

MENGYU CHEN

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I am a AR/VR researcher, developer and designer with six-year experience in augmented and virtual reality, and five-year experience in human computer interaction.

EDUCATION

University of California Santa Barbara

2016 - 2022 | PhD Media Arts and Technology

Rhode Island School of Design

2013 - 2015 | MFA Digital+Media

Grinnell College

2009 - 2013 | BA Art + East Asian Studies

VISUAL & SPATIAL DESIGN

3ds Max | Maya | Zbrush | Substance | Creative Suite

SOFTWARE DEVELOPMENT

C# .NET | Unity | C++ | DirectX | HLSL | Python | PyTorch
Java | Microsoft Azure | Q# | Quantum Computing

RAPID PROTOTYPING

Laser Cutting | CNC | 3D Printing | Raspberry PI

INDUSTRY EXPERIENCE

Immersive Rendering Intern

JUN 2021 - DEC 2021

Vimmersve Inc. *San Jose, CA*

- Developed a mobile app for 3D interactive video streaming where users can use gesture-based interaction to navigate through 3D video contents in real-time (demoed at AWE 2021).
- Delivered a product prototype that successfully helped the company acquire seed funding from Y Combinator accelerator (acceptance rate 1.5% - 3%).

Immersive Rendering Intern

JUN 2020 - JUN 2021

xPU Architecture, Intel Corporation *Santa Clara, CA*

- Researched and developed an immersive video playback system that lets users to interact with streamed 3D video contents (multi-view synthesis) in real-time using Intel laptop GPU.
- Showcases and published the system at venues such as IEEE ICCV, OSA, and SPIE 2021.
- Published two technical contributions to MPEG-Immersive video standard.

AI Research & Testing Intern

JAN 2020 - JUN 2020

Technology Development, Sony Pictures Entertainment *Los Angeles, CA*

- Invented and patented new machine learning based methods for image contour extraction and moving object segmentation on high-resolution videos (1 patent granted, 1 pending).
- Analyzed and presented new ML techniques to the management team on entertainment media content production tools including face swapping and speech sentiment detection.

Magic Lab Research Intern

JUN 2019 - DEC 2019

R&D Department, PlayStation / Sony Interactive Entertainment *San Mateo, CA*

- Developed a mixed reality experience of emotional and intelligent virtual characters.
- Designed a new hardware based interface for cross-reality user input using a Rubik's cube.
- Collaborated with 3D artist on character design, modeling, animation, and interaction.
- Designed user evaluation task to test trustfulness of AI agents with respect to interactivity.

Interaction & XR Designer

APR 2016 - SEP 2016

D-Gene Digital Technology Co., Ltd. *Shanghai, China*

- Collaborated with R&D team to conceptualize and prototype AR/VR products and interface.
- Researched on 3D reconstruction from lightfield data and point cloud scans.

RESEARCH EXPERIENCE

Graduate Researcher - AR/VR Authoring System

FEB 2020 - PRESENT

Perceptual Engineering Lab / Four Eyes Lab, UCSB *Santa Barbara, CA*

- Design and Develop visual programming tools to let casual users to create AR/VR stories.
- Conduct user studies and collect data to evaluate usability and productivity of the tools.

Graduate Researcher - Spatial Recognition SEP 2019 - JAN 2020

Center for Virtual Environments and Behavior, UCSB Santa Barbara, CA

- Created VR environments and researched on spatial memory, navigation and pathfinding.
- Developed and designed prototyping toolkit for maze-based level creation.

Graduate Researcher - Social Mixed Reality SEP 2017 - JUN 2019

transLAB, UCSB Santa Barbara, CA

- Researched on mixed reality social interaction, haptic interaction, and spatial computing.
- Developed toolkits for rapid worldmaking, procedural content creation, and visual effects.

PUBLICATION

CardsVR: A Two-Person VR Experience with Passive Haptic Feedback from a Deck of Playing Cards

Andrew Huard, **Mengyu Chen**, Misha Sra

IEEE International Symposium on Mixed and Augmented Reality (ISMAR) 2022

EntangleVR: A Visual Programming Interface for Virtual Reality Interactive Scene Generation

Mengyu Chen, Marko Peljhan, Misha Sra

ACM Symposium on Virtual Reality Software and Technology (VRST) 2021

SceneAR: Scene-based Micro Narratives for Sharing and Remixing in Augmented Reality

Mengyu Chen, Andrés Monroy-Hernández, Misha Sra

IEEE International Symposium on Mixed and Augmented Reality (ISMAR) 2021

Simplified Carriage of MPEG Immersive Video in HEVC Bitstream

Mengyu Chen, Basel Salahieh, Max Dmitrichenko, Jill Boyce

Society of Photographic Instrumentation Engineers (SPIE) Optics and Photonics 2021

An Overview of MPEG Immersive Video

Basel Salahieh, **Mengyu Chen**, Jill Boyce

The Optical Society of America (OSA) 3D Image Acquisition and Display 2021

Reincarnation: Virtual Reality Recreation of Surrealist Paintings

Jing Yan, **Mengyu Chen**

ACM Special Interest Group on Computer Graphics and Interactive Techniques (SIGGRAPH) 2019

