

University of Massachusetts Amherst  
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- Research on circuit design for ultrasonic washing machines.

## INDUSTRY EXPERIENCE

<b>Bosch Research, China</b>	03/2022 – 06/2023
<i>Senior Research Scientist, Reliable Distributed System (5 patents)</i>	
<ul style="list-style-type: none"> <li>▪ Led research on reliable distributed systems for autonomous driving.</li> <li>▪ Directed teams to integrate solutions into products, impacting industry standards.</li> <li>▪ Developed 5 patents related to distributed systems.</li> </ul>	
<b>Elastisys, Sweden</b>	09/2018 – 12/2021
<i>System Scientist, Advisors: Johan Tordson, Erik Elmorth (MicroX papers)</i>	
<ul style="list-style-type: none"> <li>▪ Research on performance diagnosis and recovery in cloud microservices.</li> <li>▪ Published MicroX papers.</li> <li>▪ Developed and open-sourced the MicroRCA project.</li> </ul>	
<b>Las Naves, Spain</b>	09/2020 – 03/2021
<i>Researcher, Advisors: Guillaume Pierre (LivingFog platform and hackathon)</i>	
<ul style="list-style-type: none"> <li>▪ Design and implement the LivingFog platform for IoT devices.</li> <li>▪ Organized and presented at a hackathon centered around the LivingFog platform.</li> <li>▪ Authored a paper published in ICIN'22.</li> </ul>	
<b>IBM, China</b>	05/2015 – 09/2018
<i>Software Developer/Site Reliable Engineer, IBM Cloud (1 patent)</i>	
<ul style="list-style-type: none"> <li>▪ Developed and operated key cloud computing techniques, including Kubernetes and OpenStack.</li> <li>▪ Issued 1 US patent.</li> </ul>	

## PUBLICATIONS

### Highly Cited Papers

<b>MicroRCA: Root cause localization of performance issues in microservices</b>	2020
<i>Wu L, Tordsson J, Elmroth E, Kao O</i>	
<i>The 32th IEEE/IFIP Network Operations and Management Symposium (NOMS'20)</i>	
<i>Citations: 240+</i>	
<b>MicroDiag: Fine-grained performance diagnosis for microservice systems</b>	2021
<i>Wu L, Tordsson J, Bogatinovski J, Elmroth E, Kao O</i>	
<i>The 2nd International Workshop on Cloud Intelligence / AIOps (AIOps'21) Co-located with ICSE 2021</i>	
<i>Citations: 70+</i>	
<b>Performance diagnosis in cloud microservices using deep learning</b>	2020
<i>Wu L, Bogatinovski J, Nedelkoski S, Tordsson J, Kao O</i>	
<i>The 19th International Conference on Service-Oriented Computing</i>	
<i>Citations: 60+</i>	
<b>Fog computing applications: Taxonomy and requirements</b>	2019
<i>Ahmed, A., Arkian, H., Battulga, D., Fahs, A. J., Farhadi, M., Giouroukis, D., ... &amp; Wu, L (Contributed equally)</i>	
<i>arXiv:1907.11621</i>	
<i>Citations: 70+</i>	

### Other Notable Publications

<b>CarbonEdge: Leveraging mesoscale spatial carbon-intensity variations for low carbon edge computing</b>	2025
<i>Wu L, Hanafy WA, Souza A, Nguyen K, Harkes Jan, Irwin D, Satyanarayanan M, Shenoy P</i>	
<i>34th ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC)</i>	
<b>Data Centers' Carbon Emissions at a Crossroads: An Empirical Study</b>	2025
<i>Maji D, Hanafy W, Wu L, Irwin D, Shenoy P, Sitaraman R</i>	
<i>HotCarbon Workshop on Sustainable Computer Systems (HotCarbon)</i>	
<b>Enhancing Resilience in Distributed ML Inference Pipelines for Edge Computing</b>	2024
<i>Wu L, Hanafy WA, Souza A, Abdelzaher T, Verma G, Shenoy P</i>	
<i>2024 IEEE Military Communications Conference (MILCOM)</i>	
<b>Acies-OS: A Content-Centric Platform for Edge AI Twinning and Orchestration</b>	2024
<i>Li J, Chen Y, Kimura T, Wang T, Wang R, Kara D, Hu Y, Wu L, Hanafy WA, Souza A, Shenoy P</i>	

- 33rd International Conference on Computer Communications and Networks (ICCCN)
- SLO-Power: SLO and Power-aware Elastic Scaling for Web Services** 2024  
 Savasci M, Souza A, **Wu L**, Irwin D, Ali-Eldin A, Shenoy P  
 24th IEEE International Symposium on Cluster, Cloud and Internet Computing (CCGrid)
- Failure-Resilient ML Inference at the Edge through Graceful Service Degradation** 2023  
 Hanafy WA, **Wu L**, Abdelzaher T, Diggavi S, Shenoy P  
 2023 IEEE Military Communications Conference (MILCOM)
- Failure identification from unstable log data using deep learning** 2022  
 Bogatinovski J, Nedelkoski S, **Wu L**, Cardoso J, Kao O.  
 22nd IEEE International Symposium on Cluster, Cloud and Internet Computing (CCGrid)
- LivingFog: Leveraging fog computing and LoRaWAN technologies for smart marina management (experience paper)** 2022  
 Battulga D, Farhadi M, Tamiru MA, **Wu L**, Pierre G (Contributed equally)  
 5th Conference on Innovation in Clouds, Internet, and Networks (ICIN)
- Causal inference techniques for microservice performance diagnosis: Evaluation and guiding recommendations** 2021  
**Wu L**, Tordsson J, Elmroth E, Kao O  
 2021 IEEE International Conference on Autonomic Computing and Self-Organizing Systems (ACSOS)
- MicroRAS: Automatic recovery in the absence of historical failure data for microservice systems** 2021  
**Wu L**, Tordsson J, Acker A, Kao O  
 13th International Conference on Utility and Cloud Computing (UCC)

