Ka I Chan

https://ka-i-chan.github.io/
Email: ckinicola@gmail.com

EDUCATION

Tsinghua University Beijing, China
M.S.E. in Data Science and Information Technology (GPA: 3.97/4.0) 2022.09 – 2025.06 (Expected)
Advisor: Prof. Yuanchun Shi, Pervasive HCI Lab

Tsinghua University Beijing, China
B.S. in Psychology (Major GPA: 3.9/4.0, top 3%) 2018.08 – 2022.06
Honors: Excellent Graduates, Award of Excellence in Academic Performance (top 5%)

UNDER REVIEW MANUSCRIPTS

Beyond Digital Privacy: Uncovering Deeper Attitudes toward Privacy in Home Camera among Older Adults
Submitted to *International Journal of Human Computer Studies* as the third author [pre-print link]

Human Visual Attention Enhances Algorithmic Attention in Autonomous Driving
Submitted to *Nature Machine Intelligence* as the fifth author

RESEARCH EXPERIENCE

Monitoring and Grading Hemifacial Spasm in Postoperative Rehabilitation 2023.06 – Present
Advisors: Prof. Yuntao Wang (Tsinghua University), Prof. Zhicong Lu (City University of Hong Kong)
- Investigated the healthcare needs and challenges of hemifacial spasm (HFS) patients from both rural and urban areas, leading to the creation of an mHealth application that features monitoring and grading algorithms based on data collected in a hospital setting.
- Conducted semi-structured interviews with 12 patients and 3 neurosurgeons to delve into HFS healthcare information-seeking practices in the Chinese context.
- Identified five strategic subnetworks for accessing top-tier medical resources within the broader health information-seeking network by applying open coding and actor-network theory to data analysis.

Brain-Inspired Driving Algorithms and Cognitive Neural Mechanisms of Attention 2023.12 – 2024.05
Advisor: Prof. Jiangtao Gong (Tsinghua University)
- Integrated cognitive model and attention-based deep learning algorithms to enhance autonomous driving tasks, addressing adaptation issues in poorly represented scenarios.
- Proposed neurological and computational models of human attention in traffic hazard detection.
- Responsible for data visualization and representation, EEG and eye-tracking data analysis.

Topic Modeling to Explore Financial Behaviors in Bipolar Disorder 2023.08 – 2023.11
Advisor: Prof. Saeed Abdullah (Penn State University)
- Investigated compulsive buying and risk-taking behaviors observed during manic episodes in bipolar disorder by analyzing legal cases through the Harvard Caselaw Access Project API using NLP techniques.
- Utilized topic-guided thematic analysis, LDA and ChatGPT API to extract and analyze themes from case law related to bankruptcy and bipolar disorder.
- Identified significant themes and trends in legal cases, and developed visualizations illustrating changes in case numbers over time.

Exploring Older Adults' Perception of Home Cameras with Fall Detection 2021.09 – 2023.06

Advisors: Prof. Jihong Jeung, Prof. Jiangtao Gong (Tsinghua University), and Tencent

- Investigated older adults' privacy attitudes towards home cameras via surveys and interviews.
- Gathered insights from older adults on fall detection and emergency response through role-play in the focus group, focusing on two key scenarios based on their post-fall consciousness.
- Explored the connections between older adults' views on privacy, invisibility, concealment, and design language, facilitating their translation of insights into prototypes in a co-design workshop.
- Proposed innovative design guidelines and the PARW Design Model for elder-oriented smart products, emphasizing privacy, stigma avoidance, and user experience.

Impact of LED Masks on People's Communication 2021.09 – 2022.06

Advisor: Prof. Fei Wang, Tsinghua Laboratory of Brain and Intelligence

- Developed an LED mask prototype to explore the potential of LED masks to enhance communication during the pandemic by compensating for the loss of non-verbal cues obscured by traditional masks.
- Designed and conducted two experiments to compare the visual and interactive differences between LED and medical masks via video assessments and real-life conversations, suggesting that LED masks significantly improve interactivity and emotional conveyance.

Lookine: Non-Verbal Social Assistance and Learning System for Blind People 2021.03 – 2021.05

Advisor: Prof. Jia Jia, Tsinghua University

- Conducted quantitative research on the usability and user experience of Lookine, a system for assisting blind individuals in social interactions using visual recognition technology and voice interaction.
- Found that Lookine is significant when facial expressions and emotion of voice/content are inconsistent, and its good user experience enables them to have a more similar experience to that of sighted individuals.

EMPLOYMENT EXPERIENCE

NetEase Games Thunder Fire UX Hangzhou, China

User Experience Researcher for Summer Internship 2021.07 – 2021.08

- Facilitated MMORPG Mobile Games "Chinese Ghost Story", which boasts over 370,000 players.
- Collaborated with game designers and data engineers to enhance player experience via gathering and analyzing player feedback from surveys and interviews.
- Authored 8 reports that analyzed qualitative and quantitative data from over 100,000 players.

SKILLS AND INTERESTS

Computing: Statistical Analysis (Python, SPSS, MATLAB), Machine Learning (NumPy, Pandas, Matplotlib, Sklearn, PyTorch), Front-End Development (HTML/CSS/JavaScript), LaTeX.
Design: UI/UX (Figma), 3D Modeling and Rendering (Blender), Prototyping (Arduino).
Research: Qualitative Methods (Interview, Survey, Focus Group, Participatory Design, Thematic Analysis, Grounded Theory), Quantitative Methods (Experimental Design, Statistical Analysis, EEG and Eye-tracking).

Language: Fluent English (TOEFL BS106), Native Chinese (Mandarin, Cantonese, Hokkien).
Interests: Volunteering (8 years of experience), Music (Piano with ABRSM Grade 7, Former Percussion Member in THUMB), Powerlifting.