VITA

PART I. PERSONAL DATA

Name	Xin Sun
Current Rank	Assistant Professor
Department	Computer Science

A. EDUCATION

Degree	*Date*	*University*	*Major*	*Minor*
Doctor of Philosophy	08/2012	Purdue University, West Lafayette	Computer Engineering	N/A
Bachelor of Engineering	07/2005	Univ. of Sci. & Tech. of China	Computer Engineering	N/A

B. PROFESSIONAL EMPLOYMENT PRIOR TO ARRIVAL AT BALL STATE

08/2012 – 08/2016: Tenure-Track Assistant Professor of Computer Science,
Florida International University, Miami, FL.

C. INITIAL EMPLOYMENT AT BALL STATE

Date 08/19/2016
Rank Assistant Professor

D. FIELD(S) OF PROFESSIONAL SPECIALIZATION

General field: Computer Science
Specialty: Computer networking

PART II. ACCOMPLISHMENTS

A. EVIDENCE OF OUTSTANDING TEACHING

1. Instructional activity
   a. Course taught at Ball State University:
      - CS 230 Computer Organization and Architecture
      - CS 327 Distributed Processing and Networks
      - CS 339 Advanced Seminar
      - CS 121 Computer Science 2

   b. Thesis/dissertation committee member or chairperson
      I am the thesis committee chairperson of the following M.Sc. student:

- Arthur Parsons

I am a thesis committee member of the following two M.Sc. students:
- Israa Mishkhal
- Ola Felemban

c. Research paper/creative project adviser

I have been funding and advising the following students on research projects since Fall 2016 (all students are funded by my NSF CRII grant):
- Arthur Parsons (M.Sc.),
- Daron Miller (CS undergraduate), authored a research paper recently accepted into the 42nd Annual IEEE Conference on Local Computer Networks; and also received a competitive Student Participation Grant from IEEE to attend the conference and present the work.
- Madeline Van Ness (CS undergraduate), attended the Spring 2017 S^2ERC showcase meeting and presented a poster.

d. Special assignments, e.g., independent studies, coordination of courses

I supervised the independent studies of the following students:
- Alan Farmer (CS499 Spring 17)
- Arthur Parsons (CS699, Fall 16 and Spring 17)
- Daron Miller (CS499, Fall 17)
- Nathan Barr (CS499, Fall 17, co-supervise with Dr. Fu-Shing Sun)
- Yaqi Han (CS499, Fall 17, co-supervise with Dr. Fu-Shing Sun)
- Jacob Little (CS499, Fall 17, co-supervise with Dr. Fu-Shing Sun)
- Riley Newkirk, (CS499, Fall 17, co-supervise with Dr. Fu-Shing Sun)
- Nan Zhang (CS699, Fall 17, co-supervise with Dr. Fu-Shing Sun)

e. Creative teaching grants

[1] PI. Ball State Provost Immersive Learning Grant. *Cyber-Infrastructure management via Software Automation, Data Analytics, and Visualization.* Spring 2017. $11,937.50 (Co-PI: Fu-Shing Sun)

2. Advanced Study, Additional Accomplishments, and Professional Improvement

[1] Completed the semester-long Ball State University New Faculty Academy, 08/2016-06/2016.

[2] Attended an i>clicker training session offered by Ball State iLearn, January 2017.

B. EVIDENCE OF SCHOLARSHIP

1. Refereed publications (excluding abstracts), published or accepted for publication.

(In the description, "IF" stands for "impact factor", which is provided by the respective journals, and "AR" stands for "acceptance rate", which is provided by the respective conferences. All publications listed below have been peer reviewed

before they were accepted for publication.)

