ZHENG NING

Ph.D. student (second year), University of Notre Dame, Notre Dame, IN
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RESEARCH INTEREST

Human-computer Interaction (HCI), Human-AI Interaction, Multi-Modal Interaction, and Accessibility.

EDUCATION

University of Notre Dame 09/2021 - Present
Ph.D. of Computer Science Notre Dame, USA
- Advisor: Prof. Toby Jia-Jun Li

University of Electronic Science & Technology of China (UESTC) 09/2016 - 06/2020
Bachelor of Electrical and Electronic Engineering Chengdu, China
- Joint education program with University of Glasgow, UK
- Graduated with First-Class honor degree

PUBLICATIONS

- **PEANUT: A Human-AI Collaborative Tool for Annotating Audio-Visual Data**
  Zheng Zhang*, **Zheng Ning***, Chenliang Xu, Yapeng Tian and Toby Li
  In Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology 2023 (UIST'23)
- **An Empirical Study of Model Errors & User Error Discovery and Repair Strategies in Natural Language Database Queries [Paper]**
  Zheng Ning*, Zheng Zhang*, Tianyi Sun, Tian Yuan, Tianyi Zhang, and Toby Jia-Jun Li
  The 26th International Conference on Intelligent User Interfaces (IUI'23)
- **Human-in-the-Loop Generation of Spatial Audio from Videos with Monaural Audio [Paper][Demo]**
  Zheng Ning*, Zheng Zhang*, Jerrick Ban, Kaiwen Jiang, Ruohong Gan, Yapeng Tian, and Toby Jia-Jun Li
  ECCV 2022 Workshop on Visual Learning of Sounds in Spaces (ECCV-AV4D)
- **On the Relationship Between Counterfactual Explainer and Recommender [Paper]**
  Gang Liu, Zhihan Zhang, **Zheng Ning**, and Meng Jiang
  KDD 2022 Workshop on Data Science and Artificial Intelligence for Responsible Recommendations (KDD-DS4RRS)

RESEARCH PROJECTS

Multimodal exploration of video content for Blind and Visual Impairment (BVI) populations 07/2022 - Present
Leading student researcher, Collaborators: Prof. Yuhang Zhao and Prof. Yapeng Tian
- Developing an accessible tool with various interaction strategies (mouse-keyboard exploration, touch exploration, and mid-air gesture) for BVI populations to explore video content and increase immersion (System built on React & Flask)
- Leveraging state-of-the-art visual-language models to automatically detect key frames, generate associated audio descriptions (ADs), and object-level ADs. (Using Python & Pytorch)
- Conducting formative studies and usability tests to investigate the effectiveness of the system and compare the disparities among different interaction strategies

Human-AI co-creation tool for generating and manipulating spatial audio effects for videos 01/2022 - 09/2022
Leading student researcher, Collaborators: Zheng Zhang, Jerrick Ban, and Prof. Yapeng Tian
- Designed and developed a video creation tool that enables amateur users to interactively generate and manipulate 3D spatial audio effects in videos that only had monaural or stereo audio originally (System built based on React)
- Developed an Adobe Premiere Pro (Pr) plugin that connects the software with the proposed interactive system. (Plugin built with Adobe Common Extensibility Platform (CEP) and ExtendScript)
- Designed and conducted a controlled user study of the system, demonstrating its capability to generate immersive and realistic spatial effects as well as effective support to pos-hoc effect editing for amateur video content creators

GRANTS & HONORS

Graduate Student Professional Development Awards, University of Notre Dame	2023
Gary Marsden Travel Awards, SIGCHI	2023
NVIDIA Academic Hardware Grant ($4,650 in equipment)	2022
Outstanding final year project of Glasgow College, UESTC (Top 10%)	2020
Outstanding Student Scholarship (Top 10%), UESTC	2017 - 2019

LANGUAGES & SKILLS

Program Languages:	Python, Pytorch, React, Flask, Javascript, HTML, SQL, Tensorflow, Matlab
UX Skills:	Qualitative Research, Quantitative Research, Experiment Design
Softwares:	Tableau, Adobe PS, Adobe Premiere Pro, Adobe Audition, Figma, SPSS
Languages:	English – Fluent, Chinese (Mandarin) – Native