WANG XIANGZHI, ERIC

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EDUCATION BACKGROUND

The Chinese University of Hong Kong **Aug. 2023 – Oct. 2024**
MSc in Information Engineering **GPA: 3.58/4.0**
Coursework: Data Science in Practice, IT Innovation & Entrepreneurship, Blockchain & Applications, Web Programming & Internet Security, etc.

The Hong Kong Polytechnic University **Sep. 2019 – July. 2023**
BSc (HONS) in Computing **GPA: 3.33/4.3**
Coursework: Data Mining & Warehousing, Machine Learning, Aspects & Ethics in Computing, Computer Vision, Software Engineering, Business Intelligence & Customer Relationship Management, Design & Analysis of Algorithms, etc.

Honors and Scholarships:

- ✧ Excellent Presentation in Best Project Award Competition 2023
- ✧ Dean's Honor List 2022
- ✧ InfoTech Job Market Driven Scholarship 2023, 12,000 HKD
- ✧ Greater Bay Area Virtual Internship Programme, 5000 HKD
- ✧ Undergraduate Research and Innovation Scheme (PolyU), 14,000 HKD

SKILLS & INTERSTS

Programming: Python, C# (advanced); C++ (CUDA), Java, Shell/Bash (proficient)

Web Development: HTML/CSS, JavaScript, PHP/.NET, MySQL/SQLite/MSSQL

AI & ML: PyTorch, Azure OpenAI, RAG, prompt engineering, HuggingFace

3D, Game & XR: Unity (3D/VR), Blender, Neural Rendering (NeRF, 3D Gaussian Splatting)

DevOps: Docker, Kubernetes, Azure/Tencent Cloud, Ngnix, environment configuration

Tools: JetBrains IDEs, Visual Studio, Git, Office 365, Adobe Suite

Professional: Rapid learning, performance under pressure, deadline-oriented, requirements analysis

Interests: Fitness, dog walking, traveling, home organization

WORK EXPERIENCE

Research Associate, Department of Computing, The Hong Kong Polytechnic University **Nov. 2024 – Present**
Research Assistant **Sep. 2023 – Oct. 2024**

- ✧ Led the development of neural rendering techniques and immersive HCI systems, managed user studies, and coordinated cross-functional collaborations with partners, prepared demos and workshops for public activities
- ✧ Contributed and be contributing to 8 papers: 2 preprinted (arXiv), 2 published (IEEE), 2 submitted (ACM, CGF), and 2 preparing (ACM, IEEE); hosted several demonstrations and developed workshops for campus info day

Student Assistant, Department of Computing, The Hong Kong Polytechnic University **Feb. 2023 – July 2023**

- ✧ Designed VR/CAVE interaction systems for academic advising and executed platform migration from Oculus Quest to Votanic CAVE
- ✧ Delivered demonstration-ready systems that showcased the department's innovation capabilities and provided practical use cases for immersive technology in education

Analyst Developer Intern, BlueSky IT(INT'L) CO. LTD. **June 2022 – July 2022**

- ✧ Supported data migration for a retail client and assisted with API integration for a travel website
- ✧ Participated in a professional team environment applying test-driven development practices

HIGHLIGHTED PROJECTS

VR Mover: An LLM-Empowered Multimodal Interface for VR Object Manipulation **July 2024 – Feb. 2025**

- ✧ Developed VR interior design application using LLM that translates natural language and gestures into precise object manipulation, reducing training barriers and workload
- ✧ Conducted a user study with 30 participants showing 50% improved efficiency and 37% reduced arm fatigue over traditional interfaces, verified the reliability of integrating LLM into the interactive user systems
- ✧ First authored paper on arXiv and submitted to ACM Transactions on Computer-Human Interaction (TOCHI)

3DGM: 3D Gaussian Model for Deformation and Texturing **Oct. 2023 – Aug. 2024**

- ✧ Developed mesh proxy-based 3D Gaussian renderer supporting novel animation and UV texture mapping
- ✧ Achieved 43% perceptual error reduction versus another mode, maintaining 99.6% visual quality with a 60% smaller mesh proxy, narrowed the gap to applying 3D Gaussian Splatting into traditional CG production pipeline
- ✧ First authored paper on arXiv and submitted to Computer Graphics Forum (CGF)

KCube-KG: Multi-user Knowledge Graph Guided Mind Map Editor in Edu-metaverse **Apr. 2024 – Feb. 2024**

- ✧ Created a real-time collaborative mind map editor with knowledge graph-based guidance for VR environments
- ✧ User study with 24 participants showed 70% higher engagement, 45% better communication efficiency, and 12% improved usability compared to traditional tools, presenting the application prospect of edu-metaverse
- ✧ Co-authored paper published in IEEE Transactions on Learning Technologies (TLT)

Slides Plus: Automatic Slides Publication for PowerPoint **Oct. 2022 – Apr. 2023**

- ✧ Developed a practical PowerPoint enhancement tool (an add-in and a website) with interactive features that addresses common presentation challenges in professional and educational settings
- ✧ Validated effectiveness through user testing with 16 participants, achieving over 90% satisfaction in usability assessments, provided a possible solution to enhance the learning outcomes based on traditional teaching settings
- ✧ Received Excellent Presentation Award (Dept. of Computing, PolyU) and InfoTech Job Market Driven Scholarship (Info Tech, HK)

CAVE System for Tertiary Architecture, Engineering, and Construction Education **Sep. 2021 – Mar. 2022**

- ✧ Designed immersive educational software for CAVE systems to enhance spatial understanding and visualization skills in architecture, engineering, and construction (AEC) education
- ✧ Conducted a study with 104 students, showed 21% higher learning outcomes and 17% higher perceived usefulness than traditional teaching method, embodied the promise of applying CAVE system in this teaching and learning
- ✧ First authored paper published in Journal of Civil Engineering Education

Publications

- ✧ **X. Wang**, Z. P. T. Sin, Y. Jia, D. Archer, W. H. Y. Fong, Q. Li, and C. Li, "*Can You Move These Over There? An LLM-based VR Mover for Supporting Object Manipulation*," ACM Transactions on Computer-Human Interaction (TOCHI), under review
- ✧ **X. Wang** and Z. P. T. Sin, "*3D Gaussian Model for Animation and Texturing*," Computer Graphics Forum (CGF), under review
- ✧ Y. Jia, Z. P. T. Sin, **X. Wang**, C. Li, P. H. F. Ng, X. Huang, J. Dong, Y. Wang, G. Baciu, J. Cao, and Q. Li, "*NivTA: Towards a Naturally Interactable Edu-Metaverse Teaching Assistant for CAVE*," IEEE International Conference on Metaverse Computing, Networking, and Applications (MetaCom 2024)
- ✧ Y. Jia, **X. Wang**, Z. P. T. Sin, C. H. Wu, P. Ng, X. Huang, G. Baciu, J. Cao, and Q. Li, "*Knowledge-Graph-Driven Mind Mapping for Immersive Collaborative Learning: A Pilot Study in Edu-Metaverse*," IEEE Transactions on Learning Technologies (TLT)
- ✧ **X. Wang**, M. Chou, X. Lai, J. Tang, J. Chen, W. K. Kong, H. L. Chi, and M. C. H. Yam, "*Examining the Effects of Immersive Learning Environment in Tertiary AEC Education: A CAVE-VR System for Students' Perception and Technology Acceptance*," Journal of Civil Engineering Education
- ✧ **X. Wang**, "*Precise Human Removal and Inpainting Using Mask RCNN and LaMa*," Applied and Computational Engineering