
Li Lu (卢立)

Research Professor

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RESEARCH INTERESTS

Mobile and IoT Security, Mobile Sensing, Ubiquitous Computing, Human-Machine Interactions.

EDUCATIONAL BACKGROUND

- Ph.D. in Computer Science and Technology, Shanghai Jiao Tong University, Shanghai, China, 2020.
- B.E. in Computer Science and Technology & B.Admin in Business Administration, Xi'an Jiaotong University, Xi'an, Shaanxi, China, 2015.

RESEARCH EXPERIENCE

- Research Professor, Zhejiang University
 - Location: Hangzhou, Zhejiang, China.
 - Duration: Jul. 2020 -present.
 - Duties: I am a tenure-track research professor at Zhejiang University, also being a doctoral and master advisor. Currently, I am working on the area of mobile and IoT security, mobile sensing and ubiquitous computing.
- Research Assistant, Shanghai Jiao Tong University
 - Location: Shanghai, China.
 - Duration: Sep. 2015-Jun. 2020.
 - Supervisor: Prof. [Jiadi Yu](#) and Prof. Minglu Li.
 - Duties: My previous research interest was cloud computing and network economic, now I mainly work on mobile and ubiquitous computing, cyber security and privacy, human-computer interactions. The main work is to adopt signal processing and machine learning techniques in mobile network and applications.
- Visiting Research Student, Rutgers University
 - Location: New Brunswick, NJ, USA.
 - Duration: Oct. 2018-Sep. 2019.
 - Supervisor: Prof. [Yingying Chen](#) (IEEE Fellow).
 - Duties: Mainly worked on acoustic-based communication system and mmWave radar-based sensing applications. The joint Ph.D. training program is supported by China Scholarship Council.
- Summer Internship, Zhejiang University
 - Location: Hangzhou, Zhejiang, China.
 - Duration: Jul. 2014-Aug. 2014.
 - Supervisor: Prof. [Gang Pan](#).
 - Duties: Mainly worked on Biocomputing (implement a PCA algorithm for ECG signals).
- Summer Internship, Xi'an Jiaotong University
 - Location: Xi'an, Shaanxi, China.
 - Duration: Jul. 2013-Aug. 2013.
 - Supervisor: Prof. [Yinliang Zhao](#).
 - Duties: Mainly worked on the code reverse engineering of ARM-based program.

