

Liuchuan Yu (He/His)

CS PHD STUDENT | 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

- Research interests: **AI-assisted XR applications for human performance enhancement**
- **Design Computing and Extended Reality (DCXR)** group supervised by **Professor 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 Jan	XR Design Challenge 2024 Finalist , Float Mind	<i>Immersive Insiders w/ Meta etc.</i>
2025 Jan	XR Design Challenge 2024 Finalist , Meal Master	<i>Immersive Insiders w/ Meta etc.</i>
2024 Dec	Panel Member , AR/VR User Research Panel	<i>Meta</i>
2024 Oct	🏆 Best Real-World Game Prize , BloomCraft: Garden Guardians	<i>Niantic Create & Play Challenge</i>
2024 Fall	CSCI 6907-83 Guest Speaker & Project Mentor , Advanced Topics in Augmented Reality (AR)	<i>GWU</i>
2024 Jul	Academic Partner , Project Aria Research Partnership Program	<i>Meta</i>
2024 Jul	VR Work Featured on Podcast , VR Simulations and ADHD in Construction	<i>Peggy Smedley Show</i>
2024 Jun	ACM Professional Membership , EICS 2024 Reviewing Appreciation	<i>ACM</i>
2024 May	Distinguished Academic Achievement Award , Computer Science Department	<i>GMU</i>
2024 Apr	2024 Summer GRA Fellowship , Center for Advancing Human-Machine Partnership (CAHMP)	<i>GMU</i>

Publication

PAPER

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

Virtual Reality

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

Enriching Physical-Virtual Interaction in AR Gaming by Tracking Identical Real Objects

[Under Review] [Video]

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

IEEE Transactions on Games

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

- 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

- 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

JingHang Co., Ltd.

PYTHON SOFTWARE ENGINEER

Beijing, China
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.

FINANCE DEVELOPMENT ENGINEER

Beijing, China
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.

PYTHON SYSTEM R&D ENGINEER

Beijing, China
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.

MACHINE LEARNING ENGINEER

Beijing, China
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

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](#).

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.
- 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

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