# QIUYUE (SHIRLEY) XUE

qxue2@cs.washington.edu, website: https://xueqiuyue.com
Paul G. Allen School of Computer Science & Engineering
University of Washington ◇ Seattle, WA 98195

## EDUCATION

**University of Washington** *2019 - 2025*
Ph.D. candidate, Computer Science & Engineering
Advisors: Shwetak Patel, Vikram Iyer

**Georgia Institute of Technology** *2017 - 2019*
M.S., Computer Science
Advisors: Gregory Abowd, Thad Starner

**Peking University, China** *2013 - 2017*
B.S., Computer Science
B.S., Electrical Engineering
Advisors: Chenren Xu, Wei Wang

## PROFESSIONAL EXPERIENCE

**Research intern, Microsoft Research** Jun 2022 - Oct 2022

Research for Industry & Networking Research group.
Led research on **ultra-low-power sensing for the food supply chain**, optimizing energy efficiency for real-world deployments.
Mentor: Vaishnavi Ranganathan, Bodhi Priyantha

**Research intern, Apple AI/ML** Jun 2021 - Oct 2021

Led research on **ultra-efficient real-time wireless sensing system for natural input interactions**, enabling seamless user experiences.
Mentor: Saman Naderiparizi

**Student researcher, Google Health Research and Innovation** Jun 2020 - Mar 2021

Led research on **smart home- and smartphone-based sonar for breathing and activity monitoring**. Developed deep learning models to interpret sonar signals for contactless health tracking.
Mentors: D. Shin, Mark Malhotra, Anupam Pathak

**ML SDE intern, Bloomberg ML team** May 2018 - Aug 2018

Developed a **sentiment analysis model for earnings calls transcripts**, using NLP techniques for extracting insights and improving financial test classification.
Mentor: Karan Uppal, Temma Choji

## PUBLICATIONS

1. Qiuyue Shirley Xue, Dilini Nissanka, Tammy Yan, Ruiqing Wang, Shwetak Patel, Vikram Iyer. **PPG Earring: Smart Wireless Earring for Heart Health Monitoring**. In Proceedings of the 2025 CHI conference on human factors in computing systems, 2025

2. Qiuyue Shirley Xue, Eric Martin, Jiaqing Liu, Ruiqing Wang, Antonio Glenn, Richard Li, Vikram Iyer, Shwetak Patel. **ECG Necklace: Low-power Wireless Necklace for Continuous ECG Monitoring**. In Proceedings of the 2025 CHI conference on human factors in computing systems, 2025

3. Qiuyue Shirley Xue*, Yujia Liu*, Joseph Breda, Mastafa Springston, Vikram Iyer, and Shwetak Patel. **Thermal earring: Low-power wireless earring for longitudinal earlobe temperature sensing**. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 7(4):1–28, 2024

4. Qiuyue Shirley Xue, D Shin, Anupam Pathak, Jake Garrison, Jonathan Hsu, Mark Malhotra, and Shwetak Patel. **Luckychirp: Opportunistic respiration sensing using cascaded sonar on commodity devices**. In 2022 IEEE International Conference on Pervasive Computing and Communications (PerCom), pages 164–171. IEEE, 2022

5. Vikram Iyer*, Maruchi Kim*, Qiuyue Shirley Xue* (co-first author), Anran Wang, Shyamnath Gollakota. **Airdropping sensor networks from drones and insects**. In Proceedings of the 26th Annual International Confer- ence on Mobile Computing and Networking, pages 1–14, 2020

6. Anandghan Waghmare, Qiuyue Shirley Xue, Dingtian Zhang, Yuhui Zhao, Shivan Mittal, Nivedita Arora, Ceara Byrne, Thad Starner, and Gregory D Abowd. **Ubiquitouch: Self sustaining ubiquitous touch interfaces**. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 4(1):1–22, 2020

7. D Shin and Qiuyue Shirley Xue. **Optical accessory to add touch capability to a non-touchscreen device**. 2020

8. Rocko Graziano, David Benton, Sarthak Wahal, Qiuyue Shirley Xue, P Tim Miller, Nick Larsen, Diego Vacanti, Pepper Miller, Khushhall Chandra Mahajan, Deepak Srikanth, et al. **Jack watson: Ad- dressing contract cheating at scale in online computer science education**. In Proceedings of the sixth (2019) ACM conference on learning@ scale, pages 1–4, 2019

