LAWRENCE KIM

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APPOINTMENT

Simon Fraser University, Burnaby, BC   2022 - present
Assistant Professor, School of Computing Science

Stanford University School of Medicine, Stanford, CA   2020 - 2022
Postdoctoral Scholar, Psychiatry and Behavioral Sciences

EDUCATION

Stanford University   2015 - 2020
Doctor of Philosophy, Mechanical Engineering
PhD Minor in Computer Science

Stanford University   2013 - 2015
Master of Science, Mechanical Engineering

University of Illinois at Urbana-Champaign   2010 - 2013
Bachelor of Science, Mechanical Engineering, *Highest Honors*

AWARDS & HONORS

HRI 2021: Best LBR Award Nominee (7 out of 109)	2021
CHI 2020: Best Paper Honorable Mention (Top 5%)	2020
CHI 2019: Best Paper Honorable Mention (Top 5%)	2019
Fast Company: Innovation by Design: Honorable Mention	2017
UIST 2016: Best Paper Award (Top 1%)	2016
Samsung Scholarship ($50,000/year for 5 years)	2016 - 2020
Computing Reviews: Notable Books and Articles	2016
Guy Richard Collins Engineering Scholarship (UIUC MechSE Endowed Scholarship)	2012
Dean's List for Academic Excellence	2010 - 2013
National Merit Scholarship	2010 - 2013

PUBLICATIONS

Premiere conference venues in human-computer interaction (e.g., ACM CHI and UIST) are highly selective. Unlike in many fields, these venues publish archival papers and are comparable to or exceed many HCI journals in terms of visibility and impact.
See: https://dl.acm.org/citation.cfm?id=1743546.1743569

Journal

[J5] **Lawrence H Kim**, Gourab Saha, Annel Amelia Leon, Abby C King, Matthew L Mauriello, Pablo E Paredes
"Shared Autonomy to Reduce Sedentary Behavior among Sit-Stand Desk Users in the U.S and India"
JMIR Formative Research 2022

[J4] **Lawrence H Kim**, Veronika Domova, Yuqi Yao, Sean Follmer, Chien-Ming Huang, Pablo E Paredes
"Robotic Presence: The Effects of Anthropomorphism and Robot State on Task Performance and Emotion"
IEEE Robotics and Automation Letters (RA-L) 2022

[J3] **Lawrence H Kim**, Sean Follmer
"Generating Legible and Glanceable Swarm Robot Motion through Trajectory, Collective Behavior, and Pre-attentive Processing Features"
ACM Transactions on Human-Robot Interaction (THRI). 10, 3, Article 21 (July 2021).

[J2] **Lawrence H Kim**, Pablo Castillo, Sean Follmer, Ali Israr
"VPS Tactile Display: Tactile Information Transfer of Vibration, Pressure, and Shear"
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT). 3(2), 51, June 2019. (Presented at UbiComp 2019)

[J1] **Lawrence H Kim**, Sean Follmer
"UbiSwarm: Ubiquitous Robotic Interfaces and Investigation of Abstract Motion as a Display"
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT). 1(3), 66, Sep. 2017. (Presented at UbiComp 2017) [Acceptance rate = 9%]

Conference

[C11] Hongni Ye, Tong Wu, **Lawrence H Kim**, Min Fan, Xin Tong
"WooGu: Exploring an Embodied Tangible User Interface for Supporting Children to Learn Farm-to-Table Food Knowledge"
ACM Interaction Design and Children (IDC'23) [Submitted]

[C10] **Lawrence H Kim**, Veronika Domova, Yuqi Yao, Pablo E Paredes
"Effects of a Co-Located Robot and Anthropomorphism on Human Motivation and Emotion across Personality and Gender"
IEEE International Conference on Robot & Human Interactive Communication (RO-MAN'22)

[C9] **Lawrence H Kim***, Rahul Goel*, Jia Liang*, Mert Pilanci, Pablo E Paredes
"Linear Predictive Coding for Acute Stress Prediction from Computer Mouse Movements"
Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'21).

[C8] Kai Zhang, **Lawrence H Kim**, Yipeng Guo, Sean Follmer
"Automatic Generation of Spatial Tactile Effects by Analyzing Cross-modality Features of a Video"
ACM Symposium on Spatial User Interaction (SUI'20) [Acceptance rate = 50%]

[C7] **Best Paper Honorable Mention (Top 5%)**
"User-defined Swarm Robot Control"
Lawrence H Kim, Daniel Drew, Vernoika Domova, Sean Follmer
Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI'20). p.685 [Acceptance rate = 24%]

[C6] **Best Paper Honorable Mention (Top 5%)**
Lawrence H Kim, Sean Follmer
"SwarmHaptics: Haptic Display with Swarm Robots"
Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI'19). p.688. [Acceptance rate = 24%]

