

Bowen Wang

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EDUCATION

Tsinghua University

B. Eng in Computer Science and Technology

Beijing, China

Dec. 2020 – Jun. 2024 (Expected)

PUBLICATION

1. **Bowen Wang***, Lihang Pan*, Chun Yu, Yuxuan Chen, Xiangyu Zhang, and Yuanchun Shi. 2023. AutoTask: Executing Arbitrary Voice Commands by Exploring and Learning from Mobile GUI. *Submitted to IMWUT 2023 November*. Under review.
2. Ashwin Ram, **Bowen Wang**, Youqi Wu, Sneha Jaikumar, Benjamin Tan Kuan Wei, Qingyang Xu, Shengdong Zhao, and Haiming Liu. 2024. SimulataR: Exploring the Feasibility of Using Design-Blended Videos for Rapid Prototyping of Assisted Reality. *Submitted to CHI 2024*. Under review.
3. Tian Huang, Chun Yu, Weinan Shi, **Bowen Wang**, David Yang, Yihao Zhu, Zhaocheng Li, and Yuanchun Shi. 2023. Interaction Proxy Manager: Semantic Model Generation and Run-time Support for Reconstructing Ubiquitous User Interfaces of Mobile Services. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* 7, 3, Article 99 (September 2023), 39 pages. <https://doi.org/10.1145/3610929>

RESEARCH EXPERIENCES

HCI Lab at National University of Singapore (NUS-HCI Lab)

Singapore

Research Assistant

Jun. 2023 – Present

Advisor: Prof. Shengdong Zhao

- Contributed to projects (SimulataR, Blackboard Auto Adaptor, TeamPilot etc.) concerning heads-up computing which involves design technologies in AR smart-glasses.
- Delivered a talk at lab, instructing members on creating effective research demo videos, guiding lab members to prepare for CHI paper video submission.
- Spearheaded the TeamPilot project as Project Manager (PM), building up and refining research scope and designing a proxy multi-agent system for simulating virtual collaboration within teamwork.

Pervasive HCI Group of Tsinghua Univ. (PCG Lab)

Beijing, China

Undergraduate Research Assistant

Dec. 2021 – Present

Advisor: Prof. Chun Yu and Prof. Yuanchun Shi

- Contributed to technical HCI projects (Interaction Proxy Manager, TeamPilot) concerning data-driven modeling and computational methods to make user interfaces more accessible and useable.
- Led the AutoTask project as an undergraduate, initiating and designing the framework of AI agent on mobile and proofreading the research paper to be submitted.

PROJECTS

TeamPilot: Multi-Agent System for Augmenting Collaboration

NUS-HCI group & UCLA HCI group

Advisor: Prof. Xiang ‘Anthony’ Chen, Prof. Shengdong Zhao

Sept. 2023 – Present

- Introduced a multi-agent system aimed at simulating and enhancing virtual teamwork collaboration through advanced semantic computing and propagation.
- Designed and developed a teamwork system framework to facilitate distributed agent computing and the construction of the multi-agent. This innovative approach offers robust support for semantic computations in team member management and collaborative team contracts.
- In submission to CSCW’24 in January 2024 as 1st author.

SimulataR: Rapid Prototyping Method for Assisted Reality (aR) Design

NUS-HCI group @NUS

Advisor: Prof. Shengdong Zhao, Dr. Ashwin Ram

August. 2023 – Present

- Proposed a cost-effective method for rapid prototyping of Assisted Reality (aR) designs, blending designs on first-person-view videos;

- Developed the "SimulataR" online web-tool, offering a web-based interface for real-time emulation of aR prototyping experiences using the blended-design approach.
- Conducted a rigorous user experiment (n=9 participants, 12 hours per participant, totaling 108+ hours) to validate that the video-blended design can effectively emulate authentic AR experiences and offers advantages in terms of cost-efficiency and enhanced user experiences.
- Submitted to CHI'24 as 2nd author, under review.

AutoTask: Voice Command Agent on Mobile

PCG Lab @Tsinghua

Advisor: Prof. Chun Yu

Jan. 2023 – Present

- Proposed AutoTask, which is capable of executing arbitrary voice by exploring and learning from mobile GUI via Large Language Model (LLM) agent.
- Introduced the "predict-summarize-feedback" framework, empowering the LLM agent to proactively explore, learn, and reflect on UI tasks, resulting in enhanced adaptability and efficiency.
- Spearheaded the construction of the comprehensive system, and successfully validated its performance on multiple open-source datasets (93% on PixelHelp and UGIF), surpassing benchmark accuracy rates of 46%.
- Submitted to IMWUT'23 (November round) as 1st author, under review.
- Working on open-source code release to benefit the broader community.

Interaction Proxy Manager: Run-time Support System for UI Reconstruction

PCG Lab @Tsinghua

Advisor: Dr. Tian Huang, Prof. Chun Yu, Prof. Yuanchun Shi

Jun. 2022 – Apr. 2023

- Designed and implemented the "Interaction Proxy Manager" system, which enables real-time reconstruction of UIs by accurately modeling the original UI screen.
- Constructed an online Interactive UI modeling platform, effectively decoupling the UI hierarchy, allowing real-time annotations, to establish robust UI application models.
- Pioneered an Interactive Machine Learning (IML) algorithm that achieved a remarkable 100% accuracy rate in UI element identification and labeling tasks after an average of 2.3 interaction rounds.
- Spearheaded comprehensive user experiments and incorporated invaluable feedback from diverse user groups such as UI designers, programmers, and non-programmers, leading to significant enhancements in system efficiency and user experience.
- Accepted by IMWUT'22.

WORK EXPERIENCES

AI-anywhere

California, USA & Beijing, China

Co-founder & Lead Developer

Mar. 2023 – Present

- Co-founded the AI startup with 8 outstanding peer students from Tsinghua, integrating my research initiatives and patents into an AI product designed to deliver tangible benefits in real-world scenarios.
- Served as a core member of the development team, responsible for bridging advanced research insights with the AI product, notably integrating my 'AutoTask' project to facilitate effective UI automation for individuals, especially the disabilities.
- Brainstormed the AI copilot to offer a personalized, context-aware, and platform-independent augmented experience for the users, with 4th rank at Product of the Day in ProductHunt, acquiring 100k+ users and 350,000+ downloads worldwide.

BizSeer Technology

Beijing, China

Data Analysis Engineer

Jun. 2021 – Aug. 2021

- Utilized cutting-edge deep learning algorithms to meticulously clean, analyze, and process authentic banking transaction data, ensuring accuracy and reliability in predictive analytics

AWARDS

- **THU Research and Innovation Scholarship (Top 1%)** Oct. 2023
- **THU Challenge-Cup Competition 2nd Award (Top 5%)** Apr. 2023

SKILLS & INTERESTS

- Programming Language: Python, C++, JavaScript, Rust, R, System Verilog.
- Deep Learning: PyTorch, TensorFlow.