Qijia Shao

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Research Interests

My current research spans a range of different topics in **Mobile Computing**, **Machine Learning** and **Human-Computer Interaction**. I design, build and evaluate novel mobile systems, especially sensing systems. I have developed fabric sensing system for continuous joint monitoring. I am recently investigating cyberlearning and technological assistance(e.g., Mixed Reality, AR, VR) for teaching human motion tasks, which includes reliable sensing of human body configuration, actuation for feedback-based guidance, algorithms for communicating motion and computational techniques for evaluating motion quality.

Education

2018-Present **Dartmouth College**.
Ph.D. student in Computer Science
Advisors: **Prof. Xia Zhou and Prof. Devin Balkcom**

2014-2018 **University of Electronic Science and Technology of China**.
B.E in Electronic and Information Science, Yingcai Honours College
Advisor: **Prof. Jun Wang**
GPA: **3.99/4.0**

2016-2017 **National Chiao Tung University**.
Exchange student in Electrical Engineering
GPA: **4.0/4.0**

Appointment

Sep 2017 - Apr 2018 **Missouri University of Science and Technology**.
Research Intern
Advisor: **Prof. Yahong Rosa Zheng**
-Worked on statistical signal processing and machine learning in undersea acoustic communications and networks. Similar to the cognitive radio perspective, we design algorithms to predict and utilize the time gap between the already existed undersea acoustic communication to increase the system throughput.

Selected Honors & Awards

2020 ACM HotMobile 2020 Best Demo Award
2020 ACM HotMobile 2020 Student Travel 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

2017 Silver Prize in Chinese University Students Innovation and Entrepreneurship Competition

Teaching Assistant Experience

Fall 2018 **COSC 74/174 Machine Learning and Statistical Data Analysis**, *Dartmouth*.
-Held office hours, graded and wrote solutions for assignments and exams, and explained the exams.

Publications

[9] **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.
In submission to **UbiComp 2020**

[8] Pin-Sung Ku, **Qijia Shao**, Te-Yen Wu, Jun Gong, Ziyan 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**)

[7] 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

[6] 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**)

[5] 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*

[4] 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*

[3] 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*

[2] Wei Li, Jun Wang, **Qijia Shao** and Shaoqian Li.
Efficient Resource Allocation Algorithms for Energy Efficiency Maximization in Ultra-Dense Network.
IEEE Global Communications Conference (**GlobeCom 2017**)

[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**)