Jie Zhu

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EDUCATION

Michigan State University — Aug 2023
Computer Science Doctor
- Research Areas: Biometric recognition, Multi-modal
- GPA: 4.0/4.0 (Current)

George Washington University — Sep 2021 - May 2023
Computer Science Master — Washington, DC
- GPA: 3.9/4.0

Northeastern University — Aug 2016 - Jun 2020
Computer Science Bachelor — Shenyang, China
- Rank: Top 30%

Publications

[1]. Junwen Chen, **Jie Zhu**, and Yu Kong. 2023. ATM: Action Temporality Modeling for Video Question Answering. In Proceedings of the 31st ACM International Conference on Multimedia (MM '23)

[2]. **Jie Zhu**, Mengsha Hu, Xueyao Liang, Amy Zhang, Rui Liu. Fairness-Sensitive Policy-Gradient Reinforcement Learning for Bias-Mitigated Robotic Assistance (RO-MAN 2024 Submitted)

RESEARCH EXPERIENCES

Fairness in robot learning — Mar 2022 - Dec 2022
Research intern Cognitive Robotics and AI Lab (CRAI), Kent State University — Advisor: Rui Liu
- Proposed 4 fairness issues to evaluate robot bias during interaction with people in the restaurant environment.
- A novel method "Bias detection" was proposed to timely detect robot biases during its service.
- a questionnaire was designed to survey people's attitudes toward the robot's behavior, and 1,000 preferences data were simulated for the robot's bias detection model
- Proposed a method of "Bias detection guidance" to mitigate robot bias.

Video question answering (VQA) — Feb 2022 - Nov 2022
Research intern ACTION Lab, Michigan State University — Advisor: Yu Kong
- Proposed a method of Category and Signal encoding to improve Temporal question answering.
- Introduced Action Temporality Modeling (ATM) for causal/temporal reasoning.
- Enhanced the video representation by incorporating the motion stream that is appearance-free to capture the precise motion.
- Training the visual-text encoding by contrastive learning in an action-centric manner leads to better action representations in both vision and text modalities.

WORK EXPERIENCES

Inter-American Development Bank — Jun 2023 - Aug 2023
AI Analytics Consultant AUG
- Developed web scraping tools and AI applications to collect and process text-based and video-based news, including multilingual speech-to-text conversion.
- Utilized ChatGPT for optimized prompt engineering to identify and extract relevant interview content based on specific keywords.
- Designed a dashboard for news summarization and interview video analysis.

Research of Institute of Tsinghua, Pearl River Delta — Sep 2020 - Aug 2021
Software Engineer Intelligence Center — Guangzhou, China
- Developed and maintained a private voice dataset and collected 10w+ data of voice samples.
- Participated in Speech synthesis work. Propose a novel method of using phonemes instead of text as the input of the TTS model.

- Designed a voice evaluation algorithm that could score the voice quality.
- Applied about 15 relative patents and two of them are the main applicant.

Seeking AI Co. Ltd.　　　　　　　　　　　　　　　　　　　　　Dec 2019 - Apr 2020
R&D intern R&D　　　　　　　　　　　　　　　　　　　　　　　　Guangzhou, China
- Participated in the industrial defect detection and annotate 50k+ data in total.
- Designed the size detection algorithm of Project Patinda to detect the defect products.
- Participated in code maintenance, and learn the process of code development.

PROJECT EXPERIENCES

Implementation of Intellectual Property Management System Base on Blockchain　　　　　　　　　　　　　　　　　　　　　　Mar 2020 - Jun 2020
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- Design the system structure by analyzing the demand of the market.
- Use Flask to build the website, which includes IP register, IP trade and electrical evidence generation functions.

Fake News Information Analysis and Visualization Platform　　　Jun 2018 - Jan 2019
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- Checked and cleansed data, calculated similarities and extracted keywords for 10k+ copies of texts using ELMO model.
- Detected duplicates between new data and the database, with an accuracy rate of 92% in the screening test.

HONORS & AWARDS

Graduate Tuition Fellowship　　　　　　　　　　　　　　　　　　　　Aug 2022
Faculty Awards of Computer Animation　　　　　　　　　　　　　　　Dec 2021
The Third Prize Scholarship　　　　　　　　　　　　　　　Sep 2018 - Jul 2020

Skills

- **Programming Languages:** Python, HTML, CSS, Javascript, Golang, Java, C++, etc.
- **Deep Learning Frameworks:** PyTorch, Hugging Face, TensorFlow
- **Languages:** TOEFL 102(24 Speaking) -- Oct. 27, 2019 Chinese, Cantonese- Native Proficiency
- **Others:** Linux, MacOS, Windows, Microsoft Office, LaTeX (Overleaf), Github, Unity (AR/VR development)

Academic Services & Activities

Teaching Experience
Graduate Teaching Assistant: Computer Animation Fall 2022, Computer Graphic II Spring 2023.
Reviewer: FG 2024