

# Qijia Shao

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## Education

- 2018-2023(Expected) **Dartmouth College.**  
Ph.D. student in Computer Science  
Advisors: **Prof. Xia Zhou** and **Prof. Devin Balkcom**  
Research Interests: **Applied Machine Learning and Mobile Systems**
- 2014-2018 **University of Electronic Science and Technology of China.**  
B.E in Computer Engineering, 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**

## Experience

- Summer 2021 **Research Intern, Signify (Philips Research).**
  - Performed in-depth statistical analysis for different sensors data and figured out the bottleneck of the previous algorithm.
  - Designed and implemented different Machine Learning/Deep Learning algorithms with pilot study data, validating the potential to improve the system performance.
  - 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, SQL

**Hardware:** Micro-controllers, PCB Design, VHDL

**System & Tools:** Linux, Unity, Git, L<sup>A</sup>T<sub>E</sub>X, 3D Design

**Machine Learning:** Scikit-learn, deep learning (PyTorch/TensorFlow)

**Academic Experience:** Reviewer for CHI'20, UbiComp'20'21.

## Selected Honors & Awards

- 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

- [10] Vimal Kakaraparthi†, **Qijia Shao**†, Charles J. Carver, Tien Pham, Nam Bui, VP Nguyen, Xia Zhou, Tam Vu.  
† **co-primary authors**  
**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)
- [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.**  
*Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, Vol. 4, No. 4, Article 152, 2020. (UbiComp 2021)
- [8] 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)*
- [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)*