

# KE LI

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## EDUCATION

<b>Cornell University</b>	Jun. 2021 - Aug. 2026 (Expected)
<i>Ph.D. Student in Information Science, School of Computing and Information Science, Advisor: Prof. <a href="#">Cheng Zhang</a></i>	
<b>Shanghai Jiao Tong University (SJTU)</b>	Sept. 2016 - Jul. 2020
<i>B.S. in Information Engineering, School of Electronic Information and Electrical Engineering</i>	
<ul style="list-style-type: none"><li>• <b>Overall GPA:</b> 91.41/100 (Rank <b>3/158</b>)      <b>Major GPA:</b> 91.16/100 (Rank <b>5/158</b>)</li><li>• Outstanding Graduates from Universities in Shanghai (<b>Top 5%</b>)</li></ul>	
<b>Carnegie Mellon University (CMU)</b>	Jul. 2019 - Sept. 2019
<i>Research Assistant in Department of Electrical and Computer Engineering, Supervisor: Prof. <a href="#">Swarun Kumar</a></i>	

## PUBLICATIONS

<b><a href="#">EarIO: A Low-power Acoustic Sensing Earable for Continuously Tracking Detailed Facial Movements</a>, <a href="#">Ke Li</a>, Ruidong Zhang, Bo Liang, François Guimbretière and Cheng Zhang, The Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)/Ubicomp '22, Volume 6, Issue 2, Article 62 (July 2022), 24 pages.</b>	Jul. 2022
<b><a href="#">Locating Everyday Objects using NFC Textiles</a>, Jingxian Wang, Junbo Zhang, <a href="#">Ke Li</a>, Chengfeng Pan, Carmel Majidi and Swarun Kumar, The 20th International Conference on Information Processing in Sensor Networks (IPSN '21). <i>Best Paper Award &amp; Best Presentation Award</i></b>	May 2021
<b><a href="#">A Constant Factor Approximation for <math>d</math>-Hop Connected Dominating Set in 3-Dimensional Wireless Network</a>, <a href="#">Ke Li</a>, Xiaofeng Gao, Fan Wu and Guihai Chen, IEEE Transactions on Wireless Communications (TWC), vol. 18, no. 9, pp. 4357-4367, 2019.</b>	Sept. 2019
<b><a href="#">QLEC: A Machine-Learning-Based Energy-Efficient Clustering Algorithm to Prolong Network Lifespan for IoT in High-Dimensional Space</a>, <a href="#">Ke Li</a>, Haowei Huang, Xiaofeng Gao, Fan Wu and Guihai Chen, The 48th International Conference on Parallel Processing (ICPP '19).</b>	Kyoto, Japan Aug. 2019

## TEACHING EXPERIENCES

<b>INFO 4120/6120: Ubiquitous Computing (Nominated for Outstanding Teaching Award)</b>	Fall 2021
<i>Teaching Assistant at Cornell University, Instructor: Prof. Cheng Zhang</i>	
This class is for both undergraduate and graduate students at Cornell with different backgrounds. As the only TA, my responsibilities were to hold office hours and project meetings with students to help them address the problems they encountered during individual assignments and group projects. The problems were usually related to a wide range of topics in ubiquitous computing including 3D printing, microcontrollers, sensors, signal processing (Java) and machine learning. Besides, I also provided grades and feedback on the students' assignments and project reports.	

## RESEARCH & CONTEST EXPERIENCES

<b>Design and Implementation of Broadcast Mechanism in Large-Scale IoT</b>	Sept. 2019 – Jun. 2020
<i>Undergraduate Thesis at SJTU, Supervisor: Prof. <a href="#">Xiaohua Tian</a></i>	
<ul style="list-style-type: none"><li>• Designed and implemented the first parallel downlink scheme for backscatter communication.</li><li>• Proposed the parallel communication and control system under the broadcast mechanism in large-scale IoT.</li><li>• Verified the feasibility of my design on Keysight ADS, a simulation software, and on a PCB-based prototype.</li></ul>	
<b>Crowdsourcing Task Assignment Strategy and Optimization Based on Social Network</b>	Nov. 2018 – Dec. 2019

*The 18<sup>th</sup> Innovation and Practice Plan for Undergraduates of SJTU, Supervisor: Prof. [Xiaofeng Gao](#)*

- Optimized the task assignment scheme in spatial crowdsourcing and proposed efficient truth inference algorithms.
- Measured the fairness of the whole system using Jain's Fairness Index after a preliminary experiment.
- Processed the data and conducted experiments on online crowdsourcing platforms.

#### **Modeling Trends of Global Languages and Location Options for New Offices**

Feb. 2018

*American Mathematical Contest in Modeling, Meritorious Winner (Top 10%), Team leader*

- Designed a Speaker Prediction Model that used study time of a language in a country to predict the distribution and numbers of various language speakers over time in different countries, based on the 10,000-Hour Rule.
- Proposed a Location Selection Model to provide location options for new offices using the Analytic Hierarchy Process and optimized the options with the Genetic Algorithm.

#### **Development of Immersion Stereometric Manipulation Replacement Robot**

Apr. 2017 - Oct. 2017

*The 32<sup>nd</sup> Participation in Research Program of SJTU*

- Designed binocular stereo glasses to observe the remote scene; Controlled the robot with a handle and gloves.
- Received an A grade as the team leader and best performer in the project.

### **HONORS & AWARDS**

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#### **A-level Outstanding Scholarship of Shanghai Jiao Tong University (Top 1%)**

Nov. 2019

*Scholarship awarded to outstanding students at SJTU*

#### **Tang Lixin Scholarship (Top 0.2%)**

Oct. 2019

*Scholarship founded by Mr. Tang Lixin and awarded to Top 60 students at SJTU*

#### **National Scholarship\*2 (3/158, 1/158)**

Oct. 2018, 2019

*Top scholarship awarded to undergraduates in China for their achievements in academics*

#### **B-level Outstanding Scholarship of Shanghai Jiao Tong University\*2 (Top 5%, Top 2%)**

Nov. 2017, 2018

*Scholarship awarded to outstanding students at SJTU*

#### **Wen-Yuan Pan Scholarship (Top 5%)**

Dec. 2017

*Scholarship founded by Wen-Yuan Pan Foundation*

### **EXTRACURRICULAR ACTIVITIES & LEADERSHIP**

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#### **Development Program for Excellent Student of SJTU, Group Leader**

Apr. 2017 – Jul. 2020

- Organized various activities, such as lectures, speech contests, volunteer programs, and summer social activities.
- Awarded Outstanding Participant Title in the 2018 Summer Social Practice of SJTU (Top 2%).

#### **Master Distinguished Lecture, SJTU, Director**

May. 2017 - Sept. 2018

- Organized professional academic lectures and invited scholars for speeches, including 8 Nobel Prize Laureates.
- Oversaw the entire process of lecture, including brand building, publicity, directing, reception and recognition.

### **TECHNICAL SKILLS**

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- **Programming Language:** C / C++, Python, Java
- **Platforms and Tools:** MATLAB, NS2, LaTeX, LabVIEW

### **ENGLISH PROFICIENCY**

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- **TOEFL:** 108 (R30 L26 S23 W29)      **GRE:** 321 = V-152 (54%) + Q-169 (95%), AW-4.0 (57%)