

# Liuchuan Yu (He/Him)

CS PHD CANDIDATE | DEDICATED TO AI + XR

Fairfax, VA, 22032, USA

☎ (+1) 571-473-6778 | ✉ [liuchuan@acm.org](mailto:liuchuan@acm.org) | 🌐 [www.chuang.e.org](http://www.chuang.e.org) | 🗣️ [luffy-yu](https://luffy-yu.com) | 📄 [liuchuan-yu-64a44621a](https://liuchuan-yu-64a44621a.github.io)

“Stand Out Fit In”

## Summary

Currently a CS PhD candidate at George Mason University under the guidance of Professor Craig Yu, with research centered on leveraging Artificial Intelligence (AI) and Extended Reality (XR)—including Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR)—to enhance human performance. Published and submitted to top-tier venues such as ACM CHI and IEEE VR, ISMAR, VRST, and Virtual Reality conferences and journals. Recognized through multiple channels: selected as an academic research partner for Meta Project Aria smart glasses program; recipient of several design awards for innovations in AI + XR; and featured on podcasts highlighting impactful VR research. Served as a guest speaker and project mentor for an Augmented Reality course at George Washington University, contributing to immersive systems education and student projects. Technically proficient in Python, Unity, Meta Quest 2/Pro/3, PICO 4 Ultra, Microsoft HoloLens 2, and networked multiplayer development. Hold a bachelor's degree in Remote Sensing, a master's degree in Software Engineering, and a master's degree in Computer Science, with over five years of industry experience as a software/system/machine learning engineer. Interned at PICO Lab, ByteDance in Summer 2025, conducting research on VR teleoperation. Passionate about driving innovation at the intersection of XR and AI to create immersive and transformative experiences.

## Education

### GMU (George Mason University)

Fairfax, VA, USA

PH.D. IN COMPUTER SCIENCE

Aug. 2021 - Present

- Dissertation Topic: **AI-Assisted XR Applications for Human Performance Enhancement**
- **Design Computing and Extended Reality (DCXR)** group supervised by **Prof. Craig Yu**

### GMU (George Mason University)

Fairfax, VA, USA

M.S. IN COMPUTER SCIENCE

Aug. 2021 - May. 2024

- Distinguished Academic Achievement Award

### BJTU (Beijing Jiaotong University)

Haidian, Beijing, China

M.S. IN SOFTWARE ENGINEERING

Sep. 2017 - Jun. 2020

- Thesis: Research on Domain Adaptation and Task Porting Methods for Transfer Learning
- Code: [Transfer Learning Baseline Toolbox Based on Object Oriented Programming](#)
- Code: [Visualize Transfer Learning Datasets](#)

### SDUST (Shandong University of Science and Technology)

Qingdao, Shandong, China

B.S. IN REMOTE SENSING SCIENCE AND TECHNOLOGY

Sep. 2011 - Jun. 2015

- Thesis: Design and Implementation of Photogrammetric Fundamental Algorithms Based on Qt
- Code: [YZCG - Photogrammetry Data Processing System](#)

