

WANG XIANGZHI

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EDUCATION BACKGROUND

The Hong Kong Polytechnic University (Hongkong)

09/2019 – 07/2023

BSc (HONS) Computing

GPA: 3.33 / 4.3

Core Courses: *Object-Oriented Programming; Data Structures; Database Systems; Operating Systems; Computer Organization; Software Engineering; System Programming; Computer System Security; Legal Aspects and Ethics of Computing; Human-Computer Interaction; Machine Learning; Computer Vision;*

Honors:

- Excellent Presentation in Best Project Award Competition, 2023 Summer
- Dean's Honor List (5%), 2022 Fall

Scholarships:

- InfoTech Job Market Driven Scholarship 2023, 12000HKD
- Greater Bay Area Virtual Internship Programme, 5000HKD
- Undergraduate Research and Innovation Scheme (PolyU), 14000HKD (accumulated)

PUBLICATIONS

- **(Under Review)**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, Michael C.H. Yam; Journal of Civil Engineering Education*
- Precise Human Removal and Inpainting using MaskRCNN and LaMa; *Xiangzhi Wang; 4th International Conference on Computing and Data Science (CONF-CDS 2022)*

RESEARCH EXPERIENCE

Monopoly-GP10: A Command-Line Based Monopoly Game – Group Project

10/2021 – 11/2021

Position: *Group leader*

<https://github.com/WPCJATH/MonopolyGP-10>

- ✧ Designed a Multiplayer Monopoly game using Model-View-Controller (MVC) architecture
- ✧ Created a quasi-GUI framework to support the User Interface of the Terminal
- ✧ Added animation to improve the game's playability
- ✧ Utilized multithreading to enhance game flow control
- ✧ Programmed robot players, allowing a single player to play the game and select the robots' play levels

Art-SafeBox: A Digital Artwork Sharing and Selling Website – Group Project

03/2022 – 04/2022

Position: *Group leader*

<https://github.com/WPCJATH/ART-SAFEBOX>

- ✧ Designed and developed a secure website for digital artwork sharing and sales.
- ✧ Implemented a privacy-preserving mechanism to safeguard user data and artwork.
- ✧ Built the backend using Django Python Server and SQLite.
- ✧ Secured all database collections with AES cipher encryption.
- ✧ Implemented SSL/TLS1.3 to protect communication between clients/browsers and the server.

A CAVE-VR System for Tertiary Architecture, Engineering, and Construction (AEC) Education – Research Group Project

09/2021 – 03/2022

Position: *System designer and developer*

- ✧ Two main scenes in the system: (1) The Exploration Scene - users follow a guide to explore a restored interior scene of a building; (2) The Inspection Scene - users observe the building components from multiple angles, disassemble them, and learn their names and functions
- ✧ Extensive use of 3D models, 3D conversation boxes, and status bars in the system
- ✧ Utilized State Transition Network to develop the system

- ✧ Implemented a timer to ensure all students experience the system before the end of the course
- ✧ Designed a Teleporter to reduce 3D vertigo and facilitate player movement.

Slides Plus: Automatic Slides Publication for PowerPoint – Capstone Project(Individual) 10/2022 – 04/2023

Position: *Full-stack programmer, System Designer, UI designer, Product Manager*

<https://slidesplus.org>

- ✧ Identified limitations of native PowerPoint applications
- ✧ Designed system mechanisms, usage scenarios, and user interfaces
- ✧ Implemented a 2 clients one server approach: one client for students on a typical website and another for educators on PowerPoint add-ins.
- ✧ Utilized online presentations, mind-maps, and in-class questions to increase student-educator interaction
- ✧ Conducted a user-study on exploring perceived ease of use (perceived usability) and perceived usefulness with a sample size of 16 people
- ✧ Received high praise as the perceived usability exceeded 90% of computer software

A Learned-based Human Removal and Inpainting Framework – Individual Research Project

09/2019 – 07/2023

- ✧ Developed an automatic image processing system for detecting and naturally erasing human bodies and faces from images while preserving the background.
- ✧ Utilized the latest versions of Mask-RCNN and Large Mask Inpainting (LaMa) for performing human segmentation and image inpainting tasks.
- ✧ Operational flow involved: (1) Running Mask-RCNN on the input image to generate a binary pixel-to-pixel mask of the detected human; (2) Dilating the mask to increase its coverage of the human border; (3) Feeding the input image and dilated mask into the LaMa network to produce a final human-free image.
- ✧ Published research on the System's Efficacy in Applied and Computational Engineering in March 2023.

WORKING EXPERIENCE

BLUESKY IT(INT'L) CO LTD. (Remote)

06/2022 – 07/2022

Position: *Web Developer*

- ✧ Conducted website data migration by using Python to crawl and upload data in batches to the new website, overcoming the problem of obtaining required data only from the front section without background control permission.
- ✧ Conducted API development for a travel website under .NET framework and REST API specification.
- ✧ Took charge of backend tourism orders, including adding, viewing, changing, and deleting works.
- ✧ Applied asynchronous programming, lazy loading, and test development techniques to improve the efficiency and functionality of the backend system.

HK PolyU, Department of Computing

02/2023 - 07/2023

Position: *VR/XR Developer*

- ✧ Updated, adjusted, and polished functions and interactions on a VR/XR software to assist undergraduate students in designing study plan with their academic advisor.
- ✧ Proposed new solutions for system upgrades.
- ✧ Maintained two versions of the system: one for CAVE System and one for VR Helmets with passthrough support.

TECHNICAL SKILLS

Programming Skills: Python, Java, C, C++, C#, .Net, Unity, Docker, Web Full-stack.

IDE: Microsoft Visual Studio, JetBrains Family, Sublime Text3, Microsoft VS Code

Specialties: UI Design, Software Design and Development, Requirement Analysis, Web Full-stack Development, Graphic Designing, Photography, Video Editing