

# Bingsheng “Arthur” Yao

Postdoctoral Associate in CAMD at Northeastern University

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⌚ [/WorkInTheDark](#)

## Research Focus

My research interests lie at the intersection of **NLP** and **HCI**. My primary focus is to **actively enhance machine reasoning with human rationales**. I further commit to investigate and address **real-world human needs** across a range of professional domains, with the ultimate goal of fostering **human-centered AI collaborations**.

**Employment** Postdoc Research Associate (PI: Prof. Dakuo Wang)  
Northeastern University

📅 Feb 2024 - Current

**Education** Ph.D. in Computer Science (Advisor: Prof. Jim Hendler)  
Rensselaer Polytechnic Institute

📅 Sep 2019 - Jan 2024

MS in Information Technology and Web Science  
Rensselaer Polytechnic Institute

📅 Sep 2018 - May 2019

BS in Computer System Engineering  
Rensselaer Polytechnic Institute

📅 Sep 2014 - May 2018

## Grant

### NSF SCh

📅 Pending

“Improving Early Prediction and Decision-Making for Sepsis with Human-AI Collaboration”, (PI: Prof. Ping Zhang from Ohio State University, **My Role: Writing Thrust 3&4**, Total: \$1,200,000)

### NSF ReDDDoT Phase 1

📅 In Submission

“Responsible design, development, and deployment of an LLM-based collaborative care support system for remote patient monitoring of older adults”, (PI: Prof. Zhan Zhang from Pace University, **My Role: Co-PI**, Total: \$275,000)

### NIH R21

📅 In Submission

“Improving Well-Being of Older Adults with Alzheimer and Mild Cognitive Impairment (MCI) via Digital Phenotyping and LLMs”, (PI: Prof. Varun Mishra from Northeastern University, **My Role: Writing Aim 2**, Total: \$275,000)

## Publications

[P.13] [More Samples or More Prompt Inputs? Exploring Effective In-Context Sampling for LLM Few-Shot Prompt Engineering](#)  
**Bingsheng Yao**, Guiming Chen, Ruishi Zou, Yuxuan Lu, Jiachen Li, Shao Zhang, Sijia Liu, James Hendler, Dakuo Wang  
[NAACL 2024 Findings](#)

[P.12] [Talk2Care: An LLM-based Voice Assistant for Communication between Healthcare Providers and Older Adults](#)  
Ziqi Yang, Xuhai Xu, **Bingsheng Yao**, Shao Zhang, Ethan Rogers, Stephen Intille, Nawar Shara, Dakuo Wang  
[IMWUT 2024](#)

[P.11] [Mental-LLM: Leveraging Large Language Models for Mental Health Prediction via Online Text Data](#)  
Xuhai Xu, **Bingsheng Yao**, Yuanzhe Dong, Saadia Gabriel, Hong Yu, James Hendler, Marzyeh Ghassemi, Anind K Dey, Dakuo Wang  
[IMWUT 2024](#)

