

Jianing “Jed” Yang

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EDUCATION

- University of Michigan** Aug. 2021 - 2025 (Expected)
Ph.D. in Computer Science and Engineering
Advisor: Joyce Chai
- Carnegie Mellon University** Aug. 2019 - Dec. 2020
Master of Science in Machine Learning
Advisors: Louis-Philippe Morency and Matt Gormley
GPA: 3.94/4.00
- Georgia Institute of Technology** Aug. 2015 - Dec. 2018
Bachelor of Science in Computer Science
GPA: 3.93/4.00

WORK EXPERIENCE

- Meta AI (FAIR)** May 2024 - Present
Research Scientist Intern, FAIR Embodied AI Menlo Park, CA
- Amazon** Feb. 2019 - Aug. 2019
Software Development Engineer, AWS Identity Seattle, WA
- Led a load balancing project to decrease system latency from 20 seconds to milliseconds.
 - Received award for technical soundness and leadership at 2019 Q2 AWS Identity organization meeting.
- Amazon** May 2018 - July 2018
Software Development Engineer Intern, AWS Identity Seattle, WA
- Extended AWS Microsoft Active Directory to support multiple Availability Zones to increase service availability.
- Amazon** May 2017 - July 2017
Software Development Engineer Intern, AWS Identity Seattle, WA
- Designed and implemented a backup mechanism for AWS Simple Active Directory to enhance system reliability.

PUBLICATIONS

1. 3D-GRAND: A Million-Scale Dataset for 3D-LLMs with Better Grounding and Less Hallucination
Jianing Yang, Xuweiyi Chen, Nikhil Madaan, Madhavan Iyengar, Shengyi Qian, David F. Fouhey, Joyce Chai
Pre-print, 2024
2. Multi-Object Hallucination in Vision-Language Models
Xuweiyi Chen, Ziqiao Ma, Xuejun Zhang, Sihan Xu, Shengyi Qian, Jianing Yang, David F. Fouhey, Joyce Chai
NeurIPS, 2024

3. Teaching Embodied Reinforcement Learning Agents: Informativeness and Diversity of Language Use
Jiajun Xi, Yinong He, **Jianing Yang**, Yinpei Dai, Joyce Chai
EMNLP, 2024
4. LLM-Grounder: Open-Vocabulary 3D Visual Grounding with Large Language Model as an Agent
Jianing Yang, Xuweiyi Chen, Shengyi Qian, Nikhil Madaan, Madhavan Iyengar, David F. Fouhey, Joyce Chai
ICRA, 2024
5. Improving Autoregressive Training with Dynamic Oracles
Jianing Yang, Harshine Visvanathan, Yilin Wang, Xinyi Hu, Matthew Gormley
Pre-print, 2024
6. SEAGULL: An Embodied Agent for Instruction Following through Situated Dialog
Yichi Zhang, **Jianing Yang**, Keunwoo Peter Yu, Yinpei Dai, Shane Storks, Yuwei Bao, Jiayi Pan, Nikhil Devraj, Ziqiao Ma, Joyce Chai
Alexa Prize SimBot Challenge Proceedings, 2023
7. DANLI: Deliberative Agent for Following Natural Language Instructions
Yichi Zhang, **Jianing Yang**, Jiayi Pan, Shane Storks, Nikhil Devraj, Ziqiao Ma, Keunwoo Peter Yu, Yuwei Bao, Joyce Chai
EMNLP, 2022
8. MTAG: Modal-Temporal Attention Graph for Unaligned Human Multimodal Language Sequences
Jianing Yang, Yongxin Wang, Ruitao Yi, Yuying Zhu, Azaan Rehman, Amir Zadeh, Soujanya Poria, Louis-Philippe Morency
NAACL, 2021
9. What Gives the Answer Away? Question Answering Bias Analysis on Video QA Datasets
Jianing Yang, Yuying Zhu, Yongxin Wang, Ruitao Yi, Amir Zadeh, Louis-Philippe Morency
Workshop on Multimodal Language, ACL, 2020
10. SUOD: Accelerating Large-Scale Unsupervised Heterogeneous Outlier Detection
Yue Zhao, Xiyang Hu, Cheng Cheng, Cong Wang, Changlin Wan, Wen Wang, **Jianing Yang**, Haoping Bai, Zheng Li, Cao Xiao, Yunlong Wang, Zhi Qiao, Jimeng Sun, Leman Akoglu
MLSys, 2021
11. SUOD: Toward Scalable Unsupervised Outlier Detection
Yue Zhao, Xueying Ding, **Jianing Yang**, Haoping Bai
Artificial Intelligence for Cyber Security workshop, AAAI, 2020

