

# ZHIHENG (JAMES) JIANG

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## EXPERIENCE

### UNDERGRADUATE RESEARCHER

Los Angeles, CA

*Structures-Computer Interaction Lab at UCLA*

2024-Present

- Working under Prof. M. Khalid Jawed to investigate using LLMs for Robotics
- Developing software to integrate Robot Operating System (ROS) with Anthropic's Claude LLM

### RESEARCH ASSISTANT

Singapore

*Institute of High Performance Computing (IHPC), Agency for Science, Technology and Research*

2020-2021

- Conducted social network analysis research under the mentorship of Dr Hoai Nguyen Huynh
- Developed research methodology to analyze metal music genre community structure using NLP and Network Science
- First Author publication – Unveiling music genre structure through common-interest communities (Springer Social Network Analysis and Mining, Volume 12, Article 35)
- Presented at the Singapore Science and Engineering Fair (Gold Award)

### RESEARCH ASSISTANT

Singapore

*School of Physical and Mathematical Sciences, Nanyang Technological University*

2018-2019

- Conducted Natural Language Processing research under Assoc Prof Cheong Siew Ann
- Developed research methodology to summarize narratives (eg. Sherlock Holmes) into an agency network
- Presented paper at Singapore Youth Science Conference (Distinction) and International Science Youth Forum
- Presented poster at the Singapore Science and Engineering Fair (Finalist)

## EDUCATION

### UNIVERSITY OF CALIFORNIA, LOS ANGELES

Los Angeles, CA

*Bachelor of Science, Computer Science and Engineering*

2024-2028

## SELECTED PROJECTS

### Today I Learnt (TIL) Artificial Intelligence Competition (Advanced Category Champion)

2024

- Achieved the Champion Award in the Advanced Category, competing with university students in Singapore
- Fine-tuned 3 different deep learning models on downstream tasks in Natural Language Processing (Question Answering), Vision Language Modelling (Object Detection and CLIP) and Automatic Speech Recognition
- Developed expertise in adapting large pretrained models with HuggingFace and PyTorch
- Deployed models via Docker containers, and executed models on a robotics task using DJI Robomaster
- Worked with Google Cloud Platform, VertexAI and Google Cloud Artifact Registry

### International Mathematical Modelling Challenge (Who is the Greatest?)

2021

- Determined the Greatest of All Time in individual and team sports, using mathematical modelling
- Won Outstanding Award (Top 2 internationally)

## SELECTED AWARDS

Today I Learnt (TIL) Artificial Intelligence Competition, Advanced Category Champion

2024

International Mathematical Modelling Challenge, Outstanding Award (Top 2 International)

2021

Singapore Science and Engineering Fair, Gold Award

2021

Shopee Code League, Top 15

2021

Singapore National Olympiad in Informatics, Silver Award

2020

## TECHNICAL SKILLS

Deep Learning, NLP, Computer Vision, Multimodal models, Complex Systems, Python (Machine Learning), C++, MATLAB, LaTeX