Jie Zhu

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EDUCATION

George Washington University Sep 2021 - May 2023
Computer Science Master Washington, DC
- GPA: 4.0/4.0 (Present)

Northeastern University Aug 2016 - Jun 2020
Information Security Bachelor Shenyang, China
- Rank: Top 30%

Publication

[1]. **Jie Zhu**, Mengsha Hu, Xueyao Liang, Rui Liu. Fairness-Sensitive Policy-Gradient Reinforcement Learning for Bias-Mitigated Robotic Assistance (IEEE Robotics and Automation Letters (RA-L) Submitted)

[2]. Junwen Chen, **Jie Zhu**, Yu Kong. ATM: Action Temporality Modeling for Video Question Answering. (CVPR2023 Submitted)

RESEARCH EXPERIENCES

Fairness in robot learning Mar 2022 - Present
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.
- Design two models for robot bias detection and bias mitigation. Define the reward function according to the fairness issues.
- Building an interactive environment and robot simulation using the MuJoCo platform.
- 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.
- Enhancing 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, leading to better action representations in both vision and text modalities.

WORK EXPERIENCES

Research of Institute of Tsinghua, Pearl River Delta Sep 2020 - Aug 2021
Assistant Engineer(Intern) Artificial Intelligence Center Guangzhou, China
- Develop Voice Conversion project and optimize the training process of AUTOVC model. Apply a patent of "*A method of Text To Speech based on Deep Learning*" during this work.
- Participate in TTS-relative work. Propose a method of using phoneme as the training dataset. Optimizing preprocessing with multi-processing to reduce the time from 20 hours to 1 hour.
- Programming a voice evaluation module which could score different TTS models about voice quality and pronunciation.
- Apply 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
- Participate in the industrial defect detection and annotate 50k+ data in total.
- Design the size detection algorithm of Project Patinda to detect the defect products.
- Participate in code maintenance, and learn the process of code development.

PROJECT EXPERIENCES

Fake News Information Analysis and Visualization Platform Jun 2018 - Jan 2019
Teammate Shenyang, China
- 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.

Implementation of Intellectual Property Management System Base on Blockchain Mar 2020 - Jun 2020
Author Shenyang, China
- 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.

HONORS & AWARDS

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

Skills

- **Tech Stack:** Python: Four-year programming experience, familiar with PyTorch and OpenGL framework
- **Languages:** TOEFL 102(24 Speaking) -- Oct. 27, 2019