## Honors & Awards

2025 Dec	<b>PyTorch/ExecuTorch Contributor</b> , <a href="#">PR#16011</a>	Meta
2025 Apr	<b>Silver Winner - Social Design: Design for Society</b> , <a href="#">Float Mind</a>	NY Product Design Awards 2025
2025 Apr	<b>Silver Winner - Virtual Reality (VR) Design</b> , <a href="#">Float Mind</a>	Indigo Design Awards 2025
2025 Apr	<b>Silver Winner - UX, Interface &amp; Navigation for Games</b> , <a href="#">Float Mind</a>	Indigo Design Awards 2025
2025 Mar	<b>Silver Winner - Product Design: Gaming, AR &amp; VR</b> , <a href="#">Float Mind</a>	MUSE Design Awards 2025
2025 Jan	<b>LA Emergency Response Prize</b> , <a href="#">Memoverse</a>	MIT Reality Hack 2025
2025 Jan	<b>XR Design Challenge 2024 Finalist</b> , <a href="#">Float Mind</a>	Immersive Insiders w/ Meta etc.
2025 Jan	<b>XR Design Challenge 2024 Finalist</b> , <a href="#">Meal Master</a>	Immersive Insiders w/ Meta etc.
2024 Dec	<b>Panel Member</b> , <a href="#">AR/VR User Research Panel</a>	Meta
2024 Oct	<b>Best Real-World Game Prize</b> , <a href="#">BloomCraft: Garden Guardians</a>	Niantic Create & Play Challenge
2024 Fall	<b>CSCI 6907-83 Guest Speaker &amp; Project Mentor</b> , <a href="#">Advanced Topics in Augmented Reality (AR)</a>	GWU
2024 Jul	<b>Academic Partner</b> , <a href="#">Project Aria Research Partnership Program</a>	Meta
2024 Jul	<b>VR Work Featured on Podcast</b> , <a href="#">VR Simulations and ADHD in Construction</a>	Peggy Smedley Show
2024 Jun	<b>ACM Professional Membership</b> , EICS 2024 Reviewing Appreciation	ACM
2024 May	<b>Distinguished Academic Achievement Award</b> , Computer Science Department	GMU
2024 Apr	<b>2024 Summer GRA Fellowship</b> , <a href="#">Center for Advancing Human-Machine Partnership (CAHMP)</a>	GMU

## Multimodal Psychophysiological Analysis for Team Situation Awareness in Simulated Construction Environments [CRC 2026]

CHING-YU CHENG; **LIUCHUAN YU**; LAP-FAI YU; BEHZAD ESMAEILI

San Antonio, Texas, USA

Mar. 2026

## Enriching Physical-Virtual Interaction in AR Gaming by Tracking Identical Objects via an Egocentric Partial Observation Frame

**LIUCHUAN YU**; CHING-I HUANG; HSUEH-CHENG WANG; LAP-FAI YU

Virtual Reality

## XRoboToolkit: A Cross-Platform Framework for Robot Teleoperation [SII 2026]

ZHIGEN ZHAO; **LIUCHUAN YU**; KE JING; NING YANG

Cancun, Mexico

Jan. 2026

## Col-Con: A Collaborative and Configurable VR Platform for Construction — A Pipe Installation Case Study

**LIUCHUAN YU**; CHING-YU CHENG; WILLIAM F RANC; JOSHUA DOW; MICHAEL SZILAGYI; HAIKUN HUANG; SUNGSOO RAY HONG; BEHZAD ESMAEILI; LAP-FAI YU

Virtual Reality

## Understanding the Needs and Challenges of Developing Robot Teleoperation Applications using Mixed Reality Headsets [Under Review] [CHI 2026]

**LIUCHUAN YU**; KE JING; ZHIGEN ZHAO; NING YANG; ZHICONG LU

Barcelona, Spain

Apr. 2026

## HieraVisVR: Hierarchical Visual Analytics for Motion-Centric VR Playtesting [Under Review] [CHI 2026]

YONGQI ZHANG; ERDEM MURAT; **LIUCHUAN YU**; HAIKUN HUANG; MINSOO CHOI; CHRISTOS MOUSAS; LAP-FAI YU

Barcelona, Spain

Apr. 2026

## You Are Not Alone: Designing Body Doubling for ADHD in Virtual Reality [Under Review] [CHI 2026]

ZINAT ARA; IMTIAZ BIN RAHIM; PUQI ZHOU; **LIUCHUAN YU**; BEHZAD ESMAEILI; LAP-FAI YU; SUNGSOO RAY HONG

Barcelona, Spain

Apr. 2026

## Memaverse: A Spatial WebAR Social Platform for Memories [VRST 2025]

**LIUCHUAN YU**; YAN ZENG; TINGTING LUO; ZIHAN LI

Montreal, Canada

Nov. 2025

## FloatMind: AI-Driven Emotional Engagement for Gamified Meditation in Mixed Reality [ISMAR 2025]

**LIUCHUAN YU**; SHUQI LIAO; YAN ZENG; TINGTING LUO; ZIHAN LI

Daejeon, South Korea

Oct. 2025

## Multi-Player VR Marble Run Game for Physics Co-Learning [ISMAR 2025]

WILLIAM RANC; THANH NGUYEN; **LIUCHUAN YU**; YONGQI ZHANG; MINYOUNG KIM; HAIKUN HUANG; LAP-FAI YU

Daejeon, South Korea

Oct. 2025

## Visual Allocation of Teams In The Construction Industry: Team Situation Awareness Under Information Overload In Human-AI Collaboration [AHFE 2025]