AWARDS

- First Place (\$500,000) in the Amazon Alexa Prize SimBot Challenge (Team Co-leader)

PEER REVIEW SERVICES

- Conferences: ICRA 2024, EMNLP 2023, ACL 2023, EMNLP 2022, COLING 2022
- Workshops: CoRL 2023 LangRob Workshop, NAACL 2021 MAI-Workshop, ACL 2020 MAI-Workshop

ORGANIZATION SERVICES

- Co-organizer of Third Workshop on Multimodal Artificial Intelligence (MAI-Workshop), NAACL 2021

COMMUNITY SERVICES

- Student-Faculty Relation Chair of UM CSE Graduate Student Organization (CSEG), 2022 - 2023

RESEARCH EXPERIENCE

The First Amazon Alexa SimBot Challenge 2021 - 2023 *Team Co-leader*

- Led, orchestrated, monitored, and coordinated a team of 9 members to ensure timely and high-quality delivery of features
- Co-designed and implemented core components of an embodied intelligence system including navigation, vision perception, multi-source state tracking, planning, natural language understanding, natural language generation and dialog policy
- Developed and trained advanced computer vision and natural language understanding models using extensive datasets, resulting in continuous enhancements to the system's capabilities.
- Co-designed and built industry-level DevOps pipeline including code review, unit/integration tests, doc generation, and CI/CD
- Architected and implemented a cloud-based infrastructure using AWS services such as DynamoDB, EC2, S3, CloudWatch, ElasticCache, and Synthetic Canaries to ensure system reliability and scalability
- Proactively monitored customer interactions, pinpointed areas of concern, and implemented enhancements to continuously elevate system stability and customer satisfaction

CMU MultiComp Lab 2019 - 2021 *Graduate Researcher*

- Designed a graph neural network (GNN) algorithm for fusion of multimodal temporal data
- Analyzed language artifacts in video QA datasets
- Built pipeline for multimodal question answering about social situations
- Coordinated annotation of dataset
- Advisor: Prof. Louis-Philippe Morency

CMU ML/NLP Research Group 2019 - 2021 *Graduate Researcher*

- Designed new algorithms to improve scheduled sampling training for seq2seq models
- Validated effectiveness of the method on NER, Machine Translation and Text Summarization tasks
- Advisor: Prof. Matt Gormley

Georgia Tech Machine Learning for Healthcare (SunLab) 2017 - 2018 *Undergraduate Research Assistant*

- Built cardiac arrest prediction model using multimodal temporal data collected from ICU patients.
- Reached out to medical doctor for opinions on feature selection from the clinical perspective.
- Advisor: Prof. Jimeng Sun

TEACHING EXPERIENCE

CUHK Alumni Association AP Training Camp

AP Computer Science Tutor

Sep. 2016 - May 2017

- Gave 1-on-1 lectures to high school students for AP Computer Science.
- Designed and graded homeworks to strengthen student's understanding.

RELEVANT COURSEWORK

PhD/MS Level courses

Convex Optimization (CMU)

Probability and Statistics (CMU)

Advanced Machine Learning (CMU)

Deep Reinforcement Learning (CMU)

Machine Learning with Large Datasets (CMU)

Data Analysis (CMU)

Deep Learning (GaTech)

Natural Language Processing (GaTech)

Computer Vision (GaTech)

Introduction to Robotics and Perception (GaTech)

Introduction to High Performance Computing (GaTech)

Advanced Operating Systems (GaTech)

ADVISED STUDENTS

Xuweiyi Chen (UMich undergrad, 2024 → PhD @ UIUC)

Qianqi Yan (UMich undergrad, 2023 → PhD @ UC Santa Cruz)

Xingyao Wang (UMich undergrad, 2022 → PhD @ UVA)