Lixing Song

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EDUCATION

University of Notre Dame, Notre Dame, IN, USA
Ph.D. in Computer Science and Engineering, 2014 - 2018
Advisor: Aaron Striegel

Ball State University, Muncie, IN, USA
M.S. in Computer Science, 2013 - 2014
Advisor: Shaoen Wu

The University of Southern Mississippi, Hattiesburg, MS, USA
PhD student in Computer Science, 2011-2013 (Moved with advisor)
Advisor: Shaoen Wu

Wuhan University, Wuhan, China
B.E. in Electrical Engineering, 2007-2011

ACADEMIC EXPERIENCE

Assistant Professor 08/2018 - present
Computer Science and Software Engineering Department of **Rose-Hulman Institute of Technology**

SELECTED HONORS

IEEE SECON Travel Grant, National Science Foundation (NSF), San Diego, CA, USA, 2017
Department 3rd Paper Winner of the Graduate Research Symposium, University of Southern Mississippi, MS, USA, 2011
Excellent Project for National Innovative Experiment Program For Undergraduates, Wuhan University, China, 2011

TEACHING EXPERIENCE

CSSE132 - Introduction to Computer Systems 2018 Fall RHIT

PUBLICATIONS

Peer-Reviewed

1. **Lixing Song** and A. Striegel. A Lightweight Scheme for Rapid and Accurate WiFi Path Characterization. In: *27th International Conference on Computer Communication and Networks, ICCCN 2018, Hangzhou, China, July 30 - August 2, 2018*. **Invited**. 2018, pp.1–9. DOI: 10.1109/ICCCN.2018.8487433. https://doi.org/10.1109/ICCCN.2018.8487433.

2. **Lixing Song** and A. Striegel. SEWS: A Channel-Aware Stall-Free WiFi Video Streaming Mechanism. In: *Proceedings of the 28th Workshop on Network and Operating Systems Support for Digital Audio and Video*. NOSSDAV'18. Amsterdam, Netherlands: ACM, 2018. ISBN: 978-1-4503-5772-2/18/06. DOI: 10.1145/3210445.3210449. https://doi.org/10.1145/3210445.3210449.

3. **Lixing Song** and A. Striegel. Leveraging Frame Aggregation for Estimating WiFi Available Bandwidth. In: *14th Annual IEEE International Conference on Sensing, Communication, and Networking, SECON 2017, San Diego, CA, USA, June 12-14, 2017*. 2017, pp.1–9. DOI: 10.1109/SAHCN.2017.7964908. https://doi.org/10.1109/SAHCN.2017.7964908.

4. **Lixing Song** and A. Striegel. Leveraging frame aggregation to improve access point selection. In: *2017 IEEE Conference on Computer Communications Workshops, INFOCOM Workshops, Atlanta, GA, USA, May 1-4, 2017*. 2017, pp.325–330. DOI: 10.1109/INFCOMW.2017.8116397. https://doi.org/10.1109/INFCOMW.2017.8116397.

5. R. Purta, S. Mattingly, **Lixing Song**, O. Lizardo, D. Hachen, C. Poellabauer, and A. Striegel. Experiences measuring sleep and physical activity patterns across a large college cohort with fitbits. In: *Proceedings of the 2016 ACM International Symposium on Wearable Computers, ISWC 2016, Heidelberg, Germany, September 12-16, 2016*. 2016, pp.28–35. DOI: 10.1145/2971763.2971767. http://doi.acm.org/10.1145/2971763.2971767.

6. **Lixing Song**, S. Wu, and H. Wang. SIMPLEX: Symbol-Level Information Multiplex. *IEEE Internet of Things Journal* 3(5) (2016), 757–766.

7. X. Hu, **Lixing Song**, D. V. Bruggen, and A. Striegel. Is There WiFi Yet?: How Aggressive Probe Requests Deteriorate Energy and Throughput. In: *Proceedings of the 2015 ACM Internet Measurement Conference, IMC 2015, Tokyo, Japan, October 28-30, 2015*. 2015, pp.317–323. DOI: `10.1145/2815675.2815709`. `http://doi.acm.org/10.1145/2815675.2815709`.

8. **L. Song** and S. Wu. AARC: Cross-layer wireless rate control driven by fine-grained channel assessment. In: *2015 IEEE International Conference on Communications, ICC 2015, London, United Kingdom, June 8-12, 2015*. 2015, pp.3311–3316. DOI: `10.1109/ICC.2015.7248835`. `http://dx.doi.org/10.1109/ICC.2015.7248835`.