[C5] Yiwei Zhao, **Lawrence H Kim**, Ye Wang, Mathieu Le Goc, Sean Follmer
"Robotic Assembly of Haptic Proxy Objects for Tangible Interaction and Virtual Reality"
Proceedings of the 2017 ACM International Conference on Interactive Surfaces and Spaces (ISS'17). pp. 82-91. [Acceptance rate = 27%]

[C4] **Best Paper Award (Top 1%)**
Mathieu Le Goc, **Lawrence H Kim**, Ali Parsaei, Jean-Daniel Fekete, Pierre Dragicevic, Sean Follmer

"Zooids: Building Blocks for Swarm User Interfaces"
Proceedings of the 29th Annual Symposium on User Interface Software and Technology (UIST'16).
pp. 97-109. [Acceptance rate = 21%]

[C3] Sungjune Jang, **Lawrence H Kim**, Kesler Tanner, Hiroshi Ishii, Sean Follmer
"Haptic Edge Display for Mobile Tactile Interaction"
Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI'16). pp. 3706-3716. [Acceptance rate = 23%]

[C2] Kamran Shamaei, **Lawrence H Kim**, Allison M Okamura
"Design and Evaluation of a Trilateral Shared-Control Architecture for Teleoperated Training Robots"
37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'15). pp. 4887-4893.

[C1] **Lawrence H Kim***, Cliff Bargar*, Yuhang Che*, Allison M Okamura
"Effects of Master-Slave Tool Misalignment in a Teleoperated Surgical Robot"
IEEE International Conference on Robotics and Automation (ICRA'15). pp. 5364-5370. [Acceptance rate = 41%]

Peer-reviewed posters, demos & extended abstracts

[P4] Best LBR Award Nominee (7 out of 109 accepted submissions)
Lawrence H Kim, Annel Amelia Leon, Ganapathy Sankararaman, Blake M Jones, Gourab Saha, Amanda Spyropolous, Akshara Motani, Matthew L Mauriello, Pablo E Paredes
"The Haunted Desk: Exploring Non-Volitional Behavior Change with Everyday Robotics"
Companion of the 2021 ACM/IEEE International Conference on Human-Robot Interaction (HRI'21)

[P3] **Lawrence H Kim***, Abena Boadi-Agyemang*, Alexa Fay Siu, John Tang
"When to Add Human Narration in Photo-Sharing Social Media"
International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS'20)

[P2] Griffin Dietz, Jane L E., Peter Washington, **Lawrence H Kim**, Sean Follmer
"Human Perception of Swarm Robot Motion"
Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI'17)

[P1] Mathieu Le Goc, **Lawrence H Kim**, Ali Parsaei, Jean-Daniel Fekete, Pierre Dragicevic, Sean Follmer
"Zooids: Building Blocks for Swarm User Interfaces"
Proceedings of the 29th Annual Symposium on User Interface Software and Technology (UIST'16)

Workshop

[W1] **Lawrence H Kim**, Sean Follmer
"Interaction with Ubiquitous Robots and Autonomous IoT"
Workshop on New Directions for the IoT: Automate, Share, Build, and Care, CHI'19

Book Chapters

[B1] Alexa F. Siu, Shenli Yuan, Hieu Pham, Eric J. Gonzalez, **Lawrence H Kim**, Mathieu Le Goc, Sean Follmer
"Investigating Tangible Collaboration for Design Towards Augmented Physical Telepresence"
2018 Plattner H., Meinel C., Leifer L. (eds) Design Thinking Research. Understanding Innovation. Springer, Cham

Theses

[T1] **Lawrence H Kim**
    "Designing In Situ Interaction with Ubiquitous Robots"
    Committee: Sean Follmer, Allison Okamura, James Landay, Wendy Ju, Martin Fischer
    2020 Doctoral Thesis

INVITED TALKS, POSTERS & DEMONSTRATIONS

University of Illinois at Urbana-Champaign   March 2022
Designing Ubiquitous Physical Interface (Invited Talk)   Virtual

Simon Fraser University   March 2022
Designing Ubiquitous Physical Interface (Invited Talk)   Virtual

Virginia Tech   Feb 2022
Designing Ubiquitous Physical Interface (Invited Talk)   Blacksburg, VA

Rochester Institute of Technology   Feb 2022
Designing Ubiquitous Physical Interface (Invited Talk)   Virtual

Stanford University, DesignX Symposium   2021
Designing Interaction with Ubiquitous Robots (Invited Talk)   Virtual

Exploratorium, After Dark Session: *Tactile*   2020
Interactive Tabletop Swarm Robots (Demo)   San Francisco, CA

Hyundai Global Top Talent Forum   2019
Interaction with Ubiquitous Robots and Autonomous Vehicles (Invited Talk)   San Diego, CA

Bay Area Robotics Symposium (BARS)   2019
User-defined Swarm Robot Control (Poster)   Berkeley, CA

Haptics Symposium Technical Tour   2018
Zooids: Building Blocks for Swarm User Interfaces (Demo)   Stanford, CA

Adobe Creative Lab Retreat   2016
Zooids: Building Blocks for Swarm User Interfaces (Demo)   Stanford, CA

