ZHENG NING

Ph.D. Student, University of Notre Dame, Notre Dame, USA
(574) 323-0658 | zning@nd.edu | https://zning.co

RESEARCH INTEREST

Human-computer Interaction, Human-AI Interaction, Multi-Modal Interaction, GenAI and Accessibility.

EDUCATION

University of Notre Dame 09/2021 - Present
Ph.D. of Computer Science Notre Dame, USA
- Advisor: *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

PROFESSIONAL EXPERIENCE

Adobe Research 05/2023 - 10/2023
Host: Dingzeyu Li, Valentina Shin, Mackenzie Leake, and Mira Dontcheva Seattle, WA
- **[User research]** Conducted a formative study with 9 video and audio podcast creators, targeting their preferences on adding effects to podcast episodes, and identified key challenges they faced during the video editing process.
- **[System building]** Led the design and development of an interactive system using GenAI to facilitate the assembly and production process of video editing.
- **[Productization]** Collaboratively designed and implemented extensions in Adobe Premiere Pro (Pr) to realize the research idea in the first phase with Adobe Pr and user research teams. Led the development of a Minimum Viable Product (MVP) in Pr and initiated the new feature launch process.

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)***
- Interactive Text-to-SQL Generation via Editable Step-by-Step Explanations
  Yuan Tian, Zheng Zhang, **Zheng Ning**, Toby Jia-Jun Li, Jonathan K. Kummerfeld, Tianyi Zhang
  The 2023 Conference on Empirical Methods in Natural Language Processing ***(EMNLP'23)***
- An Empirical Study of Model Errors & User Error Discovery and Repair Strategies in Natural Language Database Queries
  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 [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
- Exploring Contrast Consistency of Open-Domain Question Answering Systems on Minimally Edited Questions
  Zhihan Zhang, Wenhao Yu, **Zheng Ning**, Mingxuan Ju, Meng Jiang
  Transactions of the Association for Computational Linguistics ***(TACL'23)***
- On the Relationship Between Counterfactual Explainer and Recommender
  Gang Liu, Zhihan Zhang, **Zheng Ning**, and Meng Jiang
  KDD 2022 Workshop on Data Science and Artificial Intelligence for Responsible Recommendations

RESEARCH PROJECTS

Human-AI co-creation of video podcast teasers Adobe Research

Collaborator, with: *Sitong Wang* (Columbia University), *Dingzeyu Li*, *Anh Truong*, and *Mira Dontcheva*

- Contributed to the design and development of an interactive system to support video podcast creators in creating compelling video teasers from long-form podcast episodes. (System built using React, GPT-4, Adobe Common Extensibility Platform (CEP) and ExtendScript)

Multimodal exploration of video content for Blind or Low-Vision (BLV) populations U of Notre Dame

Lead researcher, with: *Yuhang Zhao* (U of Wisconsin-Madison) and *Yapeng Tian* (UT Dallas)

- Developed an accessible tool with various interaction strategies (mouse-keyboard exploration, touch exploration, and mid-air gesture) for BLV populations to explore video content and increase immersion (System built on React & Flask)
- Leveraged state-of-the-art visual-language models to automatically detect key frames, generate associated audio descriptions (ADs), and object-level ADs. (Using Python & Pytorch)
- Conducted user studies with 14 BLV participants 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 U of Notre Dame

Lead researcher, with: *Zheng Zhang*, *Jerrick Ban*, and *Yapeng Tian* (UT Dallas)

- 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 on React)
- 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 post-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

SKILLS

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

COMMUNITY SERVICE

Reviewer	The 2024 CHI Conference on Human Factors in Computing Systems (CHI'24)
Reviewer	The 36th Annual ACM Symposium on User Interface Software and Technology (UIST'23)