Huadong Zhang

Ph.D. CANDIDATE · COMPUTING AND INFORMATION SCIENCES

Rochester Institute of Technology, 1 Lomb Memorial Dr, Rochester, NY, 14623

+1 5857336297 hz2208@rit.edu zhanghuadong.net

Research Interests

High-Performance Graphics, Virtual Reality, Serious Games

Education

Rochester Institute of Technology — **Rochester, NY**
Ph.D., Computing and Information Science — *2021-2026(Expected Graduation)*

Rochester Institute of Technology — **Rochester, NY**
Master of Science, Game Design and Development — *2019-2021*

Jiangsu University of Technology — **Jiangsu, China**
Bachelor of Engineering, Digital Media Technology — *2015-2019*

Professional Experience

2023 - present	**Graduate Research Assistant**, Golisano College of Computing and Information Sciences, Rochester Institute of Technology
Summer 2023, 2024	**Game/Media Developer (Research CO-OP)**, School of Interactive Games and Media, Rochester Institute of Technology
2022 - 2023	**Instructor**, School of Interactive Games and Media, Rochester Institute of Technology
Summer 2022	**Game/Media Developer (Research CO-OP)**, MAGIC Spell Studios, Rochester Institute of Technology
2020 - 2022	**Graduate Research Assistant**, Golisano College of Computing and Information Sciences, Rochester Institute of Technology
Fall 2021	**Game Producer/Developer (Part-time CO-OP)**, MAGIC Spell Studios, Rochester Institute of Technology
Summer 2020	**Web Architect**, GoGlobal Accelerator LLC

Publications

Peer-Reviewed Journal Articles

[J1] **Huadong Zhang**, Lizhou Cao, Gel Howell, David Schwartz, and Chao Peng, "An Educational Virtual Reality Game for Learning Historical Events", *Virtual Reality*, 1-15, Springer, 2023. [link]

[J2] Lizhou Cao*, **Huadong Zhang***, Chao Peng, and Jeffery Hansberger, "Real-time Multimodal Interaction in Virtual Reality - A Case Study with a Large Virtual Interface", *Multimedia Tools and Applications*, Springer, 2023. [link] (*Both authors contributed equally to this work.)

Peer-Reviewed Conference Papers

[C1] Ziming Li, **Huadong Zhang**, Chao Peng, Roshan Peiris, "Exploring Large Language Model-Driven Agents for Environment-Aware Spatial Interactions and Conversations in Virtual Reality Role-Play Scenarios", 2025 IEEE Conference on Virtual Reality and 3D User Interfaces (VR), Saint Malo, France, March 8-12, 2025.

[C2] **Huadong Zhang**, Chao Peng, "Foveated VR Rendering System for Large 3D Meshes", 2025 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW), Saint Malo, France, March 8-12, 2025.

[C3] Lizhou Cao, Cielo Serna, **Huadong Zhang**, Chao Peng, "Ellic's Exercise Camp: Engaging Children in Physical Activity Through Virtual Reality Gaming", *SIGGRAPH '24: ACM SIGGRAPH 2024 Immersive Pavilion*, 2024. [link]

[C4] Chao Peng, Lizhou Cao, David Schwartz, **Huadong Zhang**, "Integrating Independent Contributions in a Game Programming Assignment", *SIGGRAPH '24: ACM SIGGRAPH 2024 Educator's Forum*, 2024. [link]

[C5] **Huadong Zhang**, Lizhou Cao, and Chao Peng, "Spherical Parametric Measurement for Continuous and Balanced Mesh Segmentation", *High-Performance Graphics*, 2023. [link]

[C6] Lizhou Cao, Jackson Shuminski, **Huadong Zhang**, Pruthviraj Solanki, David Long, David Schwartz, Ihab Mardini, Chao Peng, "Multi-User VR Experience for Creating and Trading Non-Fungible Tokens", HCI International, 2023. [link]

[C7] **Huadong Zhang**, Lizhou Cao, Gel Howell, Chao Peng, "VR Education on Historic Lunar Roving Missions", 2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW), pp. 612-613, Christchurch, New Zealand, March 12-16, 2022. [link]

Manuscripts Under Review

[U1] **Huadong Zhang**, Lizhou Cao, Chao Peng, "UltraMeshRenderer: Efficient Structure and Management of GPU Out-of-core Memory for Real-time Rendering of Gigantic 3D Meshes".