Refereed Journals

[1] Xin Sun and Geoffrey Xie. An Integrated Systematic Approach to Designing Enterprise Access Control. IEEE/ACM Transactions on Networking. VOL. 24, NO. 6, December, 2016. (IF:1.81)

[2] Jeff Seibert, Xin Sun, Cristina Nita-Rotaru and Sanjay Rao. A Design for Securing Data Delivery in Peer-to-Peer Streaming. Journal of Computer Networks. Volume 55, issue 12, pp. 2730-2745, August 2011. (IF: 1.28)

[3] Minlan Yu, Xin Sun, Nick Feamster, Sanjay Rao, Jennifer Rexford. A Survey of Virtual LAN Usage in Campus Networks, IEEE Communications Magazine. Volume 49, issue 7, pp. 98-103, July 2011. (IF: 4.46)

[4] Yu-Wei Sung, Xin Sun, Sanjay Rao, Geoffery Xie and David Maltz. Towards Systematic Design of Enterprise Networks. IEEE/ACM Transactions on Networking, Volume 1,9 Issue 3, pp. 695-708, June 2011. (IF: 1.81)

[5] Xin Sun, Ruben Torres and Sanjay Rao. Preventing DDoS Attacks on Internet Servers Exploiting P2P Systems. Journal of Computer Networks, Volume 54, Issue 15, pp. 2756-2774, October 2010. (IF: 1.28)

[6] Xin Sun, Ruben Torres and Sanjay Rao. On the Feasibility of Exploiting P2P Systems to Launch DDoS Attacks. Journal of Peer-to-Peer Networking and Applications, Volume 3, Number 1, pp. 36-51, March 2010. (IF: 0.46)

[7] Ruben Torres, Xin Sun, Aaron Walters, Cristina Nita-Rotaru and Sanjay Rao. Enabling Confidentiality of Data Delivery in an Overlay Broadcasting System. IEEE journal on Selected Area in Communications**,** Volume 25, Issue 9, pp. 1732-1744. December 2007. (IF: 4.14)

Refereed Conference Proceedings

(denotes undergraduate research assistants under my direct supervision.)*

[1] Fernando Mendez***** and Xin Sun. *Dynamic Flow Scheduling in a Software-Defined Network Environment.* Accepted to appear in Proceedings of the 15th IEEE Annual Consumer Communications & Networking Conference (IEEE CCNC), Las Vegas, Nevada, January, 2018. (2 pg, AR: not published yet.)

[2] Xin Sun. *Shedding Light on the Complexity of Enterprise Routing Design: A Case Study*. Accepted to appear in Proceedings of the 3rd IEEE International Conference on Computer and Communications (IEEE ICCC). Chengdu, China, December, 2017. (5pg, AR: not published yet.)

[3] Daron Miller* and Xin Sun, *Systematic IP Prefix Assignment for Compact Router Forwarding Tables.* Accepted to appear in Proceedings of the 42nd Annual IEEE Conference on Local Computer Networks (IEEE LCN), Singapore, October, 2017. (9pg. AR: not published yet.)

[4] Xin Sun and Fu-Shing Sun. *A Hybrid Approach to Detecting Traffic Anomaly in Large-Scale Data Networks*. In Proceedings of International Conference on Computational Science and Computational Intelligence (CSCI). Las Vegas, Nevada, December 2016. pp. 1418-1419. (2pg, AR: 26%)

[5] Chris Cai, Franck Le, Xin Sun, Geoffrey Xie, Hani Jamjoom, Roy Campbell. *CRONets: Cloud-Routed Overlay Networks.* In Proceedings of IEEE International Conference on Distributed Computing Systems (IEEE ICDCS), Nara, Japan, June 2016. pp. 67-77. (10pg, AR:17.5%)

[6] Dennis Volpano, Xin Sun and Geoffrey Xie. *Towards Systematic Detection and Resolution of Network Control Conflicts*, In Proceedings of ACM SIGCOMM Workshop on Hot Topics in Software Defined Networking (ACM HotSDN), Chicago, IL, August 2014. pp. 67-72. (6pg, AR:28.9%)

[7] Michael O'Neill*, Andrew Wells* and Xin Sun. *Towards a Novel and Optimal Packet Identifier Design for SDN.* In proceedings of ACM SIGCOMM Workshop on Hot Topics in Software Defined Networking (ACM HotSDN), Chicago, IL, August 2014. pp. 223-224. (2pg, AR:47.3%)

[8] Xin Sun and Geoffrey Xie. *Minimizing Network Complexity through Integrated Top-down Design.* In proceedings of ACM International Conference on emerging Networking EXperiments and Technologies (ACM CoNEXT), Santa Barbara, CA, December 2013. pp. 259-270. (12pg, AR:20.2%).