Conference Papers

- [C1]. **Li Lu**, Jiadi Yu, Yingying Chen, Yan Wang, "VocalLock: Sensing Vocal Tract for Passphrase-Independent User Authentication Leveraging Acoustic Signals on Smartphones," in *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)/ACM UbiComp 2020*, vol. 4, no. 2, pp. 51:1-51:24, Cancun, Mexico, Jun. 2020, doi: [10.1145/3397320](https://doi.org/10.1145/3397320).
- [C2]. **Li Lu**, Jiadi Yu, Yingying Chen, Yanmin Zhu, Minglu Li, Xiangyu Xu, "I3: Sensing Scrolling Human-Computer Interactions for Intelligent Interest Inference on Smartphones," in *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)/ACM UbiComp 2019*, vol. 3, no. 3, pp. 97:1-97:22, London, England, Sep. 2019, doi: [10.1145/3351255](https://doi.org/10.1145/3351255).
- [C3]. **Li Lu**, Jiadi Yu, Yingying Chen, Yanmin Zhu, Xiangyu Xu, Guangtao Xue, Minglu Li, "KeyListener: Inferring Keystrokes on QWERTY Keyboard of Touch Screen through Acoustic Signals," in *Proceedings of IEEE International Conference on Computer Communications (IEEE INFOCOM 2019)*, pp. 775-783, Paris, France, Apr. 2019, doi: [10.1109/INFOCOM.2019.8737591](https://doi.org/10.1109/INFOCOM.2019.8737591).
- [C4]. **Li Lu**, Jiadi Yu, Yingying Chen, Hongbo Liu, Yanmin Zhu, Yunfei Liu, Minglu Li, "LipPass: Lip Reading-based User Authentication on Smartphones Leveraging Acoustic Signals," in *Proceedings of IEEE International Conference on Computer Communications (IEEE INFOCOM 2018)*, pp. 1466-1474, Honolulu, HI, USA, Apr. 2018, doi: [10.1109/INFOCOM.2018.8486283](https://doi.org/10.1109/INFOCOM.2018.8486283).
- [C5]. Hao Kong and **Li Lu**¹, Jiadi Yu, Yingying Chen, Yanmin Zhu, Linghe Kong, Minglu Li, "FingerPass: Finger Gesture-based Continuous User Authentication for Smart Homes Using Commodity WiFi," in *Proceedings of ACM International Symposium on Mobile Ad Hoc Networking and Computing (ACM MobiHoc 2019)*, pp. 201-210, Catania, Italy, Jul. 2019, doi: [10.1145/3323679.3326518](https://doi.org/10.1145/3323679.3326518).
- [C6]. **Li Lu**, Jian Liu, Jiadi Yu, Yingying Chen, Yanmin Zhu, Xiangyu Xu, Minglu Li, "VPad: Virtual Writing Tablet for Laptops Leveraging Acoustic Signals," in *Proceedings of IEEE International Conference on Parallel and Distributed Systems (IEEE ICPADS 2018)*, pp. 244-251, Sentosa, Singapore, Dec. 2018, doi: [10.1109/PADSW.2018.8644615](https://doi.org/10.1109/PADSW.2018.8644615).
- [C7]. **Li Lu**, Jiadi Yu, Yanmin Zhu, Shiyu Qian, Guangtao Xue, Minglu Li, "Cost-Efficient VM Configuration Algorithm in the Cloud using Mix Scaling Strategy," in *Proceedings of IEEE International Conference of Communications (IEEE ICC 2017)*, pp. 1-6, Paris, France, May 2017, doi: [10.1109/ICC.2017.7997241](https://doi.org/10.1109/ICC.2017.7997241).
- [C8]. Yang Bai, Jian Liu, **Li Lu**, Yilin Yang, Yingying Chen, Jiadi Yu, "BatComm: Enabling Inaudible Acoustic Communication with High-throughput for Mobile Devices," in *Proceedings of ACM Conference on Embedded Networked Sensor Systems (ACM SenSys 2020)*, Yokohama, Japan, Nov. 2020. doi: [10.1145/3384419.3430773](https://doi.org/10.1145/3384419.3430773).
- [C9]. Hua Xue, Jiadi Yu, Yanmin Zhu, **Li Lu**, Shiyu Qian, Minglu Li, "WiZoom: Accurate Multipath Profiling using Commodity WiFi Devices with Limited Bandwidth," in *Proceedings of Annual IEEE International Conference on Sensing, Communication, and Networking (IEEE SECON 2019)*, pp. 1-9, Boston, MA, USA, Jun. 2019, doi: [10.1109/SAHCN.2019.8824859](https://doi.org/10.1109/SAHCN.2019.8824859).
- [C10]. Liu Liu, Hanlin Yu, Zhongjie Ba, **Li Lu**, Feng Lin, Kui Ren, "PassFace: Enabling Practical Anti-Spoofing Facial Recognition with Camera Fingerprinting," in *Proceedings of IEEE International Conference on Communications (IEEE ICC 2021)*, Montreal, Canada, Jun. 2021. (Accepted)
- [C11]. Yanhua Cao, **Li Lu**, Jiadi Yu, Shiyu Qian, Yanmin Zhu, Minglu Li, "Online Cost-Aware Service Requests Scheduling in Hybrid Clouds for Cloud Bursting," in *Proceedings of the 18th International Conference on Web Information Systems Engineering (WISE 2017)*, pp. 259-274, Moscow, Russia, Oct. 2017, doi: [10.1007/978-3-319-68783-4_18](https://doi.org/10.1007/978-3-319-68783-4_18).

¹ Hao Kong and **Li Lu** are the co-first authors of this paper.

[C12]. Qiang Wu, Jiadi Yu, **Li Lu**, Shiyong Qian, Guangtao Xue, "Dynamically Adjusting Scale of a Kubernetes Cluster Under QoS Guarantee," in *Proceedings of IEEE International Conference on Parallel and Distributed Systems (IEEE ICPADS 2019)*, pp. 193-200, Tianjin, China, Dec. 2019, doi: [10.1109/ICPADS47876.2019.00037](https://doi.org/10.1109/ICPADS47876.2019.00037).

[C13]. Ahmad Ali, **Li Lu**, Yanmin Zhu, Jiadi Yu, "An Energy Efficient Algorithm for Virtual Machine Allocation in Cloud Datacenters," in *Proceedings of Conference on Advanced Computer Architecture (CCF ACA 2016)*, pp. 61-72, Weihai, Shandong, China, Aug. 2016, doi: [10.1007/978-981-10-2209-8_6](https://doi.org/10.1007/978-981-10-2209-8_6).

Journal Papers

[J1]. **Li Lu**, Jiadi Yu, Yingying Chen, Hongbo Liu, Yanmin Zhu, Minglu Li, "Lip Reading-Based User Authentication Through Acoustic Sensing on Smartphones," *IEEE/ACM Transactions on Networking*, vol. 27, no. 1, pp. 447-460, Feb. 2019, doi: [10.1109/TNET.2019.2891733](https://doi.org/10.1109/TNET.2019.2891733). (Reported by multiple media including IEEE Spectrum, Sohu Tech, etc.)

[J2]. **Li Lu**, Jiadi Yu, Yanmin Zhu, Minglu Li, "A Double Auction Mechanism to Bridge Users' Task Requirements and Providers' Resources in Two-Sided Cloud Markets," *IEEE Transactions on Parallel and Distributed Systems*, vol. 29, no. 4, pp. 720-733, Dec. 2018, doi: [10.1109/TPDS.2017.2781236](https://doi.org/10.1109/TPDS.2017.2781236).

