

# ZHANG, Yukai

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## EDUCATION

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**The Hong Kong University of Science and Technology (Guangzhou)** Sep 2022 - present  
MPhil in Computational Media and Art GPA: 4.0  
Supervisor: Prof. Mingming FAN  
**The Hong Kong University of Science and Technology (Clear Water Bay)** Sep 2018 - June 2022  
BSc in Integrative Systems and Design, and in Computer Science (First Class Honors) GPA: 3.6

## PROJECT EXPERIENCE

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**VR Hand Redirection for Upper Limb Rehabilitation** Guangzhou, China  
*Software Engineer, Researcher* July 2023 - Sep 2023

- Developed VR-based upper-limb rehabilitation software that uses hand redirection to enhance patient engagement and effort during rehabilitation.
- Organized and conducted a user study with eleven participants with motor impairments at a local hospital to assess the performance and usability of the system.
- The work is under review for CHI2024

**Companion Robots for Older Adults** Guangzhou, China  
*Software Engineer, Researcher* Jun 2022 - Sep 2023

- Implemented a humanoid companion robot equipped with non-verbal communication capabilities for elderly users.
- Conducted an exploratory study with older adults to assess the usability and acceptability of the robot.
- The work is under review for CHI2024.

**Indoor Inspection System for Paul. Y Engineering** Hong Kong SAR  
*Software Engineer, Project Manager* Sep 2021 - Jun 2022

- Led the design and implementation of an indoor defect detection and management system to inspect residential buildings for construction companies. The proposed system is a mobile application that takes photos of defects and automatically documents the exact location of the defect for better traceability.
- Collaborated with Paul Y. Engineering, the largest construction contractor in Hong Kong, to carry out interviews and site visits to understand the needs of construction companies.

**PIVOT Smarthome Experience** Hong Kong SAR  
*Research Intern at TCL AI Lab* Jun 2021 - Oct 2021

- Designed and implemented a gesture-based control system for smart home appliances using an RGBD camera. The system allows users to specify a device with a pointing gesture before using a verbal command to control it, making the interaction more intuitive in rooms with multiple smart devices.
- Collaborated with UX designers and engineers at TCL to implement the system in future TCL products.
- Implemented a proof-of-concept prototype of the system, which won the 2022 IF Design Award ([link](#)).

**Improved MyTag - Luggage Arrival Notification System for the HKIA** Hong Kong SAR  
*Software Engineer, Project Manager* Feb 2021 - Jun 2021

- Collaborated with the Hong Kong International Airport (HKIA) to enhance the MyTag system - a luggage tag notifying passengers via an app when their luggage is delivered to the reclaim belt.
- Created an improved MyTag design in the form of a sticker with a QR code, invisible to the human eye but detectable by UV lights and cameras at the airport, extending the system's functionality to luggage made of all materials.

## SUBMITTED PUBLICATIONS

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Xiong, P., **Zhang, Y.**, Zhang, N., Fu, S., Li, X., Zheng, Y., Zhou, J., Hu, X., & Fan, M. (2024). To Reach the Un-reachable: Exploring the Potential of VR Hand Redirection for Upper Limb Rehabilitation. Paper submitted to CHI 2024.

Wang, M., Yu, K., **Zhang, Y.**, & Fan, M. (2024). Toys or Tools?: An Exploratory Study of Robotic Companionship Conducted with Chinese Retirees. Paper submitted to CHI 2024.

## ADDITIONAL EXPERIENCE

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**UCMP 6030 Cross-disciplinary Design Thinking, HKUST(GZ)** Guangzhou, China  
*Teaching Assistant* Sep 2024 - Present

- Selected as a teaching assistant for Design Thinking, one of the core courses for the graduate program. I give tutorials on quick prototyping and grade course assignments

**The ENTERPRIZE Robotics Team, HKUST**  
*Software Engineer*

Hong Kong SAR  
Sep 2019 - Sep 2020

- Build mock-up testing gear.
- Develop target tracking algorithm for the RoboMaster competition.

## **SKILLS**

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- **Courses:** Assistive Technology Design, Intro to Embedded Systems, Deep Learning in CV, IoT System Integration, Design Thinking
- **Programming:** Python, C++, Java for Android, C# for Unity
- **Physical Prototyping:** 3D modeling (Fusion360, SolidWorks, Rhino), 3D printing, Arduino, STM32
- **Languages:** Chinese (native), English (proficient)