

DANHUA ZHANG

PHD STUDENT, MIXED REALITY, HCI, AND COMPUTER GRAPHICS

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EDUCATION	University of Minnesota Twin Cities, MN, USA	2019 - present
	Ph.D. Computer Science	
	University of Minnesota Twin Cities, MN, USA	2017 - 2019
	M.S., Computer Science	
	Sun Yat-sen University, Guangzhou, China	2013 - 2017
	B.S., Information and Computing Science	
TECHNICAL SKILLS	Programming Languages: C/C++, C#, Processing, R script	
	Programming Software: MS Visual Studio, Matlab, R Studio	
	Libraries: OpenGL, OpenVR, VRPN, Photon PUN 2	
	Game Engine: Unity	
	3D Modeling: Character Creator 3, iClone 7, Maya, Blender	
	Digital Art: PaintTool SAI, Davinci Resolve, Adobe PhotoShop, After Effects, Premier	
PUBLICATIONS	Danhua Zhang, Malik Khadar, Brett W Schumacher, Madhava Raveendra, Sam Adeniyi, Fei Wu, Sahar Aseeri, and Evan Suma Rosenberg. "COVID-Vision: A Virtual Reality Experience to Encourage Mindfulness of Social Distancing in Public Spaces." In <i>2021 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)</i> . IEEE. DOI:10.1109/VRW52623.2021.00231	
AWARDS & HONORS	Awarded the Honorable Mention of MCM , 2016, COMAP	
	Awarded the 3rd Class Scholarship , 2016, SYSU	
	Awarded the 3rd Class Scholarship , 2015, SYSU	
WORK EXPERIENCE	CSCI 4511W Introduction to Artificial Intelligence	Fall 2022
	Teaching Assistant, UMN, USA	
	- Holding office hours for students' questions and grading assignments and projects	
RESEARCH EXPERIENCE	Nurse Training: Virtual Simulation	Sept. 2021 - Present
	Research Assistant, UMN, USA	
	- Collaborating with nursing experts to conduct a formative study to assess the feasibility and a follow-up study to evaluate the effectiveness and user acceptance	
	- Designed the interview questions and interviewed participants in person for their feedback on the designed training scenarios	
	- Developed a VR project of several nurse training scenarios	
	- Customized the patient avatar model, including appearance, voice and animation	
	- Built several 3D medical device models in Blender	
	Understanding Communication Technology and Social Behavior	Sept. 2020 - Present
	Research Assistant, UMN, USA	
	- Collaborating with psychologists to run the longitudinal experiment and develop customized software for the study	
	- Trained undergraduate research assistants to use the developed software	
	- Developed a multi-user VR application for mobile devices, supporting voice synchronization	
	- Developed a multi-user 3D application for Windows & MacOS to control the VR users	
	Motion Sickness: Postural Sway Analysis in VR	Sept. 2019 - May. 2020
	Research Assistant, UMN, USA	

- Collaborated with kinesiologists to conduct a study to analyze the pattern of postural sway data when users' motion sickness level change
- Developed a software collecting data from a balance board for postural sway measurement
- Developed a software capable of collecting data from most commercial VR devices

CONTEST PROJECTS	<div> COVID Vision: Mind Social Distances <i>Dec. 2020 - March 2021</i> </div> <div> <i>IEEE VR 3DUI Contest</i> <ul style="list-style-type: none"> - Developed the multi-user VR application for VR devices on PC - Led the team to collaborate and organize the modules implemented by each member - Provided the visualization, interaction and feedback method - Presented the publication in IEEE VR Conference 2021 </div> <div> A Hot Bath: Optimization <i>Jan. - Feb. 2016</i> </div> <div> <i>The Mathematical Contest in Modeling - Problem A</i> <ul style="list-style-type: none"> - Learned thermodynamics and applied differential equation to dynamically describe the bath water temperature - Used nonlinear programming for the optimization model - Submitted a paper as a group of three </div>
RELEVANT COMPLETED COURSES	CSCI 8980 Special Topics: Game Engine Technologies, fall 2019, UMN, USA CSCI 5609 Visualization, spring 2019, UMN, USA CSCI 8980 Special Topics: Immersive User Interfaces, fall 2018, UMN, USA CSCI 5611 Animation & Planning in Games, spring 2018, UMN, USA ARTS 3770 Animation, spring 2018, UMN, USA CSCI 5607 Fundamentals of Computer Graphics 1, fall 2017, UMN, USA
RESEARCH INTERESTS	Virtual Reality (VR) and Augmented Reality (AR) 3D user interface design Human-Computer Interaction (HCI) Computer Graphics and Animation
LANGUAGES	Chinese - Mandarin: Native speaker English: Advanced
REFERENCE LETTERS	Prof. Evan Suma Rosenberg (Ph.D. advisor): Associate Professor, UMN Email: suma@umn.edu