JIAHAO "NICK" LI

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RESEARCH INTEREST

My research combines Human-Computer Interaction (HCI) and Robotics exploring **intelligent user interface** and **design tools** with a focus on user interaction in augmented reality (AR).

EDUCATION

University of California, Los Angeles (UCLA) Sep. 2018 - Present
Ph.D. in Human-Computer Interaction (Major in Mechanical Engineering)
University of California, Los Angeles (UCLA) Sep. 2017 - June. 2018
M.S. in Mechanical Engineering
Shanghai Jiao Tong University, China (SJTU) Sep. 2013 - Jun. 2017
B.S. in Naval Architecture and Ocean Engineering

PROFESSIONAL EXPERIENCE

Adobe Research Summer 2021
Research Intern, mentored by Li-Yi Wei, Rubaiat Habib Kazi and Stephen DiVerdi *Los Angeles, CA (remote)*
- Developed a tool that enables end-users to design interaction between virtual graphics and real objects in Augmented Reality [H5]

UCLA HCI Research Fall 2018 - Present
Graduate Research Assistant, Advised by Xiang 'Anthony' Chen *Los Angeles, CA*
- Developed a design tool to actuate everyday objects [H1]
- Developed an interactive design tool to turn everyday objects into transformable robots [H2]
- Developed a versatile magnetic gripper to enable generic robotic arm to manipulate everyday tools [H3]

UCLA LEMUR Lab Summer 2020
Graduate Research Assistant, Advised by Ankur Mehta *Los Angeles, CA*
- Developed an evaluation system for indoor blimps based on user designed parameters [O2]
- Built a team of indoor blimps to participate in the 99+ aerial soccer game at IUB in Nov. 2020

PARC, A Xerox Company Summer 2019
Research Intern, Mentored by Erva Ulu and Nurcan Ulu *Palo Alto, CA*
- Developed a novel interactive support structure design method for additive manufacturing [O1]

DMAI. Inc Summer 2018 - Summer 2019
Hardware Engineer, Part-time Intern *Los Angeles, CA*
- Developed two educational robots prototypes. The first is a fix-based goose-like robot aiming to interact with toddlers by playing the game *Simon Says*. The second is a biped robot aiming to supervise preschoolers under absence of parents
- Implemented a visual tracking function that enables the walking robot to keep eye on human while walking
- Took part in the system integration in Robotic Operating System *(ROS)*
- Designed outer look of the robots and inner structures to integrate all hardware

PUBLICATIONS

Full Paper in HCI

- [H6] Xiaoying Yang, Jacob Sayono, Jess Xu, **Jiahao "Nick" Li**, Josiah Hester, Yang Zhang. MiniKers: Interaction-Powered Smart Environment Automation. *Submitted to IMWUT*

- [H5] **Jiahao "Nick" Li**, Ruolin Wang, Li-Yi Wei, Rubaiat Habib Kazi, Stephen DiVerdi, Xiang 'Anthony' Chen. RecReality: Authoring Interactive and Embedded Graphics Driven by Everyday Objects with User-defined Mappings. *Submitted to UIST '22*
- [H4] **Jiahao "Nick" Li**, Alexis Samoylov, Jeeeun Kim, Xiang 'Anthony' Chen. Roman: Making Everyday Objects Robotically Manipulable with 3D-printable Add-on Mechanisms. *Proc. ACM CHI 2022.*
- [H3] Abul Al Arabi, **Jiahao "Nick" Li**, Xiang 'Anthony' Chen, Jeeeun Kim. Mobiot: Augmenting everyday objects into moving IoT devices using 3D printed attachments generated by demonstration. *Proc. ACM CHI 2022.*
- [H2] **Jiahao "Nick" Li**, Meilin, Cui, Jeeeun Kim, Xiang 'Anthony' Chen. Romeo: A Design Tool for Embedding Transformable Parts in 3D Models to Robotically Augment Default Functionality. *Proc. ACM UIST 2020. Acceptance Rate: 23%.*.
- [H1] **Jiahao "Nick" Li**, Jeeeun Kim, Xiang 'Anthony' Chen. Robiot: A Design Tool for Actuating Everyday Objects with Automatically Generated 3D Printable Mechanisms. *Proc. ACM UIST 2019. Acceptance Rate: 24.4%.*.

Full Paper in Other Areas

- [O2] Zhaoliang Zheng, **Jiahao "Nick" Li**, Parth Agrawal, Ethan Uetrecht, Zhao Lei, Joseph Prince Mathew, Dinesh Kumar Karri, Ankur Mehta. User Design Parameters Based Design and Evaluation System for Indoor Airships. *In submission to ICRA 2022*.
- [O1] Erva Ulu, Nurcan Gecer Ulu, **Jiahao "Nick" Li** and Walter Hsiao. Curvy: An Interactive Design Tool for Varying Density Support Structures. *Arxiv*.

Papers in Extended Abstracts (Posters, Demos, and Work-in-progress

- [EA1] **Jiahao "Nick" Li**, Jeeeun Kim, Xiang 'Anthony' Chen. Robiot: A Design Tool for Actuating Everyday Objects with Automatically Generated 3D Printable Mechanisms. *Demo in ACM UIST 2019*.

Conference and Workshop Presentations without Proceedings

- [CP1] Ruolin Wang, Yuqi Tang, Hsuan Wei Fan, **Jiahao "Nick" Li**, Xiang 'Anthony' Chen. AuxiScope: Improving Awareness Surroundings for People with Tunnel Vision. *UIST Student Innovation Competition, October 2019.*

SELECTED PRESS COVERAGE

Robiot

- *Turn any object into a robot using this program and a 3D printer.* **New Scientist**, Nov. 2019
- *Robiot Is a Design Tool That Generates Mechanisms to Motorize Everyday Objects.* **Hackster News**, Nov. 2019
- *Robiot Can Automatically Design Handy Household Machines.* **Fabbaloo**, Nov. 2019

PROFESSIONAL SERVICE

Program Committee

- ACM CHI Late Breaking Works (Associate Chair) '20 '21

Reviewer

- ACM UIST '20 '21, ACM CHI '20 '21 '22