

Chen Liang (梁宸)

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PERSONAL STATEMENT

I am Chen Liang(梁宸), a fourth-year computer science Ph.D. candidate from Pervasive Computing Group at Tsinghua University, supervised by Prof. Yuanchun Shi and Prof. Chun Yu. I received my Bachelor's degree in Computer Science from Tsinghua University in 2019. My major research direction is Human-Computer Interaction (HCI) and I am also keeping track of research updates on natural language processing and computer vision.

My research interest focuses on facilitating natural and efficient interaction schemes with compact sensor form in XR and mobile scenarios by leveraging multi-modality sensing (e.g., vision, audio, inertial signal, and RF). My previous and ongoing work expanded the user's input capability both in spatial (e.g., enabling precise input on the subtle fingertip unintrusively) and temporal (e.g., enhancing the recognition of fast and transient gestures) domains. My goal is to develop fundamental interaction techniques, with which a user can interact with everything around them seamlessly, for the next generation XR interface (as the mouse and the keyboard for GUI).

EDUCATION

- **Tsinghua University** Beijing, China
Ph.D. candidate in HCI, Department of Computer Science and Technology July 2019 - June 2024 (expected)
- **Tsinghua University** Beijing, China
Bachelor of Engineering, Department of Computer Science and Technology July 2015 - June 2019
- **The Affiliated High School of South China Normal University** Guangzhou, China
Olympic Class (the top class) July 2009 - June 2015

INTERNSHIP

- **Tsinghua University** Beijing, China
Pervasive Computing Group, supervised by Prof. Chun Yu July 2018 - Present
- **Tsinghua University** Beijing, China
Knowledge Engineering Group, supervised by Prof. Juanzi Li March 2018 - June 2019
- **National University of Singapore** Singapore
NExT Center, supervised by Prof. Fuli Feng and Prof. Tat-seng Chua July 2018 - September 2018

CONFERENCE AND JOURNAL PUBLICATIONS

1. **(IMWUT'23) Understanding In Situ Programming for Smart Home Automation.** Xiaoyi Liu*, Yingtian Shi*, Chun Yu, Cheng Gao, Tianao Yang, Chen Liang, and Yuanchun Shi (* indicates equal contribution).
2. **(IMWUT'23) From 2D to 3D: Facilitating Single-Finger Mid-Air Typing on Virtual Keyboards with Probabilistic Touch Modeling.** Xin Yi, Chen Liang*, Haozhan Chen*, Jiuxu Song, Chun Yu, Hewu Li, and Yuanchun Shi (* indicates equal contribution).
3. **(CHI'23, Honorable Mention Award) Enabling Voice-Accompanying Hand-to-Face Gesture Recognition with Cross-Device Sensing.** Zisu Li*, Chen Liang*, Yuntao Wang, Yue Qin, Chun Yu, Yukang Yan, Mingming Fan, Yuanchun Shi (* indicates equal contribution).
4. **(CHI'23) Selecting Real-World Objects via User-Perspective Phone Occlusion.** Yue Qin, Chun Yu, Wentao Yao, Jiachen Yao, Chen Liang, Yueting Weng, Yukang Yan, and Yuanchun Shi.
5. **(IMWUT'22) DRG-Keyboard: Enabling Subtle Gesture Typing on the Fingertip with Dual IMU Rings.** Chen Liang, Chi Hsia, Chun Yu, Yukang Yan, Yuntao Wang, and Yuanchun Shi.
6. **(IMWUT'21) DualRing: Enabling Subtle and Expressive Hand Interaction with Dual IMU Rings.** Chen Liang, Chun Yu, Yue Qin, Yuntao Wang, and Yuanchun Shi.
7. **(CHI'21) Auth+Track: Enabling Authentication Free Interaction on Smartphone by Continuous User Tracking.** Chen Liang, Chun Yu, Xiaoying Wei, Xuhai Xu, Yongquan Hu, Yuntao Wang, and Yuanchun Shi.
8. **(CHI'19) HandSee: Enabling Full Hand Interaction on Smartphones with Front Camera-based Stereo Vision.** Yu Chun, Xiaoying Wei, Shubh Vachher, Yue Qin, Chen Liang, Yueting Weng, Yizheng Gu, and Yuanchun Shi.
9. **(AAAI'19) Deepchannel: Saliency estimation by contrastive learning for extractive document summarization.** Jiaxin Shi*, Chen Liang*, Lei Hou, Juanzi Li, Zhiyuan Liu, and Hanwang Zhang (* indicates equal contribution).

POSTERS AND WORKSHOPS

1. **(VR'22 Poster) From 2D to 3D: Facilitating Single-Finger Mid-Air Typing on Virtual Keyboards with Probabilistic Touch Modeling.** Xin Yi, Chen Liang, Haozhan Chen, Jiuxu Song, Chun Yu, and Yuanchun Shi.

HONORS AND AWARDS

- Honorable Mention Award (Top 5%), CHI 2023
- 84 Innovation and Future Scholarship (Top 6), Tsinghua University, 2021
- Excellent Comprehensive Scholarship, Tsinghua University, 2021, 2022
- The Second Prize of the 39th "Challenge Cup" Academic and Innovation Contest, Tsinghua University, 2021
- The First Prize of the 37th "Challenge Cup" Academic and Innovation Contest, Tsinghua University, 2019
- Excellent Graduate of Computer Science, Tsinghua University, 2019
- Outstanding Student Services, Tsinghua University, 2017
- Excellent Academic Scholarship, Tsinghua University, 2016
- The Second Prize of "TI" Cup Electronic Design Contest, Tsinghua University, 2016
- The Second Prize of Beijing Electronic Design Contest, Beijing, China, 2015
- Silver Medal of the 29th Chinese Mathematical Olympiad (CMO), China, 2013
- The First Prize of National High School Mathematics Competition, China, 2013, 2014

SERVICES

- **Reviewer** Tsinghua University
CHI' 20, TURC' 20, CHI LBW' 21, ACL' 21. CHI' 22, TIoT' 22 2019 - 2022
- **Reviewer** Tsinghua University
ISMAR' 23, ISWC Brief' 23 2023 - Present
- **Teaching Assistant (TA)** Tsinghua University
Fundamentals of Computer Programming 2019 Fall, 2020 Fall, 2021 Fall, 2022 Fall
- **Teaching Assistant (TA)** Tsinghua University
Calculus A(2) 2020 Spring
- **Teaching Assistant (TA)** Tsinghua University
Financial Big Data and Quantitative Analysis 2021 Spring
- **Teaching Assistant (TA)** Tsinghua University
Essentials to Signal Processing and Data Management for AIoT Applications 2022 Fall

SKILLS SUMMARY

- **Programming Languages.** C/C++, Python, Java, JavaScript, CUDA, R, Matlab, VHDL, Assembly Language, Unreal Engine
- **Professional Skills.** Machine Learning (CV, NLP, and RL tasks in Pytorch and TensorFlow), Digital Image Processing, Audio Processing, Embedded System (e.g., Arduino, NRF BLE), VR/AR Development