

LI WU

Manning College of Information & Computer Sciences
A313 LGRC, 740 N Pleasant St,
Amherst, MA 01003

Office: +1 (413) 545-4275
Phone: +1 (413) 409 4777
Email: liwu@umass.edu

RESEARCH INTERESTS

Cloud computing, edge computing, performance, reliability, and sustainability

EDUCATION

Technische Universität Berlin

09/2018~11/2021

Ph.D. in Computer Science

Supervisor: Odej Kao

Co-supervisors: Johan Tordsson and Erik Elmroth

- Dissertation: Automatic Performance Diagnosis and Recovery in Cloud Microservices (*magna cum laude*)

Southeast University

09/2012~03/2015

M.S. in Information and Communication Engineering (*postgraduate recommendation*)

Supervisor: Prof. Lijun Chen

Hohai University

09/2008~06/2012

B.S. in Telecommunication Engineering (*Top 2/124*)

PROFESSIONAL EXPERIENCE

University of Massachusetts Amherst, USA

06/2023~present

Postdoctoral Research Associate,

[edge computing, edge AI, sustainability, IoT](#)

Supervisor: Prashant Shenoy

- Conduct research on edge AI, reliability, sustainability, and IoT
- Mentor Ph.D., and M.S. students

Bosch Research, China

03/2022~06/2023

Senior Research Scientist

[edge computing, autonomous driving, safety](#)

Collaborators: Naresh Nayak, Johannes Morgenroth, Yifan Du

- Conducted research on reliable distributed system, including system design and safety-aware resource management for infrastructure-assisted autonomous driving
- Designed, developed, and evaluated the system in real-world
- Mentored 1 master thesis
 - Xiangyu Wu from University of Science and Technology of China

Las Naves, Spain

09/2020~03/2021

Researcher

[fog computing, IoT](#)

Co-ordinator: Guillaume Pierre

- Created fog platform “LivingFog” and organized hackathon with 7 PhD students

Technische Universität Berlin, Germany

09/2018~11/2021

Research Associate

[cloud computing, microservices, performance](#)

Supervisor: Odej Kao

ESR in FogGuru project, Data scientist in Elastisys (Sweden), co-supervised by Johan Tordsson and Erik Elmroth

- Conducted research on automatic performance diagnosis and recovery for cloud microservices
- Mentored M.S., and undergraduate students (seminars and thesis)

IBM, China 07/2016~09/2018
Site Reliability Engineer, IBM Bluemix [cloud computing, kubernetes, reliability](#)

- Maintained and operated large-scaler container and kubernetes cluster service
- Develop k8s monitoring system with Go and automation with Python and Ansible

IBM, China 05/2015~07/2016
Software Developer, IBM Cloud [cloud computing, openstack](#)

- Develop deployment and monitoring components for IBM Cloud Management based on Openstack

Ericsson, China 06/2014~10/2014
Software Developer Intern, SGSN-MME [mobile telecommunication](#)

PUBLICATIONS

1. **L. Wu**, J. Tordsson, E. Elmroth and O. Kao, "[MicroRCA: Root Cause Localization of Performance Issues in Microservices](#)," NOMS 2020 (**Citation: 134**).
2. Ahmed, A., Arkian, H., Battulga, D., Fahs, A. J., Farhadi, M., Giouroukis, D., ... & **Wu, L.** [Fog computing applications: Taxonomy and requirements](#). *arXiv preprint*, 2019. (**Equal contribution, citation: 64**)
3. **L. Wu**, J. Tordsson, A. Acker and O. Kao, "[MicroRAS: Automatic Recovery in the Absence of Historical Failure Data for Microservice Systems](#)," UCC 2020. (**Citation: 12**).
4. **Li Wu**, Jasmin Bogatinovski, Sasho Nedelkoski, Johan Tordsson, Odej Kao. "[Performance Diagnosis in Cloud Microservices using Deep Learning](#)". ICSOC 2020. (**Citation: 29**).
5. **Li Wu**, Johan Tordsson, Jasmin Bogatinovski, Erik Elmroth, Odej Kao. "[MicroDiag: Fine-grained Performance Diagnosis for Microservice Systems](#)". ICSE 2021. (**Citation: 25**).
6. **L. Wu**, J. Tordsson, E. Elmroth and O. Kao, "[Causal Inference Techniques for Microservice Performance Diagnosis: Evaluation and Guiding Recommendations](#)" ACSOS 2021 (**Citation: 14**).
7. D Battulga, M Farhadi, MA Tamiru, **L Wu**, G Pierre, "[LivingFog: Leveraging fog computing and LoRaWAN technologies for smart marina management \(experience paper\)](#)", ICIN, 2022
8. J Bogatinovski, S Nedelkoski, **L Wu**, J Cardoso, O Kao, "[Failure Identification from Unstable Log Data using Deep Learning](#)" CCGRID, 2022
9. WA Hanafy, **L Wu**, T Abdelzaher, S Diggavi, P Shenoy, "[Failure-Resilient ML Inference at the Edge through Graceful Service Degradation](#)", MILCOM, 2023
10. Hetvi Hiren Shastri, **Li Wu**, Prashant Shenoy, "[IoT-Roam: Enabling Capability-driven Roaming and Collaboration in Dynamic IoT Environments](#)", Mobisys, 2024 (**submitted**)
11. Mehmet Savasci, Abel Souza, **Li Wu**, David Irwin, Ahmed Ali-Eldin and Prashant Shenoy, "[SLO-Power: SLO and Power-aware Elastic Scaling for Web Sevicees](#)", CCGrid, 2024 (**submitted**)
12. **Li Wu**, Lijun Chen. Experimental Research on Time of Flight in Acoustic Pyrometry Applying to Furnace, Technical Acoustic. (2018, IN CHINESE)

Patents:

1. Lin Cai, Yi Ming Yin, **Li Wu**, Xue Gang Ding, Testing an online system for service oriented architecture (soa) services, 2020, IBM (US patent)
2. 5 patents are in progress (Bosch research)

SELECTED HONORS AND AWARDS	<ol style="list-style-type: none"> 1. ESR of Marie Skłodowska-Curie grant 765452 (FogGuru), 2018-2021 2. Best of IBMer: Best new SRE of Cloud Foundation Services, 2017. 3. The Third Prize in the National Graduate Student Mathematical Contest in Modeling, 2013. 4. Excellent Bachelor Thesis (Top 1%), 2012. 5. National Scholarship (Top 0.2% nationwide), The Chinese Ministry of Education, 2011. 6. The First-Prize in the 2010 Jiangsu TI cup Electronic Design competition 7. Academic Excellence Scholarship, Science and Technology Innovation Scholarship (2008-2012).
INVITED TALKS	<ul style="list-style-type: none"> • Ericsson Gothenburg, Virtual, November 2021
ACADEMIC SERVICE	<ul style="list-style-type: none"> • Member of organising committee for the ICAC 2019, AIOPS 2021 • Review: <ul style="list-style-type: none"> ◦ Conference: WWW'20 ◦ Journal: IEEE Transactions on Services Computing' 24
TEACHING AND MENTORING	<p>University of Massachusetts Amherst (2023 - present)</p> <ul style="list-style-type: none"> • Supervisor of PhD students • Supervisor of master students for independent study and master thesis <p>Technische Universität Berlin (2019 - 2021)</p> <ul style="list-style-type: none"> • Supervisor for bachelor and master students in seminars • Supervisor for master thesis