9. Nivedita Arora, Qiuyue Shirley Xue, Dhruva Bansal, Peter McAughan, Ryan Bahr, Diego Osorio, Xiaomeng Ma, Alanson P Sample, Thad E Starner, and Gregory D Abowd. **Surface++ a scalable and self-sustainable wireless sound sensing surface** (poster). In Proceedings of the 17th Annual International Conference on Mobile Systems, Applications, and Services, pages 543–544, 2019

10. Cheng Zhang, Qiuyue Shirley Xue, Anandghan Waghmare, Ruichen Meng, Sumeet Jain, Yizeng Han, Xinyu Li, Kenneth Cunefare, Thomas Ploetz, Thad Starner, et al. **Fingerping: Recognizing fine-grained hand poses using active acoustic on-body sensing**. In Proceedings of the 2018 CHI conference on human factors in computing systems, pages 1–10, 2018

11. Cheng Zhang, Qiuyue Shirley Xue, Anandghan Waghmare, Sumeet Jain, Yiming Pu, Sinan Hersek, Kent Lyons, Kenneth A Cunefare, Omer T Inan, and Gregory D Abowd. **Soundtrak: Continuous 3d tracking of a finger using active acoustics**. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 1(2):1–25, 2017

12. Cheng Zhang, Sinan Hersek, Yiming Pu, Danrui Sun, Qiuyue Shirley Xue, Thad E Starner, Gregory D Abowd, and Omer T Inan. **Bioacoustics-based human-body-mediated communication**. Computer, 50(2):36–46, 2017

## PATENTS

**Wearable devices for detecting body and ambient temperature**
*Qiuyue (Shirley) Xue, Yujia Liu, Vikram Iyer, Shwetak Patel*                    *US Patent filed*

**Thin and flexible self-powered vibration transducer employing triboelectric nanogeneration**

*Nivedita Arora, Gregory D Abowd, Mohit Gupta, Diego Osorio, Seyedeh Fereshteh Shahmiri, Thad Eugene Starner, Yi-Cheng Wang, Zhengjun Wang, Zhong Lin Wang, Steven L Zhang, Peter McAughan, Qiuyue Xue, Dhruva Bansal, Ryan Bahr, Emmanouil Tentzeris*                    *US Patent 10,932,063*

**Wearable devices for detecting body and ambient temperature**

*Cheng Zhang, Gregory D. Abowd, Omer Inan, Pranav Kundra, Thomas Ploetz, Yiming Pu, Thad Eugene Starner, Anandghan Waghmare, Xiaoxuan Wang, Kenneth A. Cunnefare, Qiuyue Xue*     *US Patent US Patent 11,762,474*

## TEACHING AND MENTORSHIP

**Classes (teaching assistant):**
University of Washington CSE/ECE 475: Embedded Capstone class, undergrad and grad level (2022 Fall, 2023 Fall)
Georgia Tech CS 6001: Artificial Intelligence, grad level (2019 Spring)

**Mentored Students**
Nancy (Yujia) Liu (ECE MS, now PhD student at UCSD PhD)
Jiaqing Liu (ECE MS)
Tammy Yan (HCDE MS)
Ruiqing Wang (UW Global Innovation Exchange Program, MS)
Yuhua Nie (ECE MS)
Dilini Nissanka (CSE undergrad)
Eric Martin (ECE undergrad)
Chetana Iyer (CSE undergrad)
CSNext program (for underrepresented communities): Sravya Nagalakunta, Yvonne Jose, Thanh Tong, Deepansha Singh, Ying Zhu, Wanting Mao, Wanting Mao.

## AWARDS & FUNDING

**University of Washington Innovation Gap Fund award (for smart earring), $10,000, 2023**

**Samsung Global Research Outreach Grant Proposal, submitted, 2024**

**Heidelberg Laureate Forum young researcher, 2020-2022**

**Best poster award, Mobisys 2019**

**Academic Excellence Awards, Peking University, 2015**

## SELECTED MEDIA COVERAGE

**University of Washington front page; King 5 Seattle TV; KOMO News; GeekWire; DesignBoom; FemTech Insider, etc.:** "UW-developed smart earrings can monitor a person's temperature"

## ACADEMIC SERVICE

Student volunteer: UIST 2022, Ubicomp 2017
Paper reviewer: IMWUT/Ubicomp, CHI, UIST, Journal of open hardware