Jiahao "Nick" LI

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EDUCATION

2018–2023 University of California, Los Angeles
Ph.D. in Mechanical Engineering
Advisor: Xiang 'Anthony' Chen

2017–2018 University of California, Los Angeles
M.S. in Mechanical Engineering

2013–2017 Shanghai Jiao Tong University
B.E. in Naval Architecture and Ocean Engineering

RESEARCH FOCUS

My research is in the intersection of human-computer interaction, human-AI interaction, large language models, where I design and build interactive systems and AI agents that provide **context-aware assistance in real-world tasks**.

PROFESSIONAL EXPERIENCE

2022/2023 **Meta Reality Labs**, Research Intern. Toronto, Canada
Mentor: Tovi Grossman, Yan Xu
Predicting user intent via in-context learning (LLM) on real-world multimodal information.

2022 **Igarashi Lab at University of Tokyo**, Visiting Ph.D. student Tokyo, Japan
Supervisor: Takeo Igarashi
Data collection pipeline for pose estimation of physical objects.

2021 **Adobe Research**, Research Intern. San Jose, CA
Mentor: Li-Yi Wei, Rubaiat Habib Kazi, Stephen DiVerdi
An interactive creativity-support tool for crafting AR effects driven by physical objects.

2019 **PARC, A Xerox Company**, Research Intern. Palo Alto, CA
Mentor: Erva Ulu, Nurcan Ulu

2018–2019 **DMAI Inc.**, Part-time Robotic Design Engineer. Los Angeles, CA

2018–2023 **UCLA HCI Research**, Research Assistant. Los Angeles, CA

PUBLICATIONS

2023 [C.9] **Jiahao "Nick" Li**, Yan Xu, Tovi Grossman, Stephanie Santosa, Michelle Li. OmniActions: Understanding and Predicting Follow-up Actions on Multimodal Information Using Large Language Models. *Under review*

[C.8] Xingyu "Bruce" Liu, **Jiahao "Nick" Li**, Siyou Pei, Xiuxiu Yuan, David Kim, Xiang 'Anthony' Chen, Ruofei Du. Human I/O: Towards a Unified Approach to Detecting Situational Impairments in Everyday Activities. *Under review*.

[C.7] **Jiahao "Nick" Li***, Toby Chong*, Zhongyi Zhou, Hironori Yoshida, Koji Yatani, Xiang 'Anthony' Chen, Takeo Igarashi. RoCap: A Robotic Data Collection Pipeline for the Pose Estimation of Appearance-Changing Objects. *Under review*.

[C.6] **Jiahao "Nick" Li**, Ruolin Wang, Li-Yi Wei, Rubaiat Habib Kazi, Stephen DiVerdi, Xiang 'Anthony' Chen. RealityPlay: Authoring Interactive and Embedded Graphics Driven by Everyday Objects with User-defined Mappings. *Arxiv*.

2022 [C.5] Xiaoying Yang, Jacob Sayono, Jess Xu, **Jiahao "Nick" Li**, Josiah Hester, Yang Zhang. MiniKers: Interaction-Powered Smart Environment Automation. *In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 6 Issue 3, September. 2022.*

[C.4] **Jiahao "Nick" Li**, Alexis Samoylov, Jeeeun Kim, Xiang 'Anthony' Chen. Roman: Making Everyday Objects Robotically Manipulable with 3D-printable Add-on Mechanisms. *In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22).*

[C.3] 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. *In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22).*

2020 [C.2] **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. *In Proceedings of the 33rd Annual ACM Symposium on User Interface Software and Technology (UIST '20).*

2019 [C.1] **Jiahao "Nick" Li**, Jeeeun Kim, Xiang 'Anthony' Chen. Robiot: A Design Tool for Actuating Everyday Objects with Automatically Generated 3D Printable Mechanisms. *In Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology (UIST '19).*

Posters & Extended Abstract & Workshop

2020/2022 **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. *Demo at ACM UIST 2020 and Poster at ACM UIST 2022*.

2019 **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*.

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 2019.*

Patent

2023 Nurcan Gecer, ULUErva ULU, Walter Hsiao, **Jiahao "Nick" Li**. Controller and 3D printing apparatus for varying density support structures through interpolation of support polygon boundaries with scalar density fields. *US Patent 11654616B2*.

Nurcan Gecer, ULUErva ULU, Walter Hsiao, **Jiahao "Nick" Li**. Interactive design tool for varying density support structures. *US Patent 11639023B2*.

SERVICE

Conference Organizing

2020-2021 **Program Committee, Associate Chair**. ACM CHI Late-Breaking Work

2022 **Student Volunteer.** ACM CHI 2022.

Reviewing

2019–2023 The ACM Symposium on User Interface Software and Technology (UIST).

2020–2023 The ACM Conference on Human Factors in Computing Systems (CHI).

2023 The ACM Special Interest Group on Computer Graphics and Interactive Techniques (SIGGRAPH) Poster

INVITED TALKS

2023 "Making Everyday Objects Physically Interactable with Robotic-augmented Sensing and Actuation."
Dynamic Graphics Project (DGP), University of Toronto (hosted by Bryan Wang).

2022 "Making Everyday Objects Physically Interactable with Robotic-augmented Sensing and Actuation."
Acuated Experience Lab (Ken Nakagaki) and Human Computer Integration Lab (Pedro Lopes), University of Chicago (hosted by Yudai Tanaka).
Purdue University (hosted by Liang He).

PRESS COVERAGE

Keynote and Plenary Addresses

2019 **New Scientist.** Turn any object into a robot using this program and a 3D printer.

Hackster News. Robiot Is a Design Tool That Generates Mechanisms to Motorize Everyday Objects.

Fabbaloo. Robiot Can Automatically Design Handy Household Machines.

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