

# Kaiwen Zhou

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**Github:** //github.com/KevinZ-01

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## Research interests

Deep Learning, Natural Language Processing, Multi-modal Learning, Computer Vision, Embodied AI

## Education

### University of California, Santa Cruz

Ph.D. in Computer Science and Engineering

Sep. 2021 – Present

Advisor: Prof. Xin Eric Wang. *GPA: 3.64.*

### Zhejiang University

B.S. in Statistics

Sep. 2017 – June 2021

Advisor: Prof. Kewei Liang. *GPA: 3.89.*

## Work experience

### Samsung Research America

Research intern

June 2022 – Sep. 2022

Mentor: Yilin Shen

## Publications

### FedVLN: Privacy-preserving Federated Vision-and-Language Navigation

Kaiwen Zhou, Xin Eric Wang.

*17th European Conference on Computer Vision (ECCV), 2022.*

### JARVIS: A Neuro-Symbolic Commonsense Reasoning Framework for Conversational Embodied Agents

Kaizhi Zheng\*, Kaiwen Zhou\*, Jing Gu\*, Yue Fan\*, Jialu Wang\*, Zonglin Di, Xuehai He, Xin Eric Wang.

*In arxiv*

## Research experience

### Zero-shot Object Navigation as Semantic Understanding and Commonsense Reasoning

Advisor: Prof. Xin Eric Wang, Dr. Yilin Shen

June. 2022 – Now

We proposed a framework that can leverage the semantic understanding and commonsense reasoning abilities of pre-trained models in other domains for zero-shot object navigation, which requires neither object goal navigation experience (even any navigation experience), nor any data from the navigation environments for training.

### Neuro-Symbolic Commonsense Reasoning Framework for Conversational Embodied Agents

Advisor: Prof. Xin Eric Wang

Mar. 2022 – May 2022

We proposed a neuro-symbolic methods which uses neural methods to acquire symbolic representation about the task and environment, then uses symbolic reasoning module to reason on the symbolic representation for action generation. *Our method won the simbot public challenge.*

## **Privacy-preserving Federated Vision-and-Language Navigation**

Advisor: Prof. Xin Eric Wang

Sep. 2021 – Mar. 2022

We 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.

Teaching experience	Teaching assistant, UC Santa Cruz CSE 20: Beginning Programming in Python	Winter 2022
Other experience	Amazon Alexa Prize SimBot Challenge	Jan. 2022 – Present
Honors and 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
Skills	<b>Programming</b> Python, C++, Matlab, R, Pytorch, Tensorflow.  <b>Languages</b> English, Chinese, Cantonese	
Other interests	Singing, Working out, Traveling, Photographing.	