**KE LI**

Cornell University, 107 Hoy Rd, Ithaca, NY 14853 | kl975@cornell.edu | [keli97.github.io](https://keli97.github.io/)

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| **EDUCATION** | | | | | | | |
| **Cornell University** | Jul. 2021 - Aug. 2026 (Expected) | | | | | | |
| *Ph.D. Candidate at* [*SciFi Lab*](https://www.scifilab.org/) *in Information Science, College of Computing and Information Science* | | | | | | | |
| * **Advisor**: Prof. [Cheng Zhang](https://czhang.org/), **Special Committee Member**: Prof. [Deborah Estrin](https://destrin.tech.cornell.edu/) and Prof. [Rajalakshmi Nandakumar](https://infosci.cornell.edu/~rajalakshmi/) * **Concentration**: Ubiquitous Computing, Sensing Systems, Wearable Devices, and Artificial Intelligence | | | | | | | |
| **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 Graduates 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*](https://swarunkumar.com/) | | | | | | |  |
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| **PUBLICATIONS** | | | | | | | |
| [**SonicID: User Identification on Smart Glasses with Acoustic Sensing**](https://arxiv.org/abs/2406.08273). **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). (Accepted Pending Minor Revisions)* | | | | | | Oct. 2025 (Expected) | |
| [**ActSonic: Recognizing Everyday Activities from Inaudible Acoustic Wave Around the Body**](https://arxiv.org/abs/2404.13924). 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). (Accepted Pending Minor Revisions)* | | | | | | Oct. 2025 (Expected) | |
| [**Ring-a-Pose: A Ring for Continuous Hand Pose Tracking**](https://arxiv.org/abs/2404.12980). 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). (Accepted Pending Minor Revisions)* | | | | | | Oct. 2025 (Expected) | |
| [**EchoGuide: Active Acoustic Guidance for LLM-Based Eating Event Analysis from Egocentric Videos**](https://dl.acm.org/doi/10.1145/3675095.3676611). 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. | | | | | | Melbourne, Australia  Oct. 2024 | |
| [**AI-Powered Eyewear for Routine Facial Expression Analysis in Parkinson’s Disease: Study Design and Goals**](https://www.mdsabstracts.org/abstract/ai-powered-eyewear-for-routine-facial-expression-analysis-in-parkinsons-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), Abstract No. 1229. | | | | | | Philadelphia, USA  Sept. 2024 | |
| [**GazeTrak: Exploring Acoustic-based Eye Tracking on a Glass Frame**](https://dl.acm.org/doi/10.1145/3636534.3649376). **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**](https://dl.acm.org/doi/10.1145/3613904.3642613). **Ke Li**, Ruidong Zhang, Siyuan Chen, Boao Chen, Mose Sakashita, François Guimbretière, and Cheng Zhang. In *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24)*, Article 319, 1–24. | | | | | | Honolulu, USA  May 2024 | |
| [**EchoWrist: Continuous Hand Pose Tracking and Hand-Object Interaction Recognition Using Low-Power Active Acoustic Sensing On a Wristband**](https://dl.acm.org/doi/10.1145/3613904.3642910).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**](https://dl.acm.org/doi/10.1145/3594738.3611365). 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**](https://dl.acm.org/doi/10.1145/3594738.3611358). 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**](https://dl.acm.org/doi/10.1145/3610895). 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 (September 2023), 28 pages. | | | | | | Sept. 2023 | |
| [**EchoSpeech: Continuous Silent Speech Recognition on Minimally-obtrusive Eyewear Powered by Acoustic Sensing**](https://doi.org/10.1145/3544548.3580801). 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**](https://dl.acm.org/doi/10.1145/3534621). **Ke Li**, Ruidong Zhang, Bo Liang, François Guimbretière, and Cheng Zhang. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. (IMWUT '22)* 6, 2, Article 62 (July 2022), 24 pages. | | | | | | Jul. 2022 | |
| [**Locating Everyday Objects using NFC Textiles**](https://dl.acm.org/doi/10.1145/3412382.3458254). 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**](https://ieeexplore.ieee.org/document/8765348). **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**](https://dl.acm.org/citation.cfm?id=3337926). **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, **Ke Li**, Jike Wang, Jingyuan Huang, Cheng Zhang, Alanson P. Sample, and Dongyao Chen. *The 31st Annual International Conference on Mobile Computing and Networking (MobiCom '25)*. *(Under Review)* | | | | | | Nov. 2025 (Expected) | |
| **SERVICE** | | | | | | | |
| **External Reviewer**  *UbiComp ’22 ’23 ’24, UIST ’23, CHI ’24* | | 2022 - Present | | | | | |
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| **TEACHING EXPERIENCES** | | | | | | | |
| **INFO 4320/5321: Introduction to Rapid Prototyping and Physical Computing**  *Teaching Assistant at Cornell University, Instructor: Prof. Cheng Zhang* | | Fall ’22 ’23, Spring ’23 | | | | | |
| **INFO 4120/6120: Ubiquitous Computing** *(Nominated for Outstanding Teaching Award)*  *Teaching Assistant at Cornell University, Instructor: Prof. Cheng Zhang* | | Fall ’21 | | | | | |
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| **HONORS & AWARDS** | | | | | | | |
| **Qualcomm Innovation Fellowship 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**  *Honor bestowed on outstanding PhD teaching assistants in Information Science at Cornell*  **Outstanding Graduates in Shanghai (Top 5%)**  *Honor bestowed on outstanding graduates from universities in Shanghai*  **A-level Outstanding Scholarship of Shanghai Jiao Tong University (Top 1%)**  *Scholarship awarded to outstanding students at SJTU*  **Tang Lixin Scholarship (Top 0.2%)**  *Scholarship founded by Mr. Tang Lixin and awarded to Top 60 students at SJTU*  **National Scholarship\*2 (3/158, 1/158)**  *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%)**  *Scholarship awarded to outstanding students at SJTU*  **Wen-Yuan Pan Scholarship (Top 5%)**  *Scholarship founded by Wen-Yuan Pan Foundation* | | | | | Apr. 2024  May 2022  Jun. 2020  Nov. 2019  Oct. 2019  Oct. 2018, 2019  Nov. 2017, 2018  Dec. 2017 | | |
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| **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. | | | | | | | |