YUNZHE WANG

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I'm intrigued by numerous aspects of Artificial Intelligence and Cognitive Science, particularly in Efficient Machine Learning including Transfer and Few-Shot Learning, Large Language Model, AI-Agent, and Neural Decoding.

Since GPT-4, I've been deeply contemplating the human-AI relationship: my excitement doesn't solely rest on the creation of AGI, but on ensuring AI trustworthiness and its potential to expedite scientific discovery.

EDUCATION

Columbia University (GPA: 3.96/4.00) — New York, NY
M.S. Computer Science, Machine Learning Track — Aug 2021 - May 2023

University of Southern California (GPA: 3.84/4.00) — Los Angeles, CA
B.S. Computational Neuroscience; B.A. Applied Mathematics; Minor Computer Science — Aug 2017 - May 2021

Relevant Coursework: Machine Learning, Unsupervised Learning, Natural Language Processing, Reinforcement Learning, Applied Computer Vision, Artificial Intelligence, Robotics, Cognitive Neuroscience, Sensation and Perception, Brain Architecture, Neurobiology, Cellular and Molecular Neuroscience, Statistics, Probability Theory, Numerical Methods, Calculus, Optimization, Computer Networks, Social Networks, Databases, Data Structure, Algorithm Analysis, Advanced Algorithms

EXPERIENCE

Bubble.io (No-Code - programming without code) — New York, NY
AI Resident — Jul 2023 - Present

- Generative AI research on text-to-web-application generation leveraging Large Language Model and Diffusion Model.

Creative Machines Lab at Columbia University — New York, NY
Student Researcher — Sep 2021 - May 2023

- Efficient Machine Learning research in Robotics with Prof. Hod Lipson, Dr. Boyuan Chen, and PhD Candidate Yuhang Hu on Transfer Learning, Model Generalization, and Multi-Modal Learning.
- Developed a face robot that can talk/conversate with human-like lips and facial movement and co-express (mimicry with negligible delay) facial expressions with humans, leveraging self-supervised learning, and Multi-modal Transformer.
- Developed a 12-DOF quadruped robot that, given unseen morphology configuration, it can 1) self-identify morphology through kinesthesia, and 2) transfer knowledge for real-time controller optimization via model predictive control.

USC Institute for Creative Technologies — Los Angeles, CA
Student Researcher — Jan 2020 - Aug 2021

- Machine Learning research with Dr. Volkan Ustun and Prof. Paul Rosenbloom on Cognitive Architecture, Reinforcement Learning, and Social AI-Agents.
- Developed route-optimization framework that provides real-time routing suggestions for TSP-like tasks to human search-and-rescue teams, leveraging Reinforcement Learning and Graph-Transformer.
- Software development for Graphical Models in the Sigma Cognitive Architecture (Symbolic AI).

Institute of Computing Technology, Chinese Academy of Science — Beijing, China
Research Internship — May 2019 - Aug 2019

- Natural Language Processing research for Chinese Part-of-Speech tagging system optimization.

PUBLICATION

Efficient Transfer Learning Across Robot Morphologies — 2022 - 2023
Y. Hu, Y. Wang, R. Liu, Z. Shen, H. Lipson.
Submitted to Conference of Robot Learning (CoRL 2023)

Lip Synchronization for Animatronic Robot Face — 2021 - Present
Y. Hu, Yu. Wang, B. Chen, Yi. Wang, J. Lin, H. Lipson.
In Submission to Science Robotics

Human-Robot Facial Co-expression — 2021 - 2023
Y. Hu, B. Chen, J. Lin, Yu. Wang, Yi. Wang, H. Lipson.
Science Robotics (In Revision)

Route Optimization in Service of a Search and Rescue Artificial Social Intelligence Agent — 2020 - 2021
Y. Wang, N. Gurney, J. Zhou, D. Pynadath, V. Ustun.
Association for the Advancement of Artificial Intelligence 2021 Fall Symposium Series (AAAI FSS 2021)

TEACHING EXPERIENCE

Applied Computer Vision (Teaching Assistant) Spring 2023
Introduction to Natural Language Processing (Teaching Assistant) Fall 2022
Introduction to Natural Language Processing (Teaching Assistant) Summer 2022

AWARDS AND HONORS

USC Graduate with Distinction (Magna Cum Laude) 2021
USC Academic Achievement Award 2021
USC Dornsife Dean's List 2017 - 2021
MAA American Mathematical Contest 12 - top 5% 2016

SKILLS

Programming and Development: Python, C++, SQL, JavaScript/TypeScript, Git, LaTeX, ChatGPT
Machine Learning and Data Science: PyTorch, TensorFlow, scikit-learn, Hugging Face, Tensor Programming, Web Scraping
Others: Bilingual in English and Chinese, Photography, Drawing, Culinary