Biometric Visceral Interface: A Soft Robotic Immersive System for Extended Perception

Mengyu Chen, Jing Yan, Yin Yu

International Symposium on Electronic Art (ISEA) 2019

Biometric Perception Interface: A Multisensory Soft Robotic Agent for Affective Social Interaction

Mengyu Chen, Jing Yan, Yin Yu

International Workshop on Haptic and Audio Interaction Design (HAID) 2019

PATENT

US11410319B2 Hybrid Video Segmentation Aided by Optical Flow for Objects in Motion 2022

M. Chen, M. Zhu, Y. Takashima, O. Chao, D. De La Rosa, M. Lafuente, S. Shapiro Granted

PEER-REVIEW EXPERIENCE

IEEE International Symposium on Mixed and Augmented Reality (ISMAR) 2021, 2022

ACM Computer-Supported Cooperative Work (CSCW) 2022

ACM Special Interest Group on Computer Graphics and Interactive Techniques (SIGGRAPH) 2022

ACM SIGCHI Symposium on Engineering Interactive Computing Systems (EICS) 2022, 2023

GRANTS & AWARDS

Media Arts and Technology Merit-Based Block Grant Fellowship, *UCSB* 2016 - 2021

RISD Bridge Grant on Art & Design Collaboration, *RISD* JUN 2015

Digital Media Best Written Thesis Award, *RISD* MAY 2015

Digital Media Department Merit-Based Fellowships, *RISD* SEP 2013

Division of Student Affairs Art Purchase Prize, *Grinnell College* MAY 2013

CIEE Photography Awards, *Sophia University, Tokyo* JUL 2012

TALKS & WORKSHOPS

EntangleVR - Paper Presentation, VRST 2021 <i>Osaka, Japan</i>	DEC 2021
SceneAR - Paper Presentation, ISMAR 2021 <i>Bari, Italy</i>	OCT 2021
MPEG Immersive Video - Paper Presentation, SPIE 2021 <i>San Diego, California</i>	AUG 2021
Computational Storytelling in AR & VR - Presentation, UNICAM <i>Camerino, Italy</i>	MAT 2021
Biometric Visceral Interface - Presentation, ISEA 2019 <i>Gwangju, South Korea</i>	JUN 2019
Biometric Perception Interface - Presentation, HAID 2019 <i>Lille, France</i>	MAR 2019
Code, Mediation, Ekistics - Talk, Undergraduate Seminar, UCSB <i>California</i>	NOV 2018
Code as Creative Medium - Talk, Undergraduate Seminar, UCSB <i>California</i>	OCT 2018
Intro to 3D Modeling - Workshop, ShanghaiTech University <i>Shanghai, China</i>	AUG 2016
The Energy Propagated - Presentation, ISEA 2015 <i>Vancouver, Canada</i>	AUG 2015
The Flying Machine - Talk, Undergraduate Seminar, RISD <i>Providence, RI</i>	JAN 2015
Pale Firework - Talk, Gelman Gallery <i>Providence, RI</i>	NOV 2014
Evidence Fetish - Panel Discussion, Artspace New Haven <i>New Haven, CT</i>	SEP 2014

TEACHING EXPERIENCE

Transvergence VR Worldmaking , Teaching Assistant, UCSB <i>Santa Barbara, CA</i>	2018 - 2019
Intro to Creative Programming , Instructor, UCSB <i>Santa Barbara, CA</i>	2017
Physical and Tangible Interfaces , Teaching Assistant, UCSB <i>Santa Barbara, CA</i>	FALL 2016
Art_X Architecture , Co-Instructor, Rensselaer Polytechnic Institute <i>Troy, NY</i>	SPRING 2016
War Machine , Co-Instructor, Digital Media, RISD <i>Providence, RI</i>	WINTER 2015

SELECTED INTERNATIONAL EXHIBITIONS

Night Dimension , UCCA Edge, <i>Shanghai, China</i>	AUG 2022
#WhatAYear , Axis Chengdu <i>Chengdu, China</i>	OCT 2020
Currents New Media 2020 , Virtual VR Venue <i>Santa Fe,, NM</i>	AUG 2020
SIGGRAPH 2019 , Immersive Pavilion, Convention Center LA <i>Los Angeles, CA</i>	JUL 2019
Refest 2019 , Navel LA <i>Los Angeles, CA</i>	MAR 2019
Festival Transito MX , National Arts Center <i>Mexico City, Mexico</i>	SEP 2017
Cologne OFF 2016 , Torrance Art Museum <i>Los Angeles, CA</i>	APR 2016
Without Words Film Festival , Les Films Du Gabian <i>Marseilles, France</i>	DEC 2015
The Energy Propagated , Presentation, ISEA 2015 <i>Vancouver, Canada</i>	AUG 2015
It's Never As It Seems , Flux Factory <i>Long Island City, NY</i>	JUL 2015

LANGUAGES

JLPT N1 Certificate , the Japan Foundation and JESS	JAN 2012
English (Fluent), Japanese (Fluent), Chinese (Native), Korean (Beginner)	