9. Y. Zhu, C. Tang, **L. Song**, S. Wu, and S. Biaz. Analytical and comparative investigation of 60 GHz wireless channels. *Telecommunication Systems* 60(1) (2015), 179–186.

10. Y. Zhu, **L. Song**, S. Wu, H. Wang, and C. Wang. Cooperative Stepwise Relaying and Combining for Multihop Vehicular Wireless Communication. *IEEE T. Vehicular Technology* 64(6) (2015), 2663–2671.

11. C. Tang, **L. Song**, J. Balasubramani, S. Wu, S. Biaz, Q. Yang, and H. Wang. Comparative Investigation on CSMA/CA-Based Opportunistic Random Access for Internet of Things. *IEEE Internet of Things Journal* 1(2) (2014), 171–179.

12. **L. Song** and S. Wu. Cross-layer wireless information security. In: *23rd International Conference on Computer Communication and Networks, ICCCN 2014, Shanghai, China, August 4-7, 2014*. 2014, pp.1–9. DOI: `10.1109/ICCCN.2014.6911744`. `http://dx.doi.org/10.1109/ICCCN.2014.6911744`.

13. **L. Song**, S. Wu, H. Wang, and Q. Yang. Distributed MapReduce engine with fault tolerance. In: *IEEE International Conference on Communications, ICC 2014, Sydney, Australia, June 10-14, 2014*. 2014, pp.3626–3630. DOI: `10.1109/ICC.2014.6883884`. `http://dx.doi.org/10.1109/ICC.2014.6883884`.

14. Y. Zhu, C. Tang, **L. Song**, Q. Yao, and S. Wu. Cooperative Binary Relaying and Combining for multi-hop wireless communication. In: *2012 IEEE Global Communications Conference, GLOBECOM 2012, Anaheim, CA, USA, December 3-7, 2012*. 2012, pp.4205–4210. DOI: `10.1109/GLOCOM.2012.6503777`. `http://dx.doi.org/10.1109/GLOCOM.2012.6503777`.

Demos/Posters

1. **Lixing Song** and A. Striegel. "FMNC - rapid and accurate wifi characterization: demo". In: *Proceedings of the 22nd Annual International Conference on Mobile Computing and Networking, MobiCom 2016, New York City, NY, USA, October 3-7, 2016*. 2016, pp.499–500. DOI: `10.1145/2973750.2985619`. `http://doi.acm.org/10.1145/2973750.2985619`.

In Preparation

1. **Lixing Song** and A. Striegel. *A Lightweight Cellular Bandwidth Characterization Scheme*. **To be submitted**. 2018.

2. **Lixing Song** and A. Striegel. *A Passive Client Side Control Packet-based WiFi Traffic Characterization Mechanism*. **To be submitted**. 2018.

INTELLECTUAL PROPERTIES

1. A. Striegel and **Lixing Song**. "Rapid End-to-End Path Characterization involving Wireless Network Hops". Patent US Patent Application 62/351,225 (US). June 2016.

2. **Lixing Song** and A. Striegel. "Novel Technique for Client-Side Passive Detection of WiFi Access Point Load". Copyright 2016 Notre Dame (US). 2016.

3. **Lixing Song** and A. Striegel. "Simplified Mechanism for Conveying Residual Capacity at a Wireless Access Point". Copyright 2016 Notre Dame (US). 2016.

TALKS& PRESENTATIONS

Leveraging Frame Aggregation for Estimating WiFi Available Bandwidth	*San Diego, CA, 2017*
IEEE SECON 2017	
FMNC: Rapid and Accurate WiFi Characterization: demo	*New York, NY, 2016*

ACM MobiCom 2016

Fast Mobile Network Characterization   Notre Dame, IN, 2015

Broadband Wireless Access and Applications Center (BWAC)

WiFi Cross-Layer Rate Adaptation   Hattiesburg, MS, 2011

Graduate Research Symposium, University of Southern Mississippi

REVIEW
EXPERIENCE   INFOCOM'2016(assigned)

IEEE Transaction on Mobile Computing

EURASIP Journal on Wireless Communications and Networking

Journal of Network and Systems Management

PROFESSIONAL   Wireless Institute Colloquium Student Coordinator   12/2017 Notre Dame, IN, USA
SERVICES   INFOCOM Student Volunteer   04/2016 San Francisco, CA, USA
                    MOBICOM Student Volunteer   10/2016 New York City, NY, USA

REFERENCES

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