# KE LI

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## EDUCATION

**Cornell University** — Jul. 2021 - Aug. 2026 (Expected)

*Ph.D. Candidate at SciFi Lab in Information Science, College of Computing and Information Science*

- **Advisor**: Prof. Cheng Zhang, **Special Committee Member**: Prof. Deborah Estrin and Prof. Rajalakshmi Nandakumar
- **Concentration**: Ubiquitous Computing, Sensing Systems, Wearable Devices, and Artificial Intelligence

**Cornell University** — Jul. 2021 - Dec. 2024

*M.S. in Information Science, College of Computing and Information Science*

**Shanghai Jiao Tong University (SJTU)** — Sept. 2016 - Jul. 2020

*B.S. in Information Engineering, School of Electronic Information and Electrical Engineering*

- **Overall GPA**: 91.41/100 (Rank **3/158**)
- Outstanding Graduate from Universities in Shanghai **(Top 5%)**

**Carnegie Mellon University (CMU)** — Jul. 2019 - Sept. 2019

*Research Assistant in Department of Electrical and Computer Engineering, Supervisor: Prof. Swarun Kumar*

## PUBLICATIONS

**SonicID: User Identification on Smart Glasses with Acoustic Sensing**. **Ke Li**, Devansh Agarwal, Ruidong Zhang, Vipin Gunda, Tianjun Mo, Saif Mahmud, Boao Chen, François Guimbretière, and Cheng Zhang. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. (IMWUT '24)* 8, 4, Article 169, 27 pages. — Nov. 2024

**ActSonic: Recognizing Everyday Activities from Inaudible Acoustic Wave Around the Body**. Saif Mahmud, Vineet A Parikh, Qikang Liang, **Ke Li**, Ruidong Zhang, Ashwin Ajit, Vipin Gunda, Devansh Agarwal, François Guimbretière, and Cheng Zhang. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. (IMWUT '24)* 8, 4, Article 183, 32 pages. — Nov. 2024

**Ring-a-Pose: A Ring for Continuous Hand Pose Tracking**. Tianhong Catherine Yu, Guilin Hu, Ruidong Zhang, Hyunchul Lim, Saif Mahmud, Chi-Jung Lee, **Ke Li**, Devansh Agarwal, Shuyang Nie, Jinseok Oh, François Guimbretière, and Cheng Zhang. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. (IMWUT '24)* 8, 4, Article 189, 30 pages. — Nov. 2024

**EchoGuide: Active Acoustic Guidance for LLM-Based Eating Event Analysis from Egocentric Videos**. Vineet Parikh, Saif Mahmud, Devansh Agarwal, **Ke Li**, François Guimbretière, and Cheng Zhang. In *Proceedings of the 2024 ACM International Symposium on Wearable Computers (ISWC '24)*, 40–47. ***Best Paper Honorable Mention Award*** — Melbourne, Australia Oct. 2024

**AI-Powered Eyewear for Routine Facial Expression Analysis in Parkinson's Disease: Study Design and Goals**. Hwai Yin Ooi, Cheng Zhang, **Ke Li**, Jordan Narins, and Harini Sarva. *The International Congress of Parkinson's Disease and Movement Disorders*, 39 (suppl 1). — Sept. 2024

**GazeTrak: Exploring Acoustic-based Eye Tracking on a Glass Frame**. **Ke Li**, Ruidong Zhang, Boao Chen, Siyuan Chen, Sicheng Yin, Saif Mahmud, Qikang Liang, François Guimbretière, and Cheng Zhang. In *Proceedings of the 30th Annual International Conference on Mobile Computing and Networking (ACM MobiCom '24)*, 497–512. — D.C., USA Nov. 2024

**EyeEcho: Continuous and Low-power Facial Expression Tracking on Glasses**. **Ke Li**, Ruidong Zhang, Siyuan Chen, Boao Chen, Mose Sakashita, François Guimbretière, and Cheng Zhang. In — Honolulu, USA May 2024

*Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24)*, Article 319, 1–24.

**EchoWrist: Continuous Hand Pose Tracking and Hand-Object Interaction Recognition Using Low-Power Active Acoustic Sensing On a Wristband**. Chi-Jung Lee, Ruidong Zhang, Devansh Agarwal, Tianhong Catherine Yu, Vipin Gunda, Oliver Lopez, James Kim, Sicheng Yin, Boao Dong, **Ke Li**, Mose Sakashita, François Guimbretière, and Cheng Zhang. In *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24)*, Article 403, 1–21.

Honolulu, USA
May 2024

**HPSpeech: Silent Speech Interface for Commodity Headphones**. Ruidong Zhang, Hao Chen, Devansh Agarwal, Richard Jin, **Ke Li**, François Guimbretière, and Cheng Zhang. In *Proceedings of the 2023 ACM International Symposium on Wearable Computers (ISWC '23)*, 60–65. ***Best Paper Honorable Mention Award***

Cancún, Mexico
Oct. 2023

**EchoNose: Sensing Mouth, Breathing and Tongue Gestures inside Oral Cavity using a Non-contact Nose Interface**. Rujia Sun, Xiaohe Zhou, Benjamin Steeper, Ruidong Zhang, Sicheng Yin, **Ke Li**, Shengzhang Wu, Sam Tilsen, François Guimbretière, and Cheng Zhang. In *Proceedings of the 2023 ACM International Symposium on Wearable Computers (ISWC '23)*, 22–26.

