

# Shuai Ma

PHD CANDIDATE · HUMAN COMPUTER INTERACTION

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“Build responsible and effective transparency for human-AI interaction.”

## Research Interest

I am a PhD candidate in HCI Lab at Hong Kong University of Science and Technology (HKUST) supervised by Prof. Xiaojuan Ma.

My research interest lies in Human-AI Interaction. I am especially interested in promoting **transparent communication** between humans and the black-box AI and investigating the trust issues (e.g., **trust calibration**) in human-AI collaboration. Also, I design computational models and run empirical studies to understand users' mental models in **AI-assisted decision-making** and machine (robot) teaching.

## Education

### Hong Kong University of Science and Technology (HKUST)

PH.D. IN COMPUTER SCIENCE AND ENGINEERING

Hong Kong SAR

Sep. 2020 - June. 2024 (expected)

- HCI Lab, CSE Department. Supervisor: Xiaojuan Ma.
- HKUST Redbird PhD Scholarship recipient, Huawei PhD Fellowship recipient

### University of Chinese Academy of Science (UCAS)

M.SC. IN COMPUTER SCIENCE AND TECHNOLOGY

China

Sep. 2017 - July. 2020

- HCI Lab, Institute of Software, Chinese Academy of Science. Supervisor: Feng Tian.
- National Graduate Scholarship recipient
- Thesis: “User Personalized Modeling Method and Application Based on Mixed-initiative Interaction”

### Harbin Institute of Technology (HIT)

B.S. IN COMPUTER SCIENCE AND ENGINEERING

China

Sep. 2013 - July. 2017

- School of Computer Science.
- National Undergraduate Scholarship recipient
- Thesis: “A Mobile-Based Neurological Function Evaluation System for the Elderly”

## Industry Experience

### Huawei 2012 Lab, Human-Machine Interaction Lab

RESEARCH INTERN

Shenzhen, China

June. 2022 - Dec. 2022

- Human-Car Interaction: Human-in-the-loop Driving Route Recommendation for Insensitive Parking Fee Payment.
- XAI in Autonomous Vehicle: Designing Conversational In-Car Explanations for Unexpected Auto-Driving Events.

### Netease Youdao NLP Group

RESEARCH INTERN

Beijing, China

Jan. 2018 - Mar. 2018

- A Language Translation Model from Classical Chinese to Modern Chinese.

### LOHAS Tech (A startup company) Machine Learning Group

RESEARCH INTERN

Beijing, China

Oct. 2017 - Dec. 2017

- Healthcare in People's Daily Lives: Wave Form Recognition Model in Electrocardiogram (ECG) Signal.

### Beijing Key Lab of Human-Computer Interaction

STUDENT RESEARCHER

Beijing, China

Sep. 2016 - June. 2017

- Old Adults' Neurological Functions Evaluation Model and Early-Intervention Design.

## Publications

### Manuscripts and Pre-prints

- M.1 Qian Zhu, Dakuo Wang, **Shuai Ma**, April Yi Wang, Zixin Chen, Udayan Khurana, Xiaojuan Ma. **Understanding Data Scientists' Practice and Experience in Human-AI Collaborative Feature Engineering.** (under review)
- M.2 **Shuai Ma**, Xiaojuan Ma. **Towards Human-centered Design of Explainable Artificial Intelligence (XAI): A Survey of Empirical Studies.** (Working paper)