CHING-YU CHENG; **LIUCHUAN YU**; LAP-FAI YU; BEHZAD ESMAEILI

Orlando, Florida, USA

Jul. 2025

## Player-Centric Difficulty Prediction for Parameterized VR Platformer Gameplay [Under Review]

ERDEM MURAT; **LIUCHUAN YU**; SIRAJ SABAH; HAIKUN HUANG; LAP-FAI YU

IEEE Transactions on Visualization and Computer Graphic

## HoloCook: A Real-Time Remote Mixed Reality Cooking Tutoring System [HCII 2024]

**LIUCHUAN YU**; BO HAN; SONGQING CHEN; LAP-FAI YU

Washington DC, USA

Jul. 2024

## HoloAAC: A Mixed Reality AAC Application for People with Expressive Language Difficulties [HCII 2024]

Washington DC, USA

LIUCHUAN YU; HUINING FENG; RAWAN ALGHOFALI; BOYOUNG BYUN; TIFFANY O'NEAL; SWATI RAMPALLI; YOOSUN CHUNG; VIVIAN GENARO MOTTI; LAP-FAI YU

Jul. 2024

## Establishing Design Computing and Extended Reality Facilities for Remote Virtual Reality Training [IEEEVR 2023]

Shanghai, China

LAP-FAI YU; CHANGYANG LI; YONGQI ZHANG; RAWAN ALGHOFALI; HAIKUN HUANG; LIUCHUAN YU; HUIMIN LIU; MINSOO CHOI; BRENDA BANNAN; CHRISTOS MOUSAS

Mar. 2023

## Synthesizing Shared Space Virtual Reality Fire Evacuation Training Drills [ISMAR 2022]

Singapore, Singapore

HUIMIN LIU; MINSOO CHOI; LIUCHUAN YU; ALEXANDROS KOILIAS; LAP-FAI YU; CHRISTOS MOUSAS

Oct. 2022

## Reviewing

---

- 2025 **Reviewer**, Computer Animation and Virtual Worlds
- 2025 **Reviewer**, VRST 2025 Papers
- 2025 **Reviewer**, ISMAR 2025 Papers
- 2025 **Reviewer**, Computer Animation and Virtual Worlds
- 2024 **Reviewer**, PRESENCE: Virtual and Augmented Reality
- 2024 **Reviewer**, CHI 2025 Papers
- 2024 **Reviewer**, IEEE VR 2025 Papers
- 2024 **Reviewer**, VRST 2024 Papers
- 2024 **Reviewer**, ISS 2024 Papers
- 2024 **Reviewer**, AutomotiveUI 2024 Works in Progress
- 2024 **Reviewer**, ISMAR 2024 Posters
- 2024 **Reviewer**, ISMAR 2024 Conference Papers
- 2024 **Reviewer**, ISMAR 2024 Journal Papers
- 2024 **Reviewer**, EICS 2024 Demos and Posters
- 2023 **Reviewer**, IEEE VR 2023 Workshop: Workshop: 3D Content Creation for Simulated Training in XR
- 2022 **Reviewer**, IEEE VR 2022 Workshop: 3D Content Creation for Sim. Training (TrainingXR)

## Graduate Teaching/Research Assistant

---

### GRADUATE RESEARCH ASSISTANT

- 2024 **Summer**, Predicting Team Cohesion in Collaborative VR Construction Scenarios
- 2023 **Summer**, Multiplayer VR Construction Training Platform Using Quest Pro
- 2022 **Summer**, Supporting Dynamic Scene on AR Using HoloLens 2

