

ZHENG NING

Ph.D. Student, University of Notre Dame, Notre Dame, USA

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RESEARCH INTEREST

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

EDUCATION

University of Notre Dame

Ph.D. of Computer Science

09/2021 - Present

Notre Dame, USA

- Advisor: *Toby Jia-Jun Li*

University of Electronic Science & Technology of China (UESTC)

Bachelor of Electrical and Electronic Engineering

09/2016 - 06/2020

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]** Designed and implemented AI agents in Adobe Premiere Pro (Pr) to realize the research idea in the first phase. Collaborated 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)