## Peer-reviewed Conference and Journal Publications

- 2023** C.1 **Shuai Ma**, Ying Lei, Xinru Wang, Chengbo Zheng, Chuhan Shi, Ming Yin, Xiaojuan Ma. *Who Should I Trust: AI or Myself? Leveraging Human and AI Correctness Likelihood to Promote Appropriate Trust in AI-Assisted Decision-Making.* (**CHI 2023**).
- C.2 Chengbo Zheng, Yuheng Wu, Chuhan Shi, **Shuai Ma**, Jiehui Luo, Xiaojuan Ma. *Competent but Rigid: Identifying the Gap in Empowering AI to Participate Equally in Group Decision-Making.* (**CHI 2023**).
- C.3 Chuhan Shi, Yicheng Hu, Shenan Wang, **Shuai Ma**, Chengbo Zheng, Xiaojuan Ma, Qiong Luo. *RetroLens: A Human-AI Collaborative System for Multi-step Retrosynthetic Route Planning.* (**CHI 2023**).
- 2022** J.1 **Shuai Ma**, Mingfei Sun, Xiaojuan Ma. *Modeling Adaptive Expression of Robot Learning Engagement and Exploring its Effects on Human Teachers.* In *ACM Transactions on Computer-Human Interaction.* (**TOCHI 2022**).
- C.4 **Shuai Ma**, Taichang Zhou, Fei Nie, Xiaojuan Ma. *Glancee: An Adaptable System for Instructors to Grasp Student Learning Status in Synchronous Online Classes.* In *The ACM CHI Conference on Human Factors in Computing Systems.* (**CHI 2022**).
- 2021** C.5 Liuping Wang, Dakuo Wang, Feng Tian, Zhenhui Peng, Xiangmin Fan, Zhan Zhang, **Shuai Ma**, Mo Yu, Xiaojuan Ma, Hongan Wang. *CASS: Towards Building a Social-Support Chatbot for Online Health Community.* In *The 26th ACM Conference On Computer-Supported Cooperative Work And Social Computing.* (**CSCW 2021**).
- 2019** C.6 **Shuai Ma**, Zijun Wei, Feng Tian, Xiangmin Fan, Jianming Zhang, Xiaohui Shen, Zhe Lin, Jin Huang, Radomir Mech, Dimitris Samaras, and Hongan Wang. *SmartEye: Assisting Instant Photo Taking via Integrating User Preference with Deep View Proposal Network.* In *The ACM CHI Conference on Human Factors in Computing Systems.* (**CHI 2019**). 🏆 Honorable Mention Award

## Posters, Extended Abstracts, Workshop Papers

- 2019** W.1 Qian Zhu, **Shuai Ma**. *What Did I Miss? Assisting User adaptive Missed Content Reviewing in MOOC Learning.* In *The Adjunct Publication of the 32nd Annual ACM Symposium on User Interface Software and Technology.* (**UIST 2019 Adjunct**).
- W.2 Qian Zhu, **Shuai Ma**, Cuixia Ma. *Pre-screen: Assisting Material Screening in Early-stage of Video Editing.* In *The Adjunct Publication of the 32nd Annual ACM Symposium on User Interface Software and Technology.* (**UIST 2019 Adjunct**).
- W.3 Yunzhi Li, Liuping Wang, **Shuai Ma**, Xiangmin Fan, Zijun Wang, Junfeng Jiao, and Dakuo Wang. *Human-AI Interaction in Healthcare: Three Case Studies About How Patient(s) And Doctors Interact with AI in a Multi-Tiers Healthcare Network.* In *The ACM CHI Conference on Human Factors in Computing Systems (Workshop Paper).* (**CHI 2019 Workshop**).
- 2018** W.4 Jing Gao, Feng Tian, Junjun Fan, Dakuo Wang, Xiangmin Fan, Yicheng Zhu, **Shuai Ma**, Jin Huang, and Hongan Wang. *Implicit Detection of Motor Impairment in Parkinson's Disease from Everyday Smartphone Interactions.* In *The ACM CHI Conference on Human Factors in Computing Systems (Late Breaking Work).* (**CHI LBW 2018**).
- W.5 Liuping Wang, Xiangmin Fan, Feng Tian, Lingjia Deng, **Shuai Ma**, Jin Huang, and Hongan Wang. *mirrorU: Scaffolding Emotional Reflection via In-Situ Assessment and Interactive Feedback.* In *The ACM CHI Conference on Human Factors in Computing Systems (Late Breaking Work).* (**CHI LBW 2018**).

## Patent

- 2019** PT.1 Feng Tian, Jin Huang, Lixin Zhou, Yicheng Zhu, **Shuai Ma**, Hongan Wang. *A Gait Recognition Method and System for Target User in Daily Environment.* Filed: 2019-01-10. Patent No. CN 2019100216329.