CHI Reception   2016
Haptic Edge Display for Mobile Tactile Interaction (Demo)   Stanford, CA

Center for Automotive Research at Stanford (CARS) Annual Meeting   2015
Haptic Edge Display for Mobile Tactile Interaction (Demo)   Stanford, CA

Bay Area Robotics Symposium (BARS)   2015
Haptic Edge Display for Mobile Tactile Interaction (Demo)   Stanford, CA

STUDENT ADVISING

Stanford University
with Pablo E. Paredes

Yuqi Yao, Stanford Education MS – now at Twilio	2019 - present
Yikun Chi, Stanford Statistics MS - now at Stanford PhD in Communication	2021 - 2022
Jason Jia Liang, Stanford Institute for Computational and Mathematical Engineering (ICME) MS - now Stanford ICME PhD	2020 - 2021
Annel Amelia Leon, Stanford Computer Science BS	2020 - 2022

with Sean Follmer

Yiwei Zhao, Stanford Mechanical Eng MS – now at Netflix	2016 - 2017
Ye Wang, Stanford ME/CS Coterm/undergraduate – now at Amazon Lab126	2017
Ali Parsaei, Stanford Mechanical Eng MS – now at Meta	2015 - 2016

TEACHING

Simon Fraser University
Instructor, School of Computing Science, Faculty of Applied Sciences
CMPT 363: *User Interface Design* — Spring 2023

Stanford University
Course Assistant, Mechanical Engineering Department
ME 101: *Visual Thinking* — Fall 2015
ENGR 105: *Introduction to Feedback Control* — Winter 2015, Spring 2015

RESEARCH FUNDING

Simon Fraser University

[SFU-F1] **New Frontiers in Research Fund - Exploration** ($125,000 CAD/yr for two years) 2022 - 2024
Designing for Subversion: Finding a Framework for Embodying Teen Social Interaction
Collaborator, PIs: Karon MacLean, Amori Mikami, Katherine Isbister, Rebecca Todd, Sean Follmer & Lawrence Kim

Stanford University

[SU-F2] **Stanford Graduate School of Education** ($67,500) 2020 - 2022
Transforming Learning: Seed grants for research on K-12 education in the time of COVID-19
Lead author, PIs: Pablo Paredes, Sean Follmer, Lawrence Kim

[SU-F1] **Samsung Scholarship** ($250,000) 2016 - 2020
Lawrence Kim

SELECTED PRESS

Fast Company Design, This Swarm Of Little Robots Is A Totally New Kind Of Interface.	2017
Hackaday, Zooids - Swarm User Interface	2017
NowThis Future, Check Out These Hive Mind Robots, >12M views	2016
Circuit Breaker, Swarm of Tiny Robots, >4M views	2016
TechCrunch, Swarms of tiny, cute robots will one day bring you your phone, like this	2016
WIRED.it, Zooids, come funzionano gli sciami di nano robot	2016
IEEE Spectrum, Video Friday: Swarm User Interface	2016
Adafruit, 'Zooids' are Open-Source, Open-Hardware 'Bots for 'Swarm User Interfaces'	2016
Makery, Zooids: who are these cute robots?	2016

OPEN-SOURCE PROJECTS

Zooids: Instruction and code to build and program Swarm User Interface
https://github.com/ShapeLab/SwarmUI

SERVICE

Program Committee	ACM Conference on Human Factors in Computing Systems (CHI), Late Breaking Work (LBW) AC	2022, 2023
	IEEE RO-MAN Session Chair	2022
Reviewing	ACM Conference on Human Factors in Computing Systems (CHI)	2020-2023
	ACM Symposium on User Interface Software and Technology (UIST)	2019-2022
	ACM Proceedings on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)	2018-2023
	ACM/IEEE International Conference on Human-Robot Interaction (HRI)	2021-2023
	ACM Transactions on Human-Robot Interaction (T-HRI)	2021-2022
	ACM Conference on Tangible, Embedded and Embodied Interaction (TEI)	2022-2023
	International Conference on Social Robotics (ICSR)	2023
	ACM Conference On Computer-Supported Cooperative Work And Social Computing (CSCW)	2022
	IEEE Transactions on Robotics (T-RO)	2021
	Science Robotics	2021
	Virtual Reality, Springer	2021
	Frontiers in Robotics and AI	2021
	IEEE World Haptics Conference (WHC)	2019 - 2021
	Graphics Interface (GI)	2020
	ACM Designing Interactive Systems (DIS)	2019
University Committee	SFU Undergraduate Program Committee	2022 -
Outreach	Rainstorm Academic Outreach Program for Grades 9-12	2021 - 2022
	Stanford's Splash Academic Outreach Program for Grades 9-12	2019 - 2021
	Stanford CS URM Undergraduate Mentoring Program	2020 - 2021
	Lab Tour, Duncan Polytechnical High School's Health and Technology Pathways	2014
	Lab Tour, Manteca High School's Health Science Pathway	2014