### GRADUATE TEACHING ASSISTANT

- 2026 **Spring**, CS551 Computer Graphics
- 2025 **Fall**, CS685 Autonomous Robotics
- 2025 **Spring**, CS452 Virtual Reality
- 2024 **Fall**, CS551 Computer Graphics
- 2024 **Spring**, CS310 Data Structures
- 2023 **Fall**, CS452 Virtual Reality
- 2023 **Spring**, CS310 Data Structures
- 2022 **Fall**, CS310 Data Structures
- 2022 **Spring**, CS211 Object Oriented Programming
- 2021 **Fall**, CS211 Object Oriented Programming

## Volunteering

---

- 2022 - **President**, Computer Science Graduate Student Association (CSGSA)
- 2021 **Volunteer**, Gradstravaganza Picnic

GMU

GMU

## Work Experience [Intern & FTE]

---

### PICO Lab, ByteDance Inc.

San Jose, CA, USA

TELEOPERATION RESEARCH INTERN

May. 2025 - Aug. 2025

- Conduct research in robot teleoperation and human-robot interaction.
- Develop and evaluate novel control schemes for robotic systems using VR interfaces.
- Collaborated with sales teams to present technical details and prepare user manuals for company products.
- Implement and test integration of various input devices (gloves, motion trackers) for dexterous manipulation.
- Design and optimize stereo vision systems for enhanced spatial awareness.
- Prototype VR applications using Unity for robot teleoperation.
- Conduct user studies and performance evaluations.
- Collaborate with interdisciplinary team members on system integration.

### JingHang Co., Ltd.

Beijing, China

PYTHON SOFTWARE ENGINEER

Mar. 2021 - Apr. 2021

- Developed a standardized storage format for English examination data, including A-Level, IELTS, and TOEFL.
- Performed extraction, transformation, and loading (ETL) of unstructured data into a unified, structured format.
- Designed and implemented a web interface for seamless integration and usage by other departments.

### KoudaiCaifu Co., Ltd.

Beijing, China

FINANCE DEVELOPMENT ENGINEER

Aug. 2020 - Mar. 2021

- Managed and maintained the Intelligent Investment Consultant System, ensuring data stream accuracy and reliability.
- Identified and resolved bugs in the company's online systems and applications, ensuring smooth operations.
- Enhanced departmental efficiency by introducing innovative utilities and engineering methodologies.

### LinkDoc Co., Ltd.

Beijing, China

PYTHON SYSTEM R&D ENGINEER

Aug. 2018 - Dec. 2019

- Led the development, optimization, and maintenance of the Clinical Information Extraction System.
- Enhanced structural accuracy across multiple modules of electronic medical records (EMRs).
- Designed and maintained a PyCharm IDE plugin to support syntax highlighting, auto-completion, and function navigation for a Domain-Specific Language (DSL).

### EmoKit Co., Ltd.

Beijing, China

MACHINE LEARNING ENGINEER

Feb. 2018 - Jul. 2018

- Led research and development of machine learning algorithms to advance project outcomes.
- Applied machine learning techniques to support anti-fraud initiatives in the financial industry.
- Integrated advanced algorithms to drive project progress and efficiency.
- Established and introduced a centralized background algorithm center to streamline development and deployment.

### WaterTek Corp.

Beijing, China

SOFTWARE ENGINEER

Jul. 2015 - Feb. 2018

- Conducted research on the organization and storage of spatio-temporal big data to improve system efficiency.
- Developed, packaged, and maintained core algorithms using C/C++ for robust performance.
- Designed and implemented an indoor navigation application for the iOS platform.

### Esri China Co., Ltd.

Beijing, China

TECHNOLOGY ENGINEER INTERN

Aug. 2014 - Feb. 2015

- Developed prototypes using C#, C++, Java, HTML, and JavaScript on the ArcGIS platform to meet client requirements.
- Designed database structures and authored SQL queries to support application functionality.
- Collaborated with sales teams to present technical details and prepare user manuals for company products.

