QINGQIN LIU

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EDUCATION

University of Science and Technology of China (USTC)   09.2021 - 06.2023
Master of Journalism and Communication, Department of Communication of Science and Technology,
Supervisor: Prof. Yanxiang Zhang

University of Science and Technology of China   07.2019 - present
Research Assistant in Digital Art Lab, Director: Prof. Yanxiang Zhang

University of Science and Technology of China   09.2015 - 07.2019
Bachelor of Natural Science in Astronomy, Department of Astronomy, School of Physical Sciences

PUBLICATIONS

[1] Y. Zhang, **Q. Liu** and Y. Wang, "Redirected Walking in 360° Video: Effect of Environment Size on Detection Thresholds for Translation and Rotation Gains," *2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*, 2022, pp. 830-831.

[2] Y. Zhang, Y. Wang and **Q. Liu**, "Touch the History in Virtuality: Combine Passive Haptic with 360° Videos in History Learning," *2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*, 2022, pp. 824-825.

[3] Y. Zhang, J. Wu and **Q. Liu**, "The Sloped Shoes: Influence Human Perception of the Virtual Slope," *2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*, 2022, pp. 826-827.

RESEARCH EXPERIENCES

Metagame Interaction Design and Player Experience in Virtual Reality   08.2022 - present
Research project based on my master's thesis, Supervisor: *Prof. Yanxiang Zhang*
- Conducted a formal analysis of metagames, focusing on interaction patterns breaking the fourth wall.
- Designed and developed a VR metagame prototype, wrote game scripts and game plots.
- Implemented in-game interactions (applying eye tracking and motion sensing), using Unity and plugins.
- Evaluating player experience in a within-subjects user study (using SUS, GEQ, semi-structured interview).

Video Game Network Based on User-generated Tags on Steam Platform   03.2022 - 05.2022
Team Leader, Course Project of Social Network Analysis (by *Prof. Noshir Contractor* & *Prof. Mengxiao Zhu*)
- Proposed the project idea and investigated the correlations of user rating and other game attributes.
- Applied Bayesian ALAAM to analyze one-mode video game network based on Steam tags.
- Collaborated with the team on writing the report and interpreting the results, provided final presentation.

Redirected Walking (RDW) in 360° Video, User Perception and Applications   07.2021 - 01.2022
Team Leader, Supported by National Social Science Foundation of China.
- Collaborated with the team on selecting scenes, and capturing 360° videos with various equipment.
- Designed and developed a VR system to control the playback of 360° video according to real walking.
- Investigated user perception in RDW (using SSQ, 2AFC and semi-structured interview).

Combine Passive Haptic with 360° Videos in Augmented Virtuality   09.2021 - 01.2022
Supported by National Social Science Foundation of China.
- Co-developed cube space projection method to tackle perspective distortion in 360° videos.
- Developed a VR program and an experimental system enabling users to virtually and physically touch objects in historical learning.

Human Perception of Slope Walking in Virtual Reality   09.2021 - 01.2022

Supported by National Social Science Foundation of China.

- Developed a VR program to simulate people walking uphill or downhill.
- Built experimental environment and designed experiment procedure.

Application of Augmented Reality in Web and Mobile Applications   06.2018 – 05.2019

Undergraduate Research Project, supported by Innovation and Practice Plan for Undergraduates of USTC

- Investigated WebAR and MobileAR applications academically and commercially.
- Built a WebAR system for demonstrating the futuristic recycling of space satellites.
- Co-designed and developed an AR library system for collaborative annotation.

TEACHING EXPERIENCES

HS1584.01: Contemporary Sci-Tech ART   Fall 2021

Teaching Assistant

- Designed exercises for all chapters, maintained the online class system.
- Organized undergraduates to give presentations, co-evaluated their presentations with the instructor.
- Provided grades and feedback on the students' assignments and project reports.

NNM1501.01: Creative Design and Application of VR/AR/MR Technology   Fall 2021

Teaching Assistant

- Introduced and demonstrated the use of VR/AR/MR devices to undergraduates, organized and arranged for students to experience the devices.
- Worked closely with students in their coursework, providing applications, toolkits, manuals, etc.

HONORS & AWARDS

Academic Scholarship of USTC (First Class)   09.2022
Academic Scholarship of USTC (Second Class)   09.2021
Outstanding Freshman Scholarship of USTC (Bronze Prize)   09.2015

EXTRACURRICULAR ACTIVITIES

China indie Game Alliance Gam Jam   07.2023

Game Design, our team made a 2D brain training video game "Touch Ball" in 48 hours.

Science Experiment Exhibition and Performances in Anhui Province   04.2021 - 05.2021

Our team produced a popular science play about "Using Antibiotics Scientifically".

National Science Experiment Exhibition and Performances   09.2019

An activity using science experiments and competitions to popularize scientific knowledge to the society

China International College Students' "Internet+" Innovation Entrepreneurship Competition

Team Leader, Project: New Style of AR Globe - a product based on WebAR   07.2018 - 09.2018

- Proposed the product idea, developed the demo of the AR Globe, presented the business plan.

Selected Volunteer Activities:

Science and Technology Week of USTC (2021)   05.2021

- Presented a four-minute video of "Using Antibiotics Scientifically" on school website for the public.

Science and Technology Week of USTC (2019)   05.2019

- Developed and exhibited a multi-user AR application about Solar System based on body tracking.

TECHNICAL SKILLS

- **Programming:** C#, Python, R, MATLAB/Octave, HTML, JavaScript
- **Platforms and Tools:** Unity, Origin, SPSS, SteamOS, Godot, Figma, MagicaVoxel, Raspberry Pie
- **Languages:** Chinese (Native, Cantonese & Mandarin), English (Fluent)