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## Publications

- [P.10] **"It's a Fair Game", or Is It? Examining How Users Navigate Disclosure Risks and Benefits When Using LLM-Based Conversational Agents**  
Zhiping Zhang, Michelle Jia, Hao-Ping (Hank) Lee, **Bingsheng Yao**, Sauvik Das, Ada Lerner, Dakuo Wang, Tianshi Li  
**CHI 2024**
- [P.9] **Rethinking Human-AI Collaboration in Complex Medical Decision Making: A Case Study in Sepsis Diagnosis**  
Shao Zhang, Jianing Yu, Xuhai Xu, Changchang Yin, Yuxuan Lu, **Bingsheng Yao**, Melanie Tory, Lace M. Padilla, Jeffrey Caterino, Ping Zhang, Dakuo Wang  
**CHI 2024**
- [P.8] **Beyond Labels: Empowering Human with Natural Language Explanations through a Novel Active-Learning Architecture**  
**Bingsheng Yao**, Ishan Jindal, Lucian Popa, Yannis Katsis, Sayan Ghosh, Lihong He, Yuxuan Lu, Shashank Srivastava, James Hendler, Dakuo Wang  
**EMNLP 2023 Findings**
- [P.7] **'Don't Get Too Technical with Me': A Discourse Structure-Based Framework for Automatic Science Journalism**  
Ronald Cardenas, **Bingsheng Yao**, Dakuo Wang, Yufang Hou  
**EMNLP 2023**
- [P.6] **Are Human Explanations Always Helpful? Towards Objective Evaluation of Human Natural Language Explanations**  
**Bingsheng Yao**, Prithviraj Sen, Lucian Popa, James Hendler, Dakuo Wang  
**ACL 2023 Oral Presentation**
- [P.5] **StoryBuddy: A Human-AI Collaborative Chatbot for Parent-Child Interactive Storytelling with Flexible Parental Involvement**  
Zheng Zhang\*, Ying Xu\*, Yanhao Wang, **Bingsheng Yao**, Daniel Ritchie, Tongshuang Wu, Mo Yu, Dakuo Wang, Toby Jia-Jun Li  
**CHI 2022** - Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems
- [P.4] **Fantastic Questions and Where to Find Them: FairytaleQA -- An Authentic Dataset for Narrative Comprehension**  
Ying Xu\*, Dakuo Wang\*, Mo Yu\*, Daniel Ritchie\*, **Bingsheng Yao**\*, Tongshuang Wu, Zheng Zhang, Toby Jia-Jun Li, Nora Bradford, Branda Sun, Tran Bao Hoang, Yisi Sang, Yufang Hou, Xiaojuan Ma, Diyi Yang, Nanyun Peng, Zhou Yu, Mark Warschauer  
**ACL 2022** - Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)
- [P.3] **It is AI's Turn to Ask Humans a Question: Question-Answer Pair Generation for Children's Story Books**  
**Bingsheng Yao**\*, Dakuo Wang\*, Tongshuang Wu, Tran Hoang, Branda Sun, Toby Jia-Jun Li, Mo Yu, Ying Xu  
**ACL 2022** - Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)
- [P.2] **Narrative Question Answering with Cutting-Edge Open-Domain QA Techniques: A Comprehensive Study**  
Xiangyang Mou\*, Chenghao Yang\*, Mo Yu\*, **Bingsheng Yao**, Xiaoxiao Guo, Saloni Potdar, Hui Su  
**TACL 2021** - Transactions of the Association for Computational Linguistics, Volume 9
- [P.1] **Trust in AutoML: exploring information needs for establishing trust in automated machine learning systems**  
Jaime Drozdal, Justin Weisz, Dakuo Wang, Gaurav Dass, **Bingsheng Yao**, Changruo Zhao, Michael Muller, Lin Ju, Hui Su  
**IUI 2020** - Proceedings of the 25th International Conference on Intelligent User Interfaces

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## In Submission

- [P.17] [Human Still Wins over LLM: An Empirical Study of Active Learning on Domain-Specific Annotation Tasks](#)  
Yuxuan Lu, **Bingsheng Yao**, Shao Zhang, Yun Wang, Peng Zhang, Tun Lu, Toby Jia-Jun Li, Dakuo Wang  
[In Submission](#)
- [P.16] ["Mango Mango, How to Let The Lettuce Dry Without A Spinner?": Exploring User Perceptions of Using An LLM-Based Conversational Assistant Toward Cooking Partner](#)  
Szeyi Chan, Jiachen Li, **Bingsheng Yao**, Amama Mahmood, Chien-Ming Huang, Holly Jimison, Elizabeth D Mynatt, Dakuo Wang  
[In Submission to CHI 2024 - Under Review](#)
- [P.15] [LLM-Powered Conversational Voice Assistants: Interaction Patterns, Opportunities, Challenges, and Design Guidelines](#)  
Amama Mahmood, Junxiang Wang, **Bingsheng Yao**, Dakuo Wang, Chien-Ming Huang  
[In Submission to CHI 2024 - Under Review](#)
- [P.14] [Who Changed the Destiny of Rural Students, and How?: Unpacking ICT-Mediated Remote Education in Rural China](#)  
Yuling Sun, Xiuqi Zhu, Xiaomu Zhou, **Bingsheng Yao**, Kai Zhang, Dakuo Wang, Jiaju Chen, Liang He  
[In Submission to CSCW 2024 - Under Review](#)
- [P.14] [Exploring Parent's Needs for Children-Centered AI to Support Preschool Children's Storybook Reading](#)  
Yuling Sun, Dakuo Wang, **Bingsheng Yao**, Jiaju Chen, Ying Xu, Xiaojuan Ma, Yuxuan Lu, Liang He  
[In Submission to CSCW 2024 - Under Review](#)
- [P.12] [FairytalesCQA: A Dataset for Narrative Comprehension with External Commonsense Knowledge for Children Education](#)  
Jiaju Chen, Yuxuan Lu, Shao Zhang, **Bingsheng Yao**, Yuanzhe Dong, Ying Xu, Yunyao Li, Dakuo Wang, Yuling Sun  
[In Submission](#)
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## Honors

- Member of **Upsilon Pi Epsilon**  Sep 2019 - present  
The International Honor Society for the Computing and Information Disciplines
- Member of **Gamma Nu Eta**  Sep 2019 - present  
The National Information Technology Honor Society
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## Services

- Program Committee**  
EMNLP 23, NAACL 24, ACL ARR (since Aug 23), CHI 24, IUI 24, IMWUT 24, IJHCS
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