[J3]. **Li Lu**, Jiadi Yu, Minglu Li, "Towards a Real-Time Anti-Theft Method for Mobile Devices Leveraging Acoustic Sensing," *Chinese Journal of Computers*, vol. 43, no. 10, pp. 2002-2018, Oct. 2020, doi: [10.11897/SP.J.1016.2020.02002](https://doi.org/10.11897/SP.J.1016.2020.02002).

[J4]. **Li Lu**, Jian Liu, Jiadi Yu, Yingying Chen, Yanmin Zhu, Linghe Kong, Minglu Li, "Enable Traditional Laptops with Virtual Writing Capability Leveraging Acoustic Signals," *The Computer Journal*, Jan. 2019, doi: [10.1093/comjnl/bxz153](https://doi.org/10.1093/comjnl/bxz153).

[J5]. Jiadi Yu, **Li Lu**, Yingying Chen, Yanmin Zhu, Linghe Kong, "An Indirect Eavesdropping Attack of Keystrokes on Touch Screen through Acoustic Sensing," *IEEE Transactions on Mobile Computing*, vol. 20, no. 2, pp. 337-351, Feb. 2020, doi: [10.1109/TMC.2019.2947468](https://doi.org/10.1109/TMC.2019.2947468).

[J6]. Hao Kong, **Li Lu**, Jiadi Yu, Yingying Chen, Feilong Tang, "Continuous Authentication through Finger Gesture Interaction for Smart Homes Using WiFi," *IEEE Transactions on Mobile Computing*. May 2020, doi: [10.1109/TMC.2020.2994955](https://doi.org/10.1109/TMC.2020.2994955).

[J7]. Yang Bai, **Li Lu**, Jerry Cheng, Jian Liu, Yingying Chen, Jiadi Yu, "Acoustic-based Sensing and Applications: A Survey," *Computer Networks*, vol. 181, pp. 107447:1-107447:19, Nov. 2020, doi: [10.1016/j.comnet.2020.107447](https://doi.org/10.1016/j.comnet.2020.107447).

[J8]. Yanhua Cao, **Li Lu**, Jiadi Yu, Shiyong Qian, Yanmin Zhu, Minglu Li, "Online Cost-rejection Rate Scheduling for Resource Requests in Hybrid Clouds," *Parallel Computing*, vol. 81, pp. 85-103, Jan. 2019, doi: [10.1016/j.parco.2018.12.003](https://doi.org/10.1016/j.parco.2018.12.003).

Posters

[CP1]. Yang Bai, Jian Liu, Yingying Chen, **Li Lu**, Jiadi Yu, "Poster: Inaudible High-throughput Communication Through Acoustic Signals," in *Proceedings of the 25th Annual International Conference on Mobile Computing and Networking (ACM MobiCom 2019)*, pp. 79:1-79:3, Los Cabos, Mexico, Oct. 2019, doi: [10.1145/3300061.3343405](https://doi.org/10.1145/3300061.3343405). (First Runner-up Poster Award)

PROFESSIONAL SERVICES

- Technical Program Committee: IEEE/ACM IWQoS 2021, IEEE ICPADS 2019.
- Reviewer: IEEE Transactions on Dependable and Secure Computing
IEEE Transactions on Mobile Computing
IEEE Transactions on Vehicular Technology
IEEE Transactions on Services Computing

IEEE Transactions on Multimedia
Knowledge-based Systems
Smart Health
Journal of Cloud Computing
Sensors
Journal of Cybersecurity and Privacy
IEEE ICC 2017
ACM AIIPCC 2019

- Member: China Computer Federation (CCF)
Association of Computing Machinery (ACM)
Institute of Electrical and Electronics Engineers (IEEE)

AWARDS

- Shanghai Computer Society Doctoral Dissertation Award Nominations, Shanghai Computer Society, 2020.
- ACM China SIGAPP Doctoral Dissertation Award, ACM China SIGAPP, 2020.
- Outstanding Graduate of Shanghai, Shanghai Education Committee, 2020.
- First Runner-up Poster Award, ACM MobiCom, 2019.
- Travel Grant of Global Young Scientist Summit of Singapore, National Research Foundation, 2019.
- Joint Ph.D. Training Grant, China Scholarship Council, 2018.
- National Scholarship for Doctoral Students, Ministry of Education of the People's Republic of China, 2018, 2019.
- Outstanding Graduate, Xi'an Jiaotong University, 2015.
- Excellent Undergraduate Student, Xi'an Jiaotong University, 2012-2014.
- National Encouragement Scholarship, Xi'an Jiaotong University, 2012, 2014.
- Lu Shidi 2nd Scholarship, Xi'an Jiaotong University, 2013.