[9] Xin Sun, Sanjay Rao and Geoffrey Xie. *Modeling Complexity of Enterprise Routing Design*. In proceedings of ACM International Conference on emerging Networking EXperiments and Technologies (ACM CoNEXT), Nice, France, December 2012. pp. 85-96. (12pg. AR:17.6%)

[10] Xin Sun, Jinliang Wei, Sanjay Rao and Geoffrey Xie. *A Software Toolkit for Visualizing Enterprise Routing Design*. In Proceedings of IEEE Symposium on Configuration Analytics and Automation (IEEE SafeConfig), Arlington, VA. October 2011. pp. 1-8. (8pg, AR:34.5%)

[11] Xin Sun and Sanjay Rao. *A Cost-Benefit Framework for Judicious Enterprise Network Redesign*. IEEE Conference on Computer Communications (IEEE INFOCOM), Shanghai, China, April. 2011. pp. 221-225. (5pg, AR:23.4%)

[12] Mohammad Hajjat, Xin Sun, Yu-Wei Sung, David Maltz, Sanjay Rao, Kunwadee Sripanidkulchai, and Mohit Tawarmalani. *Cloudward Bound: Planning for Beneficial Migration of Enterprise Applications to the Cloud.* In Proceedings of ACM SIGCOMM, New Delhi, India, 2010. pp. 243-254. (12pg, AR:12.0%)

[13] Xin Sun, Yu-Wei Sung, Sunil Krothapalli and Sanjay Rao. *A Systematic Approach for Evolving VLAN Design*. In Proceedings of IEEE Conference on Computer Communications (IEEE INFOCOM), San Diego, CA, 2010. pp. 1-9. (9pg, AR:17.5%)

[14] Jeffrey Seibert, Xin Sun, Sanjay Rao, and Cristina Nita-Rotaru. *Towards Securing Data Delivery in Peer-to-Peer Streaming*. In Proceedings of International Conference on COMmunication Systems and NETworkS (COMSNETS), Invited Paper, Bangalore, India, 2010. pp. 1-10. (10pg)

[15] Sunil Krothapalli, Xin Sun, Yu-Wei Sung, Suan Aik Yeo and Sanjay Rao. *A Toolkit for Automating and Visualizing VLAN Configuration.* In Proceedings of ACM CCS Workshop on Assurable & Usable Security Configuration (ACM SafeConfig), Chicago, IL, 2009. pp. 1-6. (6pg, AR:28.6%)

[16] Xin Sun, Ruben Torres and Sanjay Rao. *DDoS Attacks by Subverting Membership Management in P2P Systems.* In Proceedings of NSF Workshop on Secure Network (IEEE NPSec), Beijing, China, 2007. pp. 1-6. (6pg, AR:44.4%)

[17] Ruben Torres, Xin Sun, Aaron Walters, Cristina Nita-Rotaru and Sanjay Rao. *Enabling Confidentiality of Data Delivery in an Overlay Broadcasting System*. In Proceedings of IEEE INFOCOM, Anchorage, AK, 2007. pp. 607-615. (9pg, AR:18%)

Chapters in Books

[1] Xin Sun. A top-down framework for modeling routing design complexity. Chapter in book "Redesigning the Future of Internet Architectures". IGI Global. ISBN13: 9781466683716. May 2015 (22 pg,

refereed.)

2. Contract, Grants, and Funding for Research/Creative Endeavors

a. External

[1] Sole PI. Security and Software Engineering Research Center (S^2ERC), a National Science Foundation Industry/University Cooperative Research Center. *Automated and Assurable Security Policy Migration to Software-defined Networking.* 6/1/2017-5/31/2018. $20,000.

[2] Sole PI. National Science Foundation. *CRII: NeTS: Characterizing, Quantifying and Modeling Network Complexity*. CNS-1660569. 10/1/2016-4/30/2018. $134,346.
(The original award was from 05/2015-04/2017, totaling $150,384, granted when I was at Florida International University. It was transferred to Ball State University when I joined Ball State in October 2016. The dollar amount listed above is the amount awarded to Ball State.)

