

Qijia Shao

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

☎ (+1) 608-598-7425

✉ 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 CHI'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**[†], Charles J. Carver[†], 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**[†], Vimal Kakaraparthi[†], 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)