

Yunzhe Daniel Wang

RESEARCH · MACHINE LEARNING · SOFTWARE

Los Angeles, CA 90057

☎ (+1) 213-421-9274 | ✉ yunzhewa@usc.edu | 🏠 yunzhe.wang | 📧 wangyz1999 | 🌐 yunzhe-wang | 🎓 Yunzhe Wang

Education

University of Southern California

PHD IN COMPUTER SCIENCE

- Research in Multi-Agent Systems, Large Language Models, Reinforcement Learning, Generative Models

Los Angeles, CA

Aug 2024 - Present

Columbia University

MS IN COMPUTER SCIENCE, MACHINE LEARNING TRACK

- Machine Learning and Robotics Research at Creative Machines Lab

New York, NY

Aug 2021 - May 2023

University of Southern California

BA IN APPLIED MATHEMATICS, BS IN COMPUTATIONAL NEUROSCIENCE, MINOR IN COMPUTER SCIENCE

- Reinforcement Learning Research at USC Cognitive Architecture Lab

Los Angeles, CA

Aug 2017 - May 2021

Experience

University of Southern California

GRADUATE RESEARCH ASSISTANT

- Created a multi-modal Counter-Strike 2 dataset and developed a tactics-understanding foundation model for CS2, enabling advanced analysis of in-game strategies. **Keywords: Multi-Modal Learning, Video Understanding, Esports Analytics**
- Designed an LLM-based framework to align multi-agent behaviors in social simulations with expert data, reducing realism gaps by 84% and enabling cross-scenario transfer in crisis environments. **Keywords: Generative Agents, LLMs + Optimization, Behavioral Alignment**
- Developed a high-speed data-driven CS:GO simulation platform to foster multi-agent tactics research **Keywords: Generative Modeling, Reinforcement Learning, E-sports Analytics**

Los Angeles, CA

Aug 2024 - Present

Bubble Group, Inc.

AI RESIDENT → SOFTWARE ENGINEER II

- Led Generative AI Research and Development for UI/UX Generation in No-Code Platform through Large Language Models and Diffusion Models
- Developed and launched 🌀 Bubble AI PAGE DESIGNER from-zero-to-one, generating customized and responsive interfaces from text prompt
- Designed the overall Large Language Model Agentic (LLM-Agent) architecture and Domain-Specific Language (DSL). These components plan and communicate to generate full-stack web apps while interacting with users, serving as the core backend of the Bubble AI service
- Keywords: Large Language Models, Retrieval-Augmented Generation, AI-Assisted Design

New York, NY

Jul 2023 - Jul 2024

Creative Machines Lab at Columbia University

RESEARCH ASSISTANT

- Developed and implemented a novel deep learning algorithm capable of identifying 12-DOF quadruped robot morphologies from intrinsic motion dynamics (kinaesthesia), enabling control and planning on robots with unseen morphologies 🌀 Paper
- Developed a conversational face robot with co-expressive facial dynamics and can generate lip-synced speech-driven talking faces through novel deep learning algorithms, bridging the gap to enable non-verbal communication capabilities in robots 🌀 Paper
- Led machine learning in both projects, utilized GAN, LSTM, and Transformer Architectures, handling modalities in speech, videos, 3D keypoints, pointcloud, and timeseries (IMU)
- Keywords: Generative AI, Multimodal Learning, Transfer Learning, Model Predictive Control, Human-Robot Interaction

New York, NY

Sep 2021 - May 2023

USC Institute for Creative Technologies

STUDENT WORKER/RESEARCHER

- Developed a Multi-Agent Reinforcement Learning Algorithm that efficiently and approximately solves Traveling Salesman Problem variants for Search-and-Rescue tasks using Graph Transformers, creating a Social AI-Agent that enhances Human-AI teaming 🌀 Paper
- Software development for the Graphical Model aspects of the (Py)Sigma Cognitive Architecture

Los Angeles, CA

Feb 2020 - Aug 2021

Institute of Computing Technology, Chinese Academy of Science

RESEARCH ENGINEER INTERN

- Natural Language Processing Research under Prof. Cungen Cao, focused on Knowledge Extraction
- Developed a rule-based system to improve Chinese Part-of-Speech tagging, boosting downstream knowledge extraction accuracy, integrating heuristic and data-mined rules through pattern matching

Beijing, China

May 2019 - Aug 2019

Skills

AI/ML	PyTorch, Scikit-Learn, PyG, Tensor Programming, Data Visualization, Deep Learning, Large Language Models
Programming	Python, JavaScript/TypeScript, Node.js, MATLAB, LaTeX, Git, C#, Unity, HTML/CSS, Tailwind CSS, SQL, Web Scraping
Languages	English, Chinese

Preprints

1. Yunzhe Wang, Soham Hans, Volkan Ustun. “**X-Ego: Acquiring Team-Level Tactical Situational Awareness via Cross-Egocentric Contrastive Video Representation Learning.**” 2025.
2. Zhiheng Jiang, Yunzhe Wang, Ryan Marr, Ellen Novoseller, Benjamin T. Files, Volkan Ustun. “**GraphAllocBench: A Flexible Benchmark for Preference-Conditioned Multi-Objective Policy Learning.**” 2025.
3. Tianyi Zhang, Xiaolin Zhou, Yunzhe Wang, Erik Cambria, David Traum, Rui Mao. “**Individualized Cognitive Simulation in Large Language Models: Evaluating Different Cognitive Representation Methods.**” 2025.
4. Yuhang Hu, Yunzhe Wang, Judah Goldfeder, Philippe Wyder, Yifeng Cao, Steven Tian, Jiong Lin, Jingran Wang, Mengmeng Wang, Jie Zeng, Cameron Mehlman, Yingke Wang, Delin Zeng, Boyuan Chen, Hod Lipson. “**Learning Realistic Lip Motions for Humanoid Face Robots.**” 2025.

Publications

1. Yunzhe Wang, Gale M. Lucas, Burcin Becerik-Gerber, Volkan Ustun. “**Implicit Behavioral Alignment of Language Agents in Crowd-Based Social Simulations.**” *Empirical Methods in Natural Language Processing (EMNLP 2025)*.
2. Yunzhe Wang, Volkan Ustun, Chris McGroarty. “**A Data-Driven Discretized CS:GO Simulation Environment to Facilitate Strategic Multi-Agent Planning Research.**” *2025 Winter Simulation Conference (WSC 2025)*. [↗](#)
3. Yuhang Hu, Yunzhe Wang, Ruibo Liu, Zhou Shen, Hod Lipson. “**Robot Configuration Identification from Motion Data.**” *International Conference on Intelligent Robots and Systems (IROS 2024)*. [↗](#)
4. Yuhang Hu, Boyuan Chen, Jiong Lin, Yunzhe Wang, Yingke Wang, Cameron Mehlman, Hod Lipson. “**Human-Robot Facial Co-expression.**” *Science Robotics*, 2024. [↗](#)
5. Yunzhe Wang, Nikolos Gurney, Jincheng Zhou, David Pynadath, Volkan Ustun. “**Route Optimization in Service of a Search and Rescue Artificial Social Intelligence Agent.**” *Association for the Advancement of Artificial Intelligence 2021 Fall Symposium Series (AAAI FSS 2021)*. [↗](#)