

# Qijia Shao

500 West 120 Street Room 601, New York City, NY, 10027

☎ (+1) 608-598-7425

✉ [qijia@cs.columbia.edu](mailto:qijia@cs.columbia.edu)

🏠 <https://cs.columbia.edu/~qijia>

## Education

- 2022-2024(Expected) **Columbia University.**  
Ph.D. Candidate in Computer Science  
Advisor: **Prof. Xia Zhou**  
Research Interests: **Mobile Computing and HCI**
- 2018-2022 **Dartmouth College.**  
Master of Science in Computer Science (During Ph.D.)  
Advisors: **Prof. Xia Zhou and Prof. Devin Balkcom**  
Research Interests: **Mobile Computing and HCI**
- 2014-2018 **University of Electronic Science and Technology of China.**  
Bachelor of Engineering in Computer Engineering, Yingcai Honours College (for top 5%)  
Advisor: **Prof. Jun Wang**  
GPA: **3.99/4.0**, Avg.Score: **91.3/100**

## Experience

- Summer 2022 **Research Intern, Snap Research, NYC.**  
**Mentors:** Dr. Jian Wang and Dr. Shree K Nayar  
- Lead a project on reducing the motion-to-photon latency for AR/VR.  
- Proposed a neural network-based filter for human motion trajectory smoothing and prediction.  
- Deployed the proposed network to AR and VR systems.  
- Designed and conducted a user study for validating the improvement in the actual user experience.  
- Submitted a paper to UbiComp'23.
- Summer 2021 **Research Intern, Signify (Philips Research), Remote.**  
**Mentor:** Dr. Jing Yu  
- Performed in-depth statistical analysis for different sensor data and figured out the bottleneck of the previous algorithm.  
- Designed and implemented different Machine Learning algorithms with pilot study data.  
- Built a scalable and robust probabilistic model and implemented the whole pipeline to take sensor data and make inferences.  
- Improved the system performance by **19%** and submitted a patent.
- Spring 2021 **Teaching Assistance, Computer Networks, Dartmouth.**  
- held office hours; wrote solutions for projects; lead the project discussion as a shepherd.
- Fall 2018 **Teaching Assistance, Machine Learning and Statistical Data Analysis, Dartmouth.**  
- held office hours; graded and wrote solutions for assignments and exams; explained the exams.

## Technical Skills & Academic Experience

**Programming:** Python, C/C++, C#, Matlab, R  
**Hardware:** Micro-controllers, PCB Design, VHDL  
**System & Tools:** Linux, Unity, Git,  $\LaTeX$ , 3D Design  
**Machine Learning:** Scikit-learn, deep learning (PyTorch/TensorFlow)  
**Academic Experience:** Reviewer for CHI'20'23, UbiComp'20'21'22, ICRA'23.

---

## Selected Honors & Awards

- 2022 Grand Prize at Dartmouth Innovation and Technology Festival
- 2020 ACM HotMobile 2020 Best Demo Award
- 2018 Dartmouth Fellowship
- 2018 Excellent Undergraduate Student at UESTC
- 2018 Outstanding Undergraduate Thesis at UESTC
- 2016, 2017 National Scholarship, by the Ministry of Education of China

---

## Publications

### † Co-primary authors

- [10] **Qijia Shao**<sup>†</sup>, Charles J. Carver<sup>†</sup>, Samuel Lensgraf, Amy Sniffen, Maxine Perroni-Scharf, Hunter Gallant, Alberto Quattrini Li, Xia Zhou.  
**Sunflower: Locating Underwater Robots From the Air**  
*Proceedings of the 20th Annual International Conference on Mobile Systems, Applications, and Services. June 2022. (MobiSys 2022)*
- [9] **Qijia Shao**<sup>†</sup>, Vimal Kakaraparthi<sup>†</sup>, Charles J. Carver, Tien Pham, Nam Bui, VP Nguyen, Xia Zhou, Tam Vu.  
**FaceSense: Sensing Face Touch with an Ear-worn System.**  
*Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Vol. 5, No. 3, Article 110, 2021. (UbiComp 2021)*
- [8] **Qijia Shao**, Amy Sniffen, Julien Blanchet, Megan Elizabeth Hillis, Themistoklis K Haris, Jason Liu, Lorna C. Quandt, James Mahoney, David J. M. Kraemer, Xia Zhou, and Devin Balkcom.  
**Teaching American Sign Language in Mixed Reality.**  
*Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Vol. 4, No. 4, Article 152, 2020. (UbiComp 2021)*
- [7] Pin-Sung Ku, **Qijia Shao**, Te-Yen Wu, Jun Gong, Ziyang Zhu, Xia Zhou, and Xing-Dong Yang.  
**ThreadSense: Locating Touch on an Extremely Thin Interactive Thread.**  
*The ACM CHI Conference on Human Factors in Computing Systems. (CHI 2020)*
- [6] Zhao Tian, Charles J. Carver, **Qijia Shao**, Monika Roznere, Alberto Quattrini Li, and Xia Zhou.  
**PolarTag: Invisible Data with Light Polarization.**  
*International Workshop on Mobile Computing Systems and Applications (HotMobile 2020)*  
**Best Demo Award**
- [5] Ruibo Liu, **Qijia Shao**, Siqi Wang, Christina Ru, Devin Balkcom, and Xia Zhou.  
**Reconstructing Human Joint Motion with Computational Fabrics.**  
*Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Vol. 3, No. 1, 2019. (UbiComp 2019)*
- [4] Wei Li, Jun Wang, Guosheng Yang, Yue Zuo, **Qijia Shao**, Shaoqian Li.  
**Energy efficiency maximization oriented resource allocation in 5G ultra-dense network: Centralized and distributed algorithm.**  
*Computer Communication, vol. 130, pp. 10-19, 2018*
- [3] Guosheng Yang, Jun Wang, Guoyong Zhang, **Qijia Shao**, Shaoqian Li.  
**Joint Estimation of Timing and Carrier Phase Offsets for MSK Signals in Alpha-Stable Noise.**  
*IEEE Communication Letters, vol. 22, no. 1, pp. 89-92, 2018*
- [2] Guoyong Zhang, Jun Wang, Guosheng Yang, **Qijia Shao**, Shaoqian Li.  
**Nonlinear Processing for Correlation Detection in Symmetric Alpha-Stable Noise.**  
*IEEE Signal Processing Letters, vol. 25, no. 1, pp. 120-124, 2018*
- [1] Guosheng Yang, Jun Wang, Guoyong Zhang, **Qijia Shao**, Shaoqian Li.  
**Performance Analysis and Algorithm Design for Synchronization in Alpha-Stable Impulsive Noise.**  
*IEEE Global Communications Conference (GlobeCom 2017)*