WANG XIANGZHI, ERIC
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EXCLUSIVE SUMMARY

Eric Wang Xiangzhi, a master's candidate in Information Engineering at The Chinese University of Hong Kong, excels in data science, machine learning, and immersive technologies. With a strong background in advanced programming and data analysis, Eric has contributed to impactful research and innovative projects, evidencing his potential for high-level consulting and R&D roles. His work is published in respected journals and conferences, showcasing his expertise and adaptability in fast-paced environments.

EDUCATION BACKGROUND

The Chinese University of Hong Kong **08/2023 - present**
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 **09/2019 - 07/2023**
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.

Honours and Scholarships:

Excellent Presentation in Best Project Award Competition 2023
Dean's Honor List 2022
InfoTech Job Market Driven Scholarship 2023, 12000HKD
Greater Bay Area Virtual Internship Programme, 5000HKD
Undergraduate Research and Innovation Scheme (PolyU), 14000HKD

TECHNICAL SKILLS

Programming Languages: Python, C#, (CUDA) C++, Web Full-stack
Data Analysis and Machine Learning: PyTorch, Pandas, OpenCV, etc.
Game, Rendering, and Modelling: Unity (3D & VR), Blender, MeshLab
Software Engineering: requirement analysis, prototype and MVP development, documentation
Soft Skills: solution proposal, methodology design, teamwork and communication, schedule management

WORKING EXPERIENCE

Research Assistant, Department of Computing, The Hong Kong Polytechnic University **09/2023 - Present**

- ✧ **Research & Development:** Engaged in advancing machine learning-based rendering techniques and collaborative learning within immersive environments. Designed and implemented innovative methodologies, created datasets, conducted comprehensive data analyses and executed extensive experiments and user studies. Authored and co-authored papers aimed at contributing to the field.
- ✧ **Collaboration & Communication:** Collaborated closely with supervisors and team members across different groups. Regularly reported progress in team meetings and coordinated communication with participants for user studies
- ✧ **Technical Expertise:** Specialized in software development using Python (PyTorch), C++ (CUDA), and Unity. Employed 3D modeling tools such as Blender and MeshLab. Managed service deployment on Microsoft Azure and utilized Office 365 and Overleaf for document editing and academic writing. Maintained code integrity and version control using Git.
- ✧ **Outcomes:** Contributed to two papers submitted to IEEE; one paper preprinted on arXiv and two additional papers currently in preparation.

Student Assistant, Department of Computing, The Hong Kong Polytechnic University **02/2023 - 07/2023**

- ✧ **Research & Development:** Investigated novel interaction and presentation methods for VR/CAVE systems to enhance the academic advising process for undergraduate students. Performed the platform migration from Oculus Quest to Votanic CAVE, including debugging, upgrading, and implementing new functionalities.
- ✧ **Collaboration & Communication:** Worked closely in a 10-team-member research group consisting of professors, PhD students, and research assistants; Actively participated in meetings and contributed to team discussions.
- ✧ **Software Tools:** Developed applications using Unity and Microsoft Visual Studio, integrating various SDKs from different device platforms. Utilized Git for version control and Office 365 for documentation purposes.
- ✧ **Outcomes:** Developed two major system versions with enhanced functionalities, utilized for department demonstrations and as part of ongoing research initiatives.

PROJECT EXPERIENCE

3DGM: 3D Gaussian Model for Animation and Texturing **10/2023 – present**

- ✧ **System**: Developed a mesh proxy-based 3D Gaussian renderer supporting novel animation and UV mapping.
- ✧ **Evaluation**: Achieved superior novel-view and animation synthesis quality over traditional 3D Gaussian Splatting; successfully implemented texture transferring. Ongoing experiments aim to further validate the improvements.
- ✧ **Participation**: Conducted literature reviews, designed methodologies, implemented systems, carried out experiments, and contributed to academic writing.
- ✧ **Outcome**: Pre-printed on arXiv; submitted to Pacific Graphics 2024.

KCube-KG: Multi-user Knowledge Graph Guided Mind Map Editor in Edu-metaverse **04/2024 – 02/2024**

- ✧ **System**: Created a real-time communication mind map editor integrated with a knowledge graph for enhanced brainstorming in VR environments.
- ✧ **User-study**: Conducted a pilot study with 24 participants, demonstrating heightened engagement and effectiveness in collaborative learning within the education metaverse, compared to traditional online meeting and collaborative tools.
- ✧ **Participation**: Performed system design and implementation, conducted user studies, crafted demonstrative figures, and authored academic papers.
- ✧ **Outcome**: Published in IEEE Transactions on Learning Technologies.

Slides Plus: Automatic Slides Publication for PowerPoint – Undergraduate Capstone Project **10/2022 - 04/2023**

- ✧ **System**: Developed an enhancement tool for Microsoft PowerPoint, incorporating interactive features and mind maps for enriched online and offline class presentations.
- ✧ **User-study**: The tool's usability was highly praised, achieving over 90% satisfaction among 16 participants in perceived usability assessments.
- ✧ **Participation**: Managed system design, documentation, full-stack development, user studies, data analysis, reporting.
- ✧ **Outcome**: Received the Excellent Presentation in the Best Project Award Competition (Department of Computing, PolyU) and InfoTech Job Market Driven Scholarship (Info Tech, HK)

A CAVE-VR System for Tertiary Architecture, Engineering, and Construction (AEC) Education **09/2021 - 03/2022**

- ✧ **System**: Designed and developed an immersive educational software for CAVE systems, enhancing learning experiences for students in AEC fields.
- ✧ **User-study**: Engaged 104 students in a controlled experiment, demonstrating significant improvements in learning acquisition and user satisfaction, compared to the traditional offline teaching environment.
- ✧ **Participation**: Responsible for system & interaction design and development, user study, figure demonstration, and academic paper writing
- ✧ **Outcome**: Research published in the Journal of Civil Engineering Education

A Learned-based Human Removal and Inpainting Framework **06/2022-07/2022**

- ✧ **System**: Engineered an automated image processing system capable of accurately detecting and seamlessly removing human figures from photos while maintaining the integrity of the background.
- ✧ **Evaluation**: The system successfully restored most images without visible defects or residues.
- ✧ **Participation**: Reviewed literature, designed methodologies, implemented solutions, conducted experiments, and wrote academic papers.
- ✧ **Outcome**: Findings published research on the System's Efficacy in Applied and Computational Engineering

PUBLICATIONS

(**Submitted**) 3D Gaussian Model for Animation and Texturing*; **Xiangzhi Eric Wang**, Zackary P. T. Sin; ArXiv*

(**Published**) Knowledge-Graph-Driven Mind Mapping for Immersive Collaborative Learning: A Pilot Study in Edu-Metaverse*; JIA, Ye; **WANG, Xiangzhi Eric**; SIN, Zackary P. T.; WU, Chun Hung; NG, Peter; HUANG, Xiao; BACIU, George; CAO, Jiannong; LI, Qing; IEEE Transactions on Learning Technologies*

(**Published**) Examining the Effects of Immersive Learning Environment in Tertiary AEC Education: A CAVE-VR System for Students' Perception and Technology Acceptance*; **Xiangzhi Wang**, Mo Chou, Xinyu Lai, Jingren Tang, Junyu Chen, Wai Kei Kong, Hung-Lin Chi, Michael C.H. Yam; Journal of Civil Engineering Education*

(**Published**) Precise Human Removal and Inpainting using MaskRCNN and LaMa*; **Xiangzhi Wang**; 4th International Conference on Computing and Data Science (CONF-CDS 2022).*