Cancún, Mexico
Oct. 2023

**PoseSonic: 3D Upper Body Pose Estimation Through Egocentric Acoustic Sensing on Smartglasses**. Saif Mahmud, **Ke Li**, Guilin Hu, Hao Chen, Richard Jin, Ruidong Zhang, François Guimbretière, and Cheng Zhang. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. (IMWUT '23)* 7, 3, Article 111, 28 pages.

Sept. 2023

**EchoSpeech: Continuous Silent Speech Recognition on Minimally-obtrusive Eyewear Powered by Acoustic Sensing**. Ruidong Zhang, **Ke Li**, Yihong Hao, Yufan Wang, Zhengnan Lai, François Guimbretière, and Cheng Zhang. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23)*, Article 852, 1–18.

Hamburg,
Germany
Apr. 2023

**EarIO: A Low-power Acoustic Sensing Earable for Continuously Tracking Detailed Facial Movements**. **Ke Li**, Ruidong Zhang, Bo Liang, François Guimbretière, and Cheng Zhang. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. (IMWUT '22)* 6, 2, Article 62, 24 pages.

Jul. 2022

**Locating Everyday Objects using NFC Textiles**. Jingxian Wang, Junbo Zhang, **Ke Li**, Chengfeng Pan, Carmel Majidi, and Swarun Kumar. In *Proceedings of the 20th International Conference on Information Processing in Sensor Networks (IPSN '21)*, 15–30. ***Best Paper Award & Best Presentation Award***

Nashville, USA
May 2021

**A Constant Factor Approximation for *d*-Hop Connected Dominating Set in 3-Dimensional Wireless Network**. **Ke Li**, Xiaofeng Gao, Fan Wu, and Guihai Chen. In *IEEE Transactions on Wireless Communications (TWC)*, vol. 18, no. 9, pp. 4357-4367, Sept. 2019.

Sept. 2019

**QLEC: A Machine-Learning-Based Energy-Efficient Clustering Algorithm to Prolong Network Lifespan for IoT in High-Dimensional Space**. **Ke Li**, Haowei Huang, Xiaofeng Gao, Fan Wu, and Guihai Chen. In *Proceedings of the 48th International Conference on Parallel Processing (ICPP '19)*, Article 105, 1–10.

Kyoto, Japan
Aug. 2019

**µTouch: Enabling Accurate, Lightweight Micro Hand Gesture Sensing with Passive Magnets**. Siyuan Wang, Jike Wang, **Ke Li**, Jingyuan Huang, Cheng Zhang, Alanson P. Sample, and Dongyao Chen. *(In Preparation)*

## HONORS & AWARDS

**Qualcomm Innovation Fellowship 2024**

Apr. 2024

*Fellowship focused on recognizing, rewarding, and mentoring PhD students based on Qualcomm's core values of innovation, execution, and teamwork*

**Nominated for a 2021-2022 Outstanding Teaching Award**                    May 2022

*Honor bestowed on outstanding PhD teaching assistants in Information Science at Cornell*

**Outstanding Graduate in Shanghai (Top 5%)**                    Jun. 2020

*Honor bestowed on outstanding graduates from universities in Shanghai*

**A-level Outstanding Scholarship of Shanghai Jiao Tong University (Top 1%)**                    Nov. 2019

*Scholarship awarded to outstanding students at SJTU*

**Tang Lixin Scholarship (Top 0.2%)**                    Oct. 2019

*Scholarship founded by Mr. Tang Lixin and awarded to Top 60 students at SJTU*

**National Scholarship*2 (3/158, 1/158)**                    Oct. 2018, 2019

*Top scholarship awarded to undergraduates in China for their achievements in academics*

**B-level Outstanding Scholarship of Shanghai Jiao Tong University*2 (Top 5%, Top 2%)**                    Nov. 2017, 2018

*Scholarship awarded to outstanding students at SJTU*

**Wen-Yuan Pan Scholarship (Top 5%)**                    Dec. 2017

*Scholarship founded by Wen-Yuan Pan Foundation*

## SERVICE

**External Reviewer**                    2022 - Present

*UbiComp '22 '23 '24 '25, UIST '23, CHI '24 '25*

## TEACHING EXPERIENCES

**INFO 2951: Introduction to Data Science with R**                    Spring '25

*Teaching Assistant at Cornell University, Instructor: Prof. Benjamin Soltoff*

**INFO 4320/5321: Introduction to Rapid Prototyping and Physical Computing**                    Fall '22 '23, Spring '23

*Teaching Assistant at Cornell University, Instructor: Prof. Cheng Zhang*

**INFO 4120/6120: Ubiquitous Computing** *(Nominated for Outstanding Teaching Award)*                    Fall '21

*Teaching Assistant at Cornell University, Instructor: Prof. Cheng Zhang*

## EXTRACURRICULAR ACTIVITIES & LEADERSHIP

**Development Program for Excellent Student of SJTU,** *Group Leader*                    Apr. 2017 – Apr. 2018

- Organized various activities, such as lectures, speech contests, volunteer programs, and summer social activities.
- Awarded Outstanding Participant Title in the 2018 Summer Social Practice of SJTU (Top 2%).

**Master Distinguished Lecture, SJTU,** *Director*                    May. 2017 - Sept. 2018

- Organized professional academic lectures and invited scholars for speeches, including 8 Nobel Prize Laureates.
- Oversaw the entire process of lecture, including brand building, publicity, directing, reception and recognition.