SIGGRAPH, Computer Graphics Forum, Eurographics, Pacific Graphics, ACM Journal of Computing and Cultural Heritage, Graphics and Visual Computing, ACM Symposium on Virtual Reality Software and Technology 2018 – Present
- Yale Computer Science Social Leader 2018
- Vice President, Association of Chinese Students and Scholars at Yale (ACSSY) 2017
- Student Volunteer, SIGGRAPH Asia Conference 2015
- Vice President of EECS Student Union, Peking University 2014
- Student Volunteer for Media Center, APEC Leaders' Summit 2014

Additional Information

Computer Skills: C/C++, Python, MATLAB, OpenCV, OpenGL, Qt, VTK, PyTorch, TensorFlow, Caffe, HTML, JavaScript (Node, Vue, Three), CSS, SQL, PHP, Swift (ARKit), Java (Android Studio), Shell Script, VBA, LaTeX, Blender, Unity, Maya, Photoshop, Premiere
Languages: Chinese (native), English (fluent), Japanese (intermediate), Korean (intermediate)

Last updated on September 19, 2022