## Selected Honors and Awards

- 2022** CHI 2022 Student Volunteer Award  
Special Recognition for Outstanding Reviews
- 2020** HKUST Redbird PhD Scholarship (40,000 HKD)
- 2019** President Scholarship in Chinese Academy of Sciences (only 1%)  
Honorable Mention Award at ACM CHI 2019  
Excellent Paper Award at the Annual Academic Conference of ISCAS
- 2018** National Scholarship for Graduate (only 1%)  
First-Class Scholarship in UCAS
- 2017** Excellence Award for Science Creation Program of Chinese Academy of Sciences  
Special Scholarship for Undergraduates & *Top 10 students* of HIT (only 0.1%)  
Excellent Graduates (first-class honor) in Harbin Institute of Technology
- Before 2016** National Scholarship for Undergraduate (only 1%)  
First-Class Scholarship in HIT (2014, 2015, 2016)

## Competitions

- 2021** Natural Language Processing with Disaster Tweets **Rank: top 1%**
- 2018** Chinese Academy of Science, Postgraduate “Software Programming” Competition 🏆 *Winner*  
The 6<sup>th</sup> Emotion Recognition in the Wild Challenge (EmotiW 2018, held by ACM ICMI 2018). Audio-video Emotion Recognition  
**Rank: top 10%**  
WAD Video Segmentation Challenge (held by IEEE/CVF CVPR 2018). Semantic Segmentation and Recognition of Road Vehicles  
**Rank: 4<sup>th</sup>/141 teams**
- 2016** The 5<sup>th</sup> National Marine Vehicle Design and Manufacturing Competition 🏆 *Winner*  
The 18<sup>th</sup> National Robot Championship (as team leader) 🏆 *Winner*

## Teaching Experience

### Teaching Assistant

- 2021** COMP 1021 Introduction to Computer Science (Hong Kong University of Science and Technology)
- 2020** COMP 1021 Introduction to Computer Science (Hong Kong University of Science and Technology)

### Guest Lecture

- 2019** Introduction to Natural User Interfaces (Beijing Zhongguancun No.1 Primary School)
- 2018** Introduction to Natural User Interfaces (Beijing Science and Innovation Open Day)

## Mentoring Experience

### Advisees

- 2023** Ka Shing (Undergraduate student from HKUST, *co-advisor: Xiaojuan Ma*)  
Quentin (Undergraduate student from HKUST, *co-advisor: Xiaojuan Ma*)
- 2022** Elin (Undergraduate student from KTH, Sweden, *co-advisor: Xiaojuan Ma*)  
Ying Lei (Undergraduate student from East China Normal University, *co-advisor: Xiaojuan Ma*)
- 2021** Fei Nie (Undergraduate student from HKUST, *co-advisor: Xiaojuan Ma*), currently master student at CMU HCII  
Taichang Zhou (Undergraduate student from HKUST, *co-advisor: Xiaojuan Ma*)

## Professional Service

### Program Committees

- 2023** ACM CHI LBW 2023

### Paper Reviewing

- Conference** CHI 2019, 2020, 2021, 2022, 2023, CSCW 2023, UIST 2022, CHI LBW 2022, 2023, WWW 2021
- Journal** TOCHI 2022, Tiis 2023
- 🏆 *Special recognition for outstanding review ACM CHI 2023*

### Community Service

- 2023** Student Volunteer, for ACM CHI 2023
- 2022** Student Volunteer, for ACM CHI 2022  
🏆 *Student Volunteer Award*
- 2019** Web Master, for CHI 2019 Workshop - *HCI in China: Research Agenda, Education Curriculum, Industry Partnership, and Communities Building*  
Student Volunteer, for CHI 2019 *China Night*  
Volunteer, for teaching HCI courses at CCF Rural Education in Lvliang, Shanxi, China

## Skills

- Programming** Language: Python, HTML, Javascript, C#, Java  
Toolkit: Pytorch, Tensorflow, Scikit-learn, Numpy, Matplotlib, Flask, Apache, MySQL
- User Research** User Study Design (between/within) with Mixed methods (Quantitative and Qualitative method), Participatory Design, Survey, Interview, Formative Study, etc.
- Data Analysis** Statistical Analysis (both parameter and non-parameter tests), Qualitative Coding, Thematic Analysis
- AI Practice** Experience with popular Natural Language Processing models (including LLMs), Computer Vision models, and Reinforcement Learning algorithms.
- Others** Robot Operation System (ROS), Unity, Web development, Microsoft Powerpoint, Excel, Adobe Illustrator