Yaxuan (Stella) MAO

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EDUCATION

MS in Human Centered Design & Engineering, University of Washington (Seattle) 2025.09 - 2027.06

Relevant Courses: User-centered Design, Design Process Resilience, Experimental Research Methods

BSc in Creative Media, City University of Hong Kong 2020.08 - 2024.06

Relevant Course: User Experience Research and Design, Visual Communication (UI/UX), Interdisciplinary Research, Data Structure, AI Game Programming, Algorithm, Multi-modal Interface, Computer Vision, Computer Graphics

PROFESSIONAL EXPERIENCE

Digital China | AI Researcher Intern 2025.04 – 2025.09

- Improved agent performance in digital human resource scenarios by designing a structured planning framework
- Fine-tuned Qwen using LoRA, QLoRA, and FlashAttention via llama-factory; applied the Berkeley Function-Calling Leaderboard and Abstract Syntax Tree comparison for model evaluation; integrated MCP unify tool calling in agent workflows
- Increased **function-calling accuracy from 32% to 86%** with the Routine structure; co-authored Routine: A Structural Planning Framework for LLM Agent System in Enterprise, submitted to arXiv

Youth Incubator | UI Designer 2024.06 - 2024.10

- Collaborated with a cross-functional development team to design and implement UI components using **WebPress, HTML, CSS, and JavaScript**, improving website usability and visual appeal for **over 1,500 monthly visitors**.
- Maintained brand and design consistency by updating over 30+ UI elements to align with new course offerings and refreshed organizational branding, **resulting in a 15% increase in user engagement on key pages**.

Tencent Games | Internship 2022.06 - 2022.08

- Designed immersive gameplay scenarios in Unreal Engine 4 based on **player behavior analysis**, improving **user engagement and overall game flow clarity**.

SeeWall Limited | Co-Founder & Product Designer 2021.08 - 2023.02

- Led **user-centered research** and **iterative design** to develop assistive tools for visually impaired users, conducting interviews and **usability tests with 50+ participants**.
- Translated research insights into accessible product solutions — such as an audio-guided navigation app and wearable obstacle-detection belt—**enhancing usability and emotional confidence** among target users.

RESEARCH EXPERIENCE

Tsinghua Laboratory of Brain and Intelligence, Tsinghua University 2025.4 – Current

- Conducted research on **embodied intelligence systems** to explore how multi-modal sensory integration influences **human-robot interaction and user experience**.
- Reconstructed a **dummy robot baseline** and **designed interaction experiments** integrating vision, speech, and gesture modalities, improving the **system's response accuracy** and **perceived naturalness**.
- Applied a **mixed-methods research approach**, combining **qualitative insights (interviews, thematic coding) and quantitative analysis (usability metrics, task performance data)** to inform **interaction design principles** for future human--robot interfaces.

Synteraction (formerly NUS-HCI Lab), City University of Hong Kong 2024.05 - 2025.03

- Conducted qualitative and literature-based research on AI-enabled artifact creation, examining how **users perceive and attribute agency, creativity, and ethics to AI-generated products**.
- Developed a **conceptual framework** for evaluating human-AI co-creation experiences, informing **ethical design practices and guidelines for responsible AI interaction**.
- **Collaborated with interdisciplinary researchers in HCI and cognitive science** to integrate user perception studies into broader AI ethics discussions.

BiWell, City University of Hong Kong 2023.06 - 2025.03

- Led **co-design workshops** with **children, guardians, and dentists** to capture diverse perspectives on pediatric dental experiences and anxiety triggers.
- Conducted **qualitative analysis** of workshop data, identifying key emotional and behavioral themes that informed the **design**

of a VR-based intervention system.

- Collaborated with engineers to prototype an **immersive VR experience** in Unreal Engine, improving children's **comfort and engagement** during dental visits.

