Kaiwen Zhou

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Email: kzhou35@ucsc.edu	Github : //github.com/KevinZ-01	Webpage : https://kevinz-01.github.io/		
Research interests	Multi-modal Learning, Embodied AI, Fou	undation models		
Education	University of California, Santa Cruz			
	Ph.D. in Computer Science and Engineeri	ng Sep. 2021 – Present		
	Advisor: Prof. Xin Eric Wang. GPA: 3.64.			
	B S in Statistics	Sep. 2017 – June 2021		
	Advisor: Prof. Kewei Liang. <i>GPA: 3.89.</i>	Sep. 2017 June 2021		
Work experience	Honda Research Institute			
	Research intern	April 2023 – Dec. 2023		
	Mentor: Kwonjoon Lee			
	Samsung Research America			
	Research intern	June 2022 – Sep. 2022		
	Mentor: Yilin Shen			
Publications	ViCor: Bridging Visual Understanding and Commonsense Reasoning			
	with Large Language Models			
	Kaiwen Zhou, Kwonjoon Lee, Teruhisa Misu, Xin Eric Wang.			
	Preprint 2023.			
	ESC: Exploration with Soft Commonsense Constraints for Zero-shot Object Navigation			
	Kaiwen Zhou, Kaizhi Zheng, Connor Pryor, Yilin Shen, Hongxia Jin,			
	Lise Getoor, Xin Eric Wang.			
	40th International Conference on Machine Learning (ICML), 2023.			
	FedVLN: Privacy-preserving Federated Vision-and-Language Naviga-			
	tion			
17th European Conference on Computer Vision (ECCV), 2022.				
	JARVIS: A Neuro-Symbolic Common	sense Reasoning Framework for		
	Conversational Embodied Agents	Van Forst Linky War at Zon alin Di		
	Xuehai He Xin Eric Wang	rue ran , Jiaiu wang , Zongini Di,		
	Socal NI P 2022			
	Winner Model of the Alexa Prize SimBot	Public Benchmark Challenge		
	Navigation as the Attacker Wishes? Towards Building Byzantine-			
Robust Embodied Agents under Federated Learning				
Yunchao Zhang, Zonglin Di, Kaiwen Zhou , Cihang Xie, Xin Eric Wang.				
	Preprint 2022			
	-			

Selected research experience

Embodied Visual Navigation

Advisor: Prof. Xin Eric Wang, Dr. Kwonjoon Lee Oct. 2023 – Now We are currently studying problems in current visual navigation frameworks.

Visual Commonsense Reasoning with LLM and VLMs

Advisor: Dr. Kwonjoon Lee, Prof. Xin Eric Wang Mar. 2023 – Sep. 2023 We studied the problem of visual commonsense reasoning and defined it into two sub-tasks: visual commonsense inference and visual commonsense understanding. Then, we proposed a framework maximizing the capability of LLMs and VLMs to solve them.

Commonsense Reasoning for Zero-shot Object Navigation

Advisor: Prof. Xin Eric Wang, Dr. Yilin ShenJune 2022 – Jan. 2023We proposed a framework that combines the commonsense reasoning of pre-
trained LLM and classical navigation methods via Probabilistic Soft Logic (PSL)for training-free zero-shot object navigation. We achieve SOTA zero-shot object navigation performance.

Neuro-Symbolic Commonsense Reasoning Framework for Conversational Embodied Agents

Advisor: Prof. Xin Eric WangMar. 2022 – May 2022We proposed a neuro-symbolic method which uses neural methods to acquiresymbolic representation about the task and environment, then uses symbolicreasoning module to reason on the symbolic representation for action genera-tion. Our method won the simbot public challenge.

Privacy-preserving Federated Vision-and-Language Navigation

Advisor: Prof. Xin Eric WangSep. 2021 – Mar. 2022We study the data privacy problem of VLN and propose a federated learning
framework for vision and language navigation. Under this framework we not
only preserve the training and inference data privacy with comparable results
with centralized training, but also outperforms other pre-exploration methods.

Skills	Programming Python, C++, Matlab, R, Pytorch.		
	DL techniques Embodied path and task planning, planning with LLMs, imitation learning, reinforcement learning.		
Other experience	Amazon Alexa Prize SimBot Challenge		

Advisor: Prof. Xin Eric Wang

Jan. 2022 - Apr. 2023

	We investigated the problem of dialog-based embodied instruct on TEACH benchmark and won the first place public challen phase. In the second phase, we are building an interactive en that can finish diverse tasks cooperating with human players. third place in the second phase.	tion following ge in the first bodied agent We won the
Service	Reviewer	
	ICCV 2023 CLVL workshop, Neurips 2023, ICLR 2024	
Teaching experience	Teaching assistant, UC Santa Cruz	Winter 2023
	CSE 20: Beginning Programming in Python	
	Teaching assistant, UC Santa Cruz	Winter 2022
	CSE 20: Beginning Programming in Python	
Honors and	Third Place in Amazon Alexa Prize SimBot Challenge	2023
scholarships	Outstanding undergraduate graduate (Zhejiang University)	2021
	Second-class scholarship (Zhejiang University)	2020
	First-class scholarship (Hailiang Group)	2020
	Second-class scholarship (Zhejiang University)	2019
	Provincial Government Scholarship (Zhejiang Province)	2019