Yudai Tanaka

PhD student at University of Chicago
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Education

University of Chicago — 09/2020 – Present
Ph.D. Student in Computer Science, Advisor: **Prof. Pedro Lopes** — *Chicago, United States*

University of Tokyo — 04/2015 – 03/2020
Bachelor of Engineering — *Tokyo, Japan*

National University of Singapore — 08/2017 – 05/2018
University-Wide Student Exchange Program — *Singapore*

Professional Experience

Meta Reality Labs — 10/2023 – 01/2024
Research Intern — *Redmond (WA), United States*

Honors and Awards

Best Paper Award at ACM **CHI** — 2023

Best Demo Award at ACM **CHI** — 2022

Daniels Fellowship (one-time stipend of USD 15,000 for selected incoming Ph.D. students) — 2020

Nakajima Foundation Overseas Scholarship (Japanese Ph.D. fellowship, acceptance rate: 9%) — 2020

Best Poster Nominee at ACM **MobileHCI** — 2019

Full Paper Publications

7. Haptic Source-Effector: Full-Body Haptics via Non-Invasive Brain Stimulation.
In Proc. ***CHI 2024***. **Yudai Tanaka**, Jacob Serfaty, Pedro Lopes. Acceptance Rate: 26.3%. (to appear)

6. Interactive Benefits from Switching Electrical to Magnetic Muscle Stimulation.
In Proc. ***UIST 2023***. **Yudai Tanaka**, Akifumi Takahashi, Pedro Lopes. Acceptance Rate: 25.1%.

5. Full-Hand Electro-Tactile without Obstructing Palmar Side of Hand.
In Proc. ***CHI 2023***. **Yudai Tanaka**, Alan Shen, Andy Kong, Pedro Lopes. Acceptance Rate: 27.6%. **Best Paper Award (Top 1%)**

4. LipIO: Enabling Lips as both Input and Output Surface
In Proc. ***CHI 2023***. Arata Jingu, **Yudai Tanaka**, Pedro Lopes. Acceptance Rate: 27.6%.

3. DigituSync: A Dual-User Passive Exoskeleton Glove That Adaptively Shares Hand Gestures.
In Proc. ***UIST 2022***. Jun Nishida, **Yudai Tanaka**, Romain Nith, Pedro Lopes. Acceptance Rate: 25.9%.

2. Electrical Head Actuation: Enabling Interactive Systems to Directly Manipulate Head Orientation.
In Proc. ***CHI 2022***. **Yudai Tanaka**, Jun Nishida, Pedro Lopes. Acceptance Rate: 24.7%. **Best Demo Award**

1. DualVib: Simulating Haptic Sensation of Dynamic Mass by Combining Pseudo-Force and Texture Feedback.
In Proc. ***VRST 2020***. **Yudai Tanaka**, Arata Horie, Xiang 'Anthony' Chen. Acceptance Rate: 26.5%.

Poster/Demo Publications

Demonstration of Full-Hand Electro-Tactile without Obstructing Palmar Side of Hand.
In ***IEEE World Haptics 2023 (Demo)***. **Yudai Tanaka**, Pedro Lopes.

Demonstrating Full-Hand Electro-Tactile without Obstructing Palmar Side of Hand.
In Proc. ***CHI 2023 Interactivity (Demo)***. **Yudai Tanaka**, Alan Shen, Andy Kong, Pedro Lopes.

Demonstration of Electrical Head Actuation: Enabling Interactive Systems to Directly Manipulate Head Orientation.
In Proc. ***SIGGRAPH 2022 Emerging Technologies***. **Yudai Tanaka**, Jun Nishida, Pedro Lopes.

Demonstrating Electrical Head Actuation: Enabling Interactive Systems to Directly Manipulate Head Orientation.
In Proc. ***CHI 2022 Interactivity (Demo)***. **Yudai Tanaka**, Jun Nishida, Pedro Lopes.

Understanding Crowdsourcing Requesters' Wage Setting Behaviors.
In Proc. ***CHI 2022 Late Breaking Work (Poster)***. Kotaro Hara, **Yudai Tanaka**.

BulkScreen: Saliency-Based Automatic Shape Representation of Digital Images with a Vertical Pin-Array Screen.
*In Proc.****TEI 2020 Work in Progress (Poster)***. **Yudai Tanaka**, Arakawa Riku, Hiromu Kawarasaki, Kiyosu, Maeda.

A Formative Study for Record-time Manual Annotation of First-person Videos.
In Proc. ***MobileHCI 2019 Late Breaking Results (Poster)***. **Yudai Tanaka**, Sohei Wakisaka, Masahiko Inami. **Best Poster Nominee**

Invited Talks and Workshops

Remote Haptics via Intercepting Nerves
UCLA HCI (hosted by Dr. Jiahao "Nick" Li). 2023/10/27

Remote Haptic Actuation by Intercepting the Nervous System
Multi-Sensory Devices at University College London (hosted by Prof. Diego Martinez Plasencia). 2023/07/14

Touching the Future: Science and Technology of Multisensory Cutaneous Displays
IEEE World Haptics 2023 Workshop. organized by Lynette Jones and Hsin-Ni Ho. 2023/07/10

Remote Haptic Actuation by Intercepting the Nervous System
HCI Lab at Hokkaido University (hosted by Prof. Daisuke Sakamoto). 2023/05/12

Remote Haptic Actuation by Intercepting the Nervous System
Kajimoto Lab at UEC Tokyo (hosted by Keigo Ushiyama and Prof. Hiroyuki Kajimoto). 2023/05/09

Remote Haptic Actuation by Intercepting the Nervous System
HCI Lab at Saarland University (hosted by Arata Jingu and Prof. Jürgen Steimle). 2023/04/21

