Jianing "Jed" Yang

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EDUCATION

University of Michigan — Aug. 2021 - Present
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

PUBLICATIONS

1. *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*

2. *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*

3. *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*

4. *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*

5. *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*

6. *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*

7. *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

INDUSTRY EXPERIENCE

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 2017 - July 2017, 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 (2018 project).
· Designed and implemented a backup mechanism for AWS Simple Active Directory to enhance system reliability (2017 project).

TEACHING EXPERIENCE

CUHK Alumni Association AP Training Camp   Sep. 2016 - May 2017
AP Computer Science Tutor

· 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

Xingyao Wang (UMich undergrad → PhD @ UIUC)
Qianqi Yan (UMich undergrad → PhD @ UC Santa Cruz)