## Posters

- Rethinking Collaboration Among Mobile Devices in IoT Environments** 2025  
 Shastri H, Hanafy W, **Wu L**, Irwin D, and Srivastava M, Shenoy, P  
 Proceedings of the 23rd ACM Conference on Embedded Networked Sensor Systems (SenSys)

## Journal Papers

- Experimental Study on Sound Wave Transit Time Measurement in Furnace Acoustic Temperature Measurement** 2018  
**Wu L**, Chen Lijun  
 Acoustic Technology
- Experimental Evaluation of Sound Wave Propagation Characteristics in Waveguides** 2015  
 Xu C, **Wu L**, Chen Lijun  
 Acoustics and Electronic Engineering
- Research on Matching Technology for Ultrasonic Fruit and Vegetable Washing Machines** 2013  
**Wu L**, Zhu Changping  
 Acoustics and Electronic Engineering

## Under Review

- FailLite: Failure-Resilient Model Serving for Resource-Constrained Edge Environments** 2025
- CarbonFlex: Enabling Carbon-aware Provisioning and Scheduling for Cloud Clusters** 2025

## In Preparation

- Scalable LLM-Serving at the Edge** 2025

**PATENTS****Granted Patents**

**Testing an online system for service oriented architecture (SOA) services** 2021  
*L Cai, YM Yin, L Wu, XG Ding*  
*US Patent 11,169,905*

**Pending Patents**

5 Patents on reliable distributed systems for autonomous driving.

**HONORS & AWARDS**

- Best of IBMer: Best new SRE of Cloud Foundation Services, IBM 2017
- SEU Alumnus Scholarship for Outstanding Students 2013 – 2014
- The Third Prize in the National Graduate Student Mathematical Contest in Modeling 2013
- Best Bachelor Thesis (Top 1%) 2012
- **National Scholarship** (Top 0.2% nationwide), The Chinese Ministry of Education 2011
- 2nd Prize in the Physical and Experimental Science Technology Innovation 2011
- 1st Prize in the TI Cup Electronic Design competition 2010
- 1st Prize in the Physics Contest of HHU 2010
- 1st Prize in the Mathematics Contest of HHU 2009
- HHU Academic Excellence Scholarship, Science and Technology Innovation Scholarship 2008 – 2012

**INVITED TALKS****Reliable Large-Scale Computing**

*KU Leven, Belgium* 11/2024

**Automatic Performance Diagnosis and Recovery in Cloud Microservices**

*Zscaler, US* 08/2024

**MicroRCA: Root Cause Localization of Performance Issues in Microservices**

*Ericsson, Sweden* 08/2021

**SERVICE TO PROFESSION AND UNIVERSITY****Conference Organization**

Second International Workshop on Artificial Intelligence for IT Operations at ICSOC 2021

The 16th IEEE International Conference on Autonomic Computing (ICAC) 2019

**Reviewer**

IEEE Internet Computing 2025

ICT Express 2025

IEEE Transactions on Services Computing 2024

Sustainable Computing: Informatics and Systems 2024, 2025

Journal of Parallel and Distributed Computing 2024, 2025

Performance Evaluation 2024, 2025

IEEE Transactions on Network and Service Management 2024, 2025

International World Wide Web Conference 2020

**Hackathon Organization: Hack the fog**

2021

- Organized and coordinated the event.

**Panel Chair: 15th Cloud Control Workshop**

2019

- Led the discussion panel on "Anomaly detection in edge/fog computing".

**Outreach: UMass Turing Summer Program**

2024, 2025

- Role: Organizer and Coordinator
- Promoted and organized the program to attract high school participants in western Massachusetts.

- Coordinated with professors and lecturers to ensure the smooth execution of the three-week program.

## TEACHING

### University of Massachusetts Amherst

2024, 2025

UMass Turing Summer Program – <https://lass.cs.umass.edu/turing/>

- Coordinator and Teacher
- Syllabus, class, and tutorial preparations.
- Delivered lectures on "Introduction to Python Programming" and "Cloud Computing"
- Capstone projects coordination and supervision.

### Technische Universität Berlin

2020-2021

Teaching Assistant: Distributed and Operating System Seminar

- Prepared and organized research topics for seminar students.
- Guided students in developing research ideas, crafting their reports, and preparing presentations.
- Managed grading and provided feedback on student work.

Hackathon: Hack the fog – <http://www.fogguru.eu/living-lab/hackthefog/>

2021

- Coordinator and Teacher
- Delivered lectures on "Using Node-Red for the IoT and fog platform".
- Supervised and mentored participating teams.

## ADVISING & MENTORING

**07/2023 - Present:** Hetvi Shastri (Ph.D., UMass Amherst)

**09/2023 - 05/2024:** Khai Nguyen (MSc, UMass Amherst)

**06/2024 - 06/2025:** Riley Kim Connell (BSc., REU, UMass Amherst)

**Summer, 2024:** Akshay Prabhu (MSc., Summer Intern, UMass Amherst)

**08/2022 - 06/2023:** Xiangyu Wu (MSc, Bosch Research Center)

**09/2020 - 11/2021:** +4 BSc./MSc. students in research seminar (Technische Universität Berlin)

**09/2023 - Present:** +5 MSc. students in *Independent studies* (UMass Amherst).