[3] Co-PI. Florida Center for Cybersecurity. *Creating and Composing Software-Defined Networking (SDN) Security Modules*. 5/1/2016-4/30/2017. $50,000. (In collaboration with University of South Florida. My share: $25,000).
(This grant is from a state agency of Florida which prohibits transferring the grant to another state. I have thus transferred this grant to a colleague at Florida International University.)

[4] Senior Personnel. National Science Foundation/Department of Defense. *REU SITE: ASSET: Research Experiences for Undergraduates in Advanced Secured Sensor Enabling Technologies*. 3/1/2013 - 2/29/2016. $360,000.

b. Internal

[1] ASPiRE Faculty Travel Grant for attending the Fall 2016 Security and Software Engineering Research Center (S^2ERC) Showcase event and presenting two new research proposals, $300, November 2016.

3. Papers presented at professional meetings (invited or refereed)
The "refereed conference papers" listed above in II-B-2 were all presented in the respective conferences. Additional presentations that I have given are listed below.

[1] *Design and Implementation of an Automated Configuration Audit Tool.* New Proposal Presentation at the Spring 2017 Security and Software Engineering Research Center (S^2ERC) showcase meeting, Washington, DC. May 2017. (Referred)

[2] Metrics, Models, and Software Tools for Managing Network Complexity. New Proposal Presentation at the Fall 2016 Security and Software Engineering Research Center (S^2ERC) showcase meeting, Pensacola, FL. November 2016. (Referred)

[3] Automated and Assurable Security Policy Migration to Software-defined Networking. New Proposal Presentation at the Fall 2016 Security and Software Engineering Research Center (S^2ERC) showcase meeting, Pensacola, FL. November 2016. (Referred)

[4] *Minimizing Network Complexity through a Novel Integrated Design Approach*, Internet Engineering Task Force (IETF) 87th Meeting, Berlin, July 2013. (Invited)

[5] *Minimizing Network Complexity through a Novel Integrated Design Approach*, Tech Talk, Cisco, San Jose, July 2013. (Invited)

[6] *A Top-Down Approach to Modeling Complexity of Enterprise Routing Design*, Technology Seminar, France Telecom/Orange, March 2013. (Invited)

[7] *A Top-Down Approach to Modeling Complexity of Enterprise Routing Design*, Internet Engineering Task Force (IETF) 85th Meeting, Atlanta, GA, November 2012. (Invited)

4. Sponsorship of student grants

I have been funding and advising the following students on research projects since Fall 2016 (all students are funded by my NSF CRII grant):

- Arthur Parsons (M.Sc.),
- Daron Miller (CS undergraduate)
- Madeline Van Ness (CS undergraduate)

5. Advanced Study, Additional Accomplishments, and Professional Improvement

[1] Completed the year-long SPA Fellows Program, offered by Ball State Sponsored Projects Administration (SPA) during the 2016-2017 academic year, and awarded the SPA Fellow status.

C. EVIDENCE OF PROFESSIONAL SERVICE

1. Service to the academic community

a. Committee work: Department, College, University

2016-2018: Computer Science Foundations Curriculum Committee

2. Editorships, review panels

Technical Program Committee Member and Meta Reviewer, IEEE LCN 2017.
Technical Program Committee Member, IEEE INFOCOM 2017.
Technical Program Committee Member, IEEE LCN 2016.

Technical Program Committee Member, IEEE ICCCN 2016.

3. Service to the local, state, regional, national, and international communities
Reviewer for IEEE/ACM Transactions on Networking
Reviewer for IEEE Transactions on Dependable and Secure Computing
Reviewer for IEEE Transactions on Network and Service Management
Reviewer for Wiley Journal of Software: Practice and Experience
Reviewer for Elsevier Journal on Computer Networks
Reviewer for Springer Journal of Peer-to-Peer Networking and Applications
Reviewer for IEEE Transactions on Emerging Topics in Computing
Reviewer for IEEE Multimedia
Reviewer for Elsevier journal of Parallel and Distributed Computing
Reviewer for ACM Computing Surveys