Remote Haptic Actuation by Intercepting the Nervous System
University of British Columbia (hosted by Prof. Sydney Fels and Prof. Karon MacLean). 2022/08/12

Challenges to Unlock the Metaverse: Haptics, Gaze, Prototyping tools & more!
SIGGRAPH 2022 Frontiers Workshop. with Pedro Lopes, Michael Nebeling, Shan-Yuan Teng, & Mark Billinghurst. 2022/08/10

Teaching

Teaching Assistant

CMSC 23220: Inventing, Engineering and Understanding Interactive Devices, University of Chicago Winter 2024
CMSC 20300: Introduction to Human Computer Interaction, University of Chicago Fall 2020-2022
CMSC 33240: Emergent Interface Technologies, University of Chicago Winter 2021

Service

Organizing Committee

Student Volunteer Chair for ACM CHI 2024
Poster Chair for Augmented Humans 2023

Program Committee

ACM SUI 2023
ACM CHI Late Breaking Work 2023

Session Chair

"Typing and Pointing" paper session at ACM UIST 2021

Reviewing

ACM CHI (Papers) with **2 special recognition for outstanding reviews** 2020-2024
ACM UIST (Papers) with **1 special recognition for outstanding reviews** 2022-2023

Further reviewing: DIS ('23), VRST ('23), IEEE World Haptics ('23), MobileHCI ('21), IEEE VR ('21), ISMAR ('22), AHs ('22), CHI alt.chi ('22), CHI Interactivity ('21-'22), CHI LBW ('22-'23), TEI WiP ('22), EICS LBW ('21).

Research Experience

UCLA HCI Research, University of California, Los Angeles — 06/2019 – 09/2019
Research Intern advised by **Prof. Xiang 'Anthony' Chen** — *Los Angeles, United States*

SMU HCI Research, Singapore Management University — 01/2019 – 04/2019
Research Intern advised by **Prof. Kotaro Hara** — *Singapore*

Information Somatics Lab, University of Tokyo — 06/2018 – 12/2018
Research Intern advised by **Prof. Masahiko Inami** — *Tokyo, Japan*

Mentoring

Jacob Serfaty (UChicago CS undergraduate student) — 2023/06-

Alan Shen (UChicago CS master student) — 2021/10-

Noor Amin (UChicago CS & NeuroSci undergraduate student) | now: **Riot Games** — 2023/01-2023/06

Arata Jingu (intern from UTokyo) | now: **PhD at Saarland University** with Prof. Jürgen Steimle — 2021/06-2022/04

Andy Kong (intern from CMU) | **PhD at ETH** with Prof. Christian Holz — 2021/06-2021/09

Selected Press Coverage

Shining Science. "Smart glove enhances your sense of touch in virtual reality." — 2023/05/14

New Scientist. "Smart glove enhances your sense of touch in virtual reality." — 2023/05/13

All Things Haptics. "Surprising Poll, Buzzworthy Integrations and the Rumor Mill." — 2023/05/04

TECHEBLOG. "Researchers Develop Full-Hand, Electro-Tactile Feedback for VR Without Needing Gloves." — 2023/04/27

HACKADAY. "TACTILE FEEDBACK IN VR, NO CUMBERSOME GLOVES OR MOTORS REQUIRED." — 2023/04/26

HacksterIO. "Of All the Backhanded Things…" — 2023/04/24

IEEE Spectrum. "Haptic System Creates Finger-Touch Sensations Hardware-Free." — 2023/04/22

PC Gamer. "This computer interface you wear like a mustache will let you open doors and play games with lips." — 2023/04/20

Phone World. "Researchers Develop Lip-Based Keyboard Named LipIO." — 2023/04/17

TECH SMART. "LIPIO: THE FUTURE OF USER INTERFACES FOR PEOPLE WITH DISABILITIES." — 2023/04/17

Ubergizmo. "Open Source Interface Can Turn Your Lips Into a Keyboard." — 2023/04/16

Business Today. "LipIO: Control devices, tune guitar, DJ with your lips and tongue; see how it works." — 2023/04/15

Neowin. "New lip-licking controller LipIO uses your tongue to control devices." — 2023/04/15

Samaa Web. "This tech allows people to control devices using tongue, lips!" — 2023/04/15

GVS. "Tongue-tap controller steers devices with lip-licking." — 2023/04/15

TECH TIMES. "LipIO: This Lip-licking Controller Lets You Control Devices With Your Tongue!" — 2023/04/15

Microsoft MSN. "LipIO: Control devices, tune guitar, DJ with your lips and tongue; see how it works." — 2023/04/15

Droid Gazette. "Lip-licking controller steers devices using tongue taps." — 2023/04/15

Engadget. "Lip-licking controller steers devices using tongue taps." — 2023/04/14

HacksterIO. "Kiss Your Keyboard Goodbye." — 2023/04/14

Yahoo Finance. "Lip-licking controller steers devices using tongue taps." — 2023/04/14

CBS CHICAGO. "Chicago neuroscientist helps woman with no sense of touch learn more about condition." — 2023/02/09

UChicago CS News. "Head's Up: UChicago CS Grad Student Designs Device That Directs User's Head." — 2022/07/26

Adafruit Blog. "Electrical Head Actuation (CHI22 talk) #WearableWednesday." — 2022/05/04

New Scientist. "VR could use a muscle-stimulating device that forces your head to turn." — 2022/05/03

GIZMODO. "These Electrical Probes Forcibly Steer Your Head Toward Lost Items." — 2022/05/02

SYFY. "THIS VR SYSTEM TURNS YOU INTO AN NPC BY MOVING YOUR MUSCLES FOR YOU." — 2022/05/01

VRScout. "Researchers Use VR/AR Tech To Control The Human Body." — 2022/04/28