

# Liuchuan Yu (He/Him)

CS PHD CANDIDATE | DEDICATED TO AI + XR

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“Stand Out Fit In”

## Summary

Currently pursuing a Ph.D. in Computer Science at George Mason University, under the guidance of Professor Craig Yu. Conducting research on leveraging Artificial Intelligence (AI) and Extended Reality (XR) technologies, including Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR), to enhance human performance. Skilled in Python, Unity, Meta Quest 2/Pro, 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 5 years of industry experience as a software engineer. Passionate about driving innovation at the intersection of XR and AI to create immersive and transformative experiences.

## Education

### GMU (George Mason University)

PH.D. IN COMPUTER SCIENCE

Fairfax, VA, USA

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)

M.S. IN COMPUTER SCIENCE

Fairfax, VA, USA

Aug. 2021 - May. 2024

- Distinguished Academic Achievement Award

### BJTU (Beijing Jiaotong University)

M.S. IN SOFTWARE ENGINEERING

Haidian, Beijing, China

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)

B.S. IN REMOTE SENSING SCIENCE AND TECHNOLOGY

Qingdao, Shandong, China

Sep. 2011 - Jun. 2015

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

## Honors & Awards

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

## Publication

### PAPER

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

Col-Con: A Reconfigurable Virtual Reality Simulation Platform for Exploring Collaborative Behaviors in Construction [Under Review] [Video] [Code]

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

Virtual Reality

Enriching Physical-Virtual Interaction in AR Gaming by Tracking Identical Objects via an Egocentric Partial Observation Frame [Under Review] [Video][Code]

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

IEEE Transactions on Visualization and Computer Graphics

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]

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

Washington DC, USA

Jul. 2024

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

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

Shanghai, China

Mar. 2023

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

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

Singapore, Singapore

Oct. 2022

POSTER

Enriching Physical-Virtual Interaction in AR Gaming by Tracking Identical Real Objects [MIG 2024]

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

Arlington, VA, USA

Nov, 2024

Predicting Users’ Difficulty Perception in a VR Platformer Game [MIG 2024]

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

Arlington, VA, USA

Nov, 2024

Reviewing

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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)

JULY 19, 2025

LIUCHUAN YU · RÉSUMÉ

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# 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

- 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) *GMU*
- 2021 **Volunteer**, Gradstravaganza Picnic *GMU*

## Work Experience [Intern & FTE]

### ByteDance Inc.

*San Jose, CA, USA*

#### TELEOPERATION RESEARCH INTERN (PICO-LAB)

*May. 2025 - Present*

- 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.

SOFTWARE ENGINEER

Beijing, China

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.

TECHNOLOGY ENGINEER INTERN

Beijing, China

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

### 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 Exectable](#) | [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, Mixed Reality Toolkit (MRTK), Quest 2, Quest Pro, 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