Li Lu (卢立)

Ph.D. Candidate   Email: luli_jtu@sjtu.edu.cn
                                                       https://lynnlilu.github.io
                                                       800 Dongchuan Road
Department of Computer Science and Engineering   Minhang, Shanghai 200240
Shanghai Jiao Tong University   P. R. China

RESEARCH INTERESTS

Mobile Sensing and Computing, Cyber Security and Privacy, Human-Machine Interactions.

EDUCATIONAL BACKGROUND

• Ph.D. in Computer Science and Technology, Shanghai Jiao Tong University, Shanghai, China, 2020 (expected). Supervised by Prof. *Jiadi Yu* and Prof. *Minglu Li.*

• B.E. in Computer Science and Technology & B.Admin in Business Administration, Xi'an Jiaotong University, Xi'an, China, 2015.

RESEARCH EXPERIENCE

• Research Assistant, Shanghai Jiao Tong University

  - Location: Shanghai, China.

  - Duration: Sep. 2015-present.

  - 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.

PUBLICATIONS

Conference Papers

1. **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, London, England, Sep 2019, doi: 10.1145/3351255.

2. **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), Paris, France, Apr 2019, doi: 10.1109/INFOCOM.2019.8737591.

3. **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), Honolulu, HI, USA, Apr 2018, doi: 10.1109/INFOCOM.2018.8486283.

4. 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), Catania, Italy, Jul 2019, doi: 10.1145/3323679.3326518.

5. **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), Sentosa, Singapore, Dec 2018, doi: 10.1109/PADSW.2018.8644615.

6. **Li Lu**, Jiadi Yu, Yanmin Zhu, Shiyou 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), Paris, France, May 2017, doi: 10.1109/ICC.2017.7997241.

7. Hua Xue, Jiadi Yu, Yanmin Zhu, **Li Lu**, Shiyou 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), Boston, MA, USA, Jun 2019, doi: 10.1109/SAHCN.2019.8824859.

8. Yanhua Cao, **Li Lu**, Jiadi Yu, Shiyou 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), Moscow, Russia, Oct 2017, doi: 10.1007/978-3-319-68783-4_18.

9. Qiang Wu, Jiadi Yu, **Li Lu**, Shiyou 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), Tianjin, China, Dec 2019, doi: 10.1109/ICPADS47876.2019.00037.

Journal Papers

1. **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. (Reported by multiple media including IEEE Spectrum, Sohu Tech, etc.)

2. **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 (IEEE TPDS), vol. 29, no. 4, pp. 720-733, Dec 2018, doi: 10.1109/TPDS.2017.2781236.

3. **Li Lu**, Jiadi Yu, Minglu Li, "Towards a Real-Time Anti-Theft Method for Mobile Devices Leveraging

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

Acoustic Sensing," Chinese Journal of Computers, 2020.

4. **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, 2019, doi: 10.1093/comjnl/bxz153.

5. 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. Oct 2019, doi: 10.1109/TMC.2019.2947468.

6. Yanhua Cao, **Li Lu**, Jiadi Yu, Shiyou 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.

Posters

1. 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), Los Cabos, Mexico, Oct 2019, doi: 10.1145/3300061.3343405. (First Runner-up Poster Award)

PROFESSIONAL SERVICES

- Technical Program Committee: IEEE ICPADS 2019.
- Reviewer: IEEE ICC 2017, ACM AIIPCC 2019, Journal of Cloud Computing.
- Student Member: China Computer Federation (CCF)

AWARDS

- First Runner-up Poster Award, ACM MobiCom, 2019.
- 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.