## Extracurricular Activity

---

### HMC (Human Motion Creator)

Python

SOLO

- 🤖 **Text-to-Motion Generation:** Powered by [Tencent HY-Motion 1.0](#) and [Meta MHR \(Momentum Human Rig\)](#).
- 🕶️ **Meta XR-Ready:** Compatible with [SMPLX](#) and [Meta Movement SDK](#).
- ⭐ **Easy Use:** FBX output with embedded animation.
- [Video](#) | [Code](#)

### Reality Copilot (Your Copilot in Real Reality)

Meta Horizon Start Developer  
Competition

SOLO

- Reality Copilot is an AI assistant that understands and enhances our physical world in mixed reality.
- 🗣️ **Voice-First Interaction**, 🎙️ **Hardware Recording with Microphone and Speaker**, 📧 **Context-Aware Email**, Powered by 🏠 [FastVLM](#), 🗂️ [SAM3](#), 🌐 [SAM3D](#), and 🌐 [Gemini/OpenAI](#).
- [Video](#) | [Devpost](#)

## Memoverse (🏆 LA Emergency Response Prize)

MIT Reality Hack 2025

DEVELOPER

- A mobile AR experience allows users to explore 3D scans of sites before the fire and share memories, preserving the essence of lost spaces and offering comfort to those affected.
- [Video](#) | [8th Wall](#)
- Team members: [Zihan Li](#), [Yan Zeng](#), [Tingting Luo](#), and [Ernest Choi](#).

## Float Mind (Finalist)

XR Design Challenge 2024

DEVELOPER

- Float Mind is an AI-powered MR gamified meditation app designed for stress relief and immersive relaxation.
- [Short Video](#) | [Long Video](#) | [Walk-Through Video on Windows](#) | [Windows Executable](#) | [Github](#)
- Team members: [Zihan Li](#), [Yan Zeng](#), [Tingting Luo](#), and [Shuqi Liao](#).
- 🏆 NY Product Design Awards 2025 | 🏆 Indigo Design Awards 2025 | 🏆 MUSE Design Awards 2025

## Meal Master (Finalist)

XR Design Challenge 2024

DEVELOPER

- The Meal Master is an innovative MR cooking assistant designed to help users make informed, healthy meal choices while simplifying the cooking process.
- [Video](#)
- Team members: [Yvie Zhang](#)

## BloomCraft: Garden Guardians (🏆 Best Real-Word Game Prize)

Niantic Studio

CORE DEVELOPER

- Discover, plant, and protect a sunflower in our game! Help from Red Bird, water from clouds, and guard against bugs in this interactive adventure.
- [Video](#) | [8th Wall](#)
- Team members: [Yvie Zhang](#) [Artistic Designer], [Manuel Rebol](#) [User Experience], and [Hurriyet Ok](#) [Project Manager].

## OmniCounter (iOS App)

Objective-C/Swift

DEVELOPER

- OmniCounter is a Fully Functional Calculator that supports basic, scientific, trigonometry, algebra, calculus, combinatorics, datetime, economics, geometry, matrix, vector, number theory, statistics, and so on.

## conda-env-export (PYPI Package)

Python

DEVELOPER

- It's a useful PyPI package that aims to export conda env dependencies and pip requirements to ONE yml file.

## Watermark Terminator (PDF Utility)

Python

DEVELOPER

- It's a simple but powerful application to remove text and/or image watermarks in PDF files and output PDF and/or DOCX files.

## 3to1 (Utility)

Python

DEVELOPER

- It's designed to merge 3 kinds of online course resources (\*.swf, \*.grf, \*.xml) into 1 video.

## Skills

---

<b>XR Development</b>	Unity, Meta XR SDKs, Meta Quest 2/Pro/3, PICO 4 Ultra, Meta Project Aria, Mixed Reality Toolkit (MRTK), HoloLens 2
<b>Programming</b>	C#, Python, C++, Java, C, SQL, LaTeX
<b>Multimedia</b>	Photoshop, Illustrator, Premiere Pro
<b>3D Related</b>	3ds Max, Blender, 3D Scanning, 3D Printing, Laser Cutting
<b>Languages</b>	English, Mandarin