[U2] **Huadong Zhang**, Chao Peng, "Performance-Driven Foveated VR Rendering System for Large 3D Meshes".

[U3] **Huadong Zhang**, Xuhang Yuan, Lizhou Cao, Anthony Talion, Ethan Coom, William Brewer, Chao Peng, "Investigating VR Exergame Parameters and Correlation with Exercise Intensity for Fitness-Centered Game Design".

[U4] **Huadong Zhang**, Xueting Wang, Xiwen Dengxiong, Xuhang Yuan, Justus Robertson, Yunbo Zhang, David Schwartz, Chao Peng, "LLM-ResiGame: Multi-Agent Large Language Models for Creating Scenario-Based Resilience Games in Critical Infrastructure Decision-Making Practices".

Published Games

Vigorus *Published on Steam [link]*
- All Reviews: Very Positive
- Gold Winner in Digital Art, Indigo Design Award 2024
- Gold Winner in PC Games, Indigo Design Award 2024
- Aesthetics, RIT Student Game Showcase 2022
- Grand Prize, RPI GameFest 2022

Lunar Exploration: Past *Published on Meta Store [link]*
- Finalist, Serious Games Showcase & Challenge (SGS&C) 2021

Ellic's Exercise Class *Published on Meta Store [link]*
- Immersive Pavilion, SIGGRAPH 2024

Skills

Programming Language: C/C++, CUDA, C#, Python, Java, HTML5, Javascript
Game Engine: Unity, Unreal Engine
Tools: Maya, Blender, Photoshop, Premiere, After Effects

Exhibitions

[E1] "Ellic's Exercise Camp: Engaging Children in Physical Activity Through Virtual Reality Gaming", Siggraph 2024, Denver, Colorado, July 28 - Aug. 1, 2024. (Attracted 300+ visitors.)

[E2] "In-place Parallel Data Defragmentation for Real-Time GPU Out-of-core Rendering of One-billion Triangle Scenes", ImagineRIT, Rochester Institute of Technology, April 27, 2024. (Attracted 200+ visitors.)

[E3] "Multi-User VR Experience for Creating and Trading Non-Fungible Tokens", The 8th Annual Frameless Symposium 2023, Demo Showcase, Magic Spell Studios, Rochester, New York, November 16-17, 2023.

[E4] "Lunar Exploration: Past", ImagineRIT, Rochester Institute of Technology, April 27, 2023. (Attracted 200+ visitors.)

[E5] "Lunar Exploration: Past", ImagineRIT, Field House, Rochester Institute of Technology, April 23, 2022. (Attracted 200+ visitors.)

[E6] "Vigorus", Rochester Game Festival, Magic Spell Studios, Rochester, February 19, 2022. (Attracted 200+ visitors)

[E7] "Lunar Exploration: Past", The Finalist Game Showcase at The Serious Games Showcase & Challenge (SGS&C), Orlando, Florida, Nov. 28 - Dec. 2, 2021. (Attracted 100+ visitors.)

Media Coverage

[M1] I was interviewed by WROC about the Lunar Exploration game on December 13, 2022.

[M2] I was interviewed during the Rochester Game Festival 2022 about Vigorus on February 19, 2022.

Presentations

[P1] Poster presentation, "VR Education on Historic Lunar Roving Missions", 2022 IEEE Conference on Virtual Reality and 3D User Interfaces, Virtual, March 15, 2022.

Teaching Experience

IGME 209 - Data Structures & Algorithms for Games & Simulations I **Instructor**
School of Interactive Games and Media, Rochester Institute of Technology *Spring 2023*

IGME 309 - Data Structures & Algorithms for Games & Simulations II **Instructor**
School of Interactive Games and Media, Rochester Institute of Technology *Fall 2022*

• Designing Course Materials • Delivering Lectures • Mentoring Students • Grading Assignments & Exams

Professional Services

Reviewer for Computer Animation and Virtual Worlds *2023 - 2024*

Reviewer for the IEEE Virtual Reality conference *2022*