NUS-HCI Lab, National University of Singapore 2023.04 - 2023.08

- Designed a **robotic guide dog system** using **ROS (Robot Operating System)**, focusing on **multi-modal feedback** (audio, haptic, and visual cues) to support visually impaired navigation.
- Conducted **user studies and interviews** with participants to evaluate system usability, gathering qualitative insights that informed **interaction flow and feedback design**.
- Iteratively **refined the prototype** to improve **user comfort, trust, and navigation efficiency** during testing.

Studio for Narrative Spaces, City University of Hong Kong 2022.01 - 2023.10

- Investigated how **non-humanoid robots** communicate error cues and recovery intentions through motion design, developing and implementing **movement algorithms** to improve **transparency and user trust**.
- Conducted **user studies** on **emotion recognition through handwriting analysis**, examining how features such as **slant, pressure, and speed** affect human perception of emotional intent.
- Applied **Neural Style Transfer** to generate 360° **VR environments** representing distinct emotional tones, then evaluated user emotional responses through **surveys and interviews**.

PUBLICATIONS

P1 **Yaxuan Mao**, Yanheng Li, Duo Gong, Pengcheng An, Yuhan Luo. 2025. "Can I Decorate My Teeth With Diamonds?": Exploring Multi-Stakeholder P erspectives on Using VR to Reduce Children's Dental Anxiety. In *Proceedings of the 28th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW).*

P2 Katie Xue, **Yaxuan Mao**, Junnan Yu, Yuhan Luo. 2025. Toward Interactive Reading: Co-designing with Adolescents to Explore Opportunities for Overcoming Reading Challenges. In *Proceedings of the ACM Conference on Interaction Design and Children (IDC '25) WiP.*

P3 Yanheng Li, Long Bai, **Yaxuan Mao**, Xuening Peng, Zehao Zhang, Antoni B Chan, Jixing Li, Xin Tong, RAY LC. 2024. Affecting Audience Valence and Arousal in 360 Immersive Environments: How Powerful Neural Style Transfer Is? In *Proceedings of the International Conference on Human-Computer Interaction (HCII).*

P4 Yanheng Li, **Yaxuan Mao**, Ray LC. 2023. Communicating Failure Recovery with Robotic Body Movement. In *Proceedings of the 21th IEEE International Conference on Robotics and Automation (ICRA)*, workshop. [Published]

P5 Yanheng Li, Long Bai, **Yaxuan Mao**, Hongliang Ren, Yu Qiao, Xin Tong and Ray LC. 2023. Rethinking Pain Communication of Patients with Alzheimer's Disease through E-textile Interaction Design. In *Proceedings of Frontiers in Human Neuroscience.*

P6 Yanheng Li, Long Bai, **Yaxuan Mao**, Xuening Peng, Zehao Zhang, Xin Tong, Ray LC. 2023. The Exploration and Evaluation of Generating Affective 360◦ Panoramic VR Environments Through Neural Style Transfer. In *Proceedings of the 30th IEEE International Conference on Virtual Reality and 3D User Interfaces (VR).*

P7 Yanheng Li, Luoying Lin, Xinyan Li, **Yaxuan Mao** and RAY LC. 2023. "Nice to meet you!": Expressing Emotions with Movement Gestures and Textual Content in Automatic Handwriting Robots. In *Proceedings of the 18th ACM/IEEE International Conference on Human Robot Interaction (HRI)*, late-breaking report.

SKILLS

Programming: C++, C#, JavaScript, CSS, HTML, Python, Arduino, Processing, SQL, OpenCV, OpenFramework, D3.js, ROS

Design: Adobe Photoshop/Illustrator/Premiere/After Effects, UE5, Unity, Figma, Maya

AWARDS

- Third Prize, "Chuang Hui Xiang Xiang" Innovation and Entrepreneurship Competition
- Seed Fund Award (a fund of HK$100,000 to develop innovative ideas into a start-up company), HK Tech 300
- HK Tech Tiger (top 10% of the school)
- Special Award, Qianhai Guangdong - Hong Kong - Macao Youth Innovation and Entrepreneurship Competition
- Hong Kong Government Scholarship Award