



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	<b>Highly Cited Papers</b>	
	<b>MicroRCA: Root cause localization of performance issues in microservices</b>	2020
	<b>Wu L, Tordsson J, Elmroth E, Kao O</b> 2020 IEEE/IFIP Network Operations and Management Symposium (NOMS) Citations: 190+	
	<b>Fog computing applications: Taxonomy and requirements</b>	2019
	<b>Ahmed, A., Arkian, H., Battulga, D., Fahs, A. J., Farhadi, M., Giouroukis, D., ... &amp; Wu, L</b> (Contributed equally) arXiv:1907.11621 Citations: 70+	
	<b>MicroDiag: Fine-grained performance diagnosis for microservice systems</b>	2021
	<b>Wu L, Tordsson J, Bogatinovski J, Elmroth E, Kao O</b> IEEE/ACM International Workshop on Cloud Intelligence (CloudIntelligence) Citations: 50+	
	<b>Performance diagnosis in cloud microservices using deep learning</b>	2020
	<b>Wu L, Bogatinovski J, Nedelkoski S, Tordsson J, Kao O</b> Service-Oriented Computing – ICSOC 2020 Workshops: AIOPS Citations: 40+	
	<b>Other Notable Publications</b>	
	<b>Enhancing Resilience in Distributed ML Inference Pipelines for Edge Computing</b>	2024
	<b>Wu L, Hanafy WA, Souza A, Abdelzaher T, Verma G, Shenoy P</b> 2024 IEEE Military Communications Conference (MILCOM)	
	<b>Acies-OS: A Content-Centric Platform for Edge AI Twinning and Orchestration</b>	2024
	<b>Li J, Chen Y, Kimura T, Wang T, Wang R, Kara D, Hu Y, Wu L, Hanafy WA, Souza A, Shenoy P</b> 33rd International Conference on Computer Communications and Networks (ICCCN)	
	<b>SLO-Power: SLO and Power-aware Elastic Scaling for Web Services</b>	2024
	<b>Savasci M, Souza A, Wu L, Irwin D, Ali-Eldin A, Shenoy P</b> 24th IEEE International Symposium on Cluster, Cloud and Internet Computing (CCGrid)	
	<b>Failure-Resilient ML Inference at the Edge through Graceful Service Degradation</b>	2023
	<b>Hanafy WA, Wu L, Abdelzaher T, Diggavi S, Shenoy P</b> 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)

## 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

**Leveraging Fine-grain Spatial Carbon-Intensity Variations for Edge Computing** 2024  
**Wu L**, Hanafy WA, Souza A, Shenoy P

## In Preparation

**Resilient Model Inference at Resource-Constrained Edge** 2024  
**Wu L**, Hanafy WA, Souza A, Shenoy P  
 OSDI'25 / ATC'25

**Enabling Device-to-device Collaboration in Dynamic IoT Environments** 2024  
 Shastri H, **Wu L**, Shenoy P  
 Mobisys'25

## 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

	<ul style="list-style-type: none"> <li>▪ Best Bachelor Thesis (Top 1%) 2012</li> <li>▪ <b>National Scholarship</b> (Top 0.2% nationwide), The Chinese Ministry of Education 2011</li> <li>▪ 2nd Prize in the Physical and Experimental Science Technology Innovation 2011</li> <li>▪ 1st Prize in the TI Cup Electronic Design competition 2010</li> <li>▪ 1st Prize in the Physics Contest of HHU 2010</li> <li>▪ 1st Prize in the Mathematics Contest of HHU 2009</li> <li>▪ HHU Academic Excellence Scholarship, Science and Technology Innovation Scholarship 2008 – 2012</li> </ul>	
INVITED TALKS	<p><b>Automatic Performance Diagnosis and Recovery in Cloud Microservices</b> <i>Zscaler, US</i> 08/2024</p> <p><b>MicroRCA: Root Cause Localization of Performance Issues in Microservices</b> <i>Ericsson, Sweden</i> 08/2021</p>	
SERVICE TO PROFESSION AND UNIVERSITY	<p><b>Conference Organization</b></p> <p>Second International Workshop on Artificial Intelligence for IT Operations at ICSOC 2021</p> <p>The 16th IEEE International Conference on Autonomic Computing (ICAC) 2019</p> <p><b>Reviewer</b></p> <p>IEEE Transactions on Services Computing 2024</p> <p>Sustainable Computing: Informatics and Systems 2024</p> <p>Journal of Parallel and Distributed Computing 2024</p> <p>Performance Evaluation 2024</p> <p>International World Wide Web Conference 2020</p> <p><b>Hackathon Organization: Hack the fog</b> 2021</p> <ul style="list-style-type: none"> <li>▪ Organized and coordinated the event.</li> </ul> <p><b>Workshop Leadership: 15th Cloud Control Workshop</b> 2019</p> <ul style="list-style-type: none"> <li>▪ Led the discussion panel on "Anomaly detection in edge/fog computing".</li> </ul> <p><b>Outreach: UMass Turing Summer Program</b> 2024</p> <ul style="list-style-type: none"> <li>▪ Role: Organizer and Coordinator</li> <li>▪ Promoted and organized the program to attract high school participants in western Massachusetts.</li> <li>▪ Coordinated with professors and lecturers to ensure the smooth execution of the three-week program.</li> </ul>	
TEACHING	<p><b>University of Massachusetts Amherst</b> 2024</p> <p>UMass Turing Summer Program – <a href="https://none.cs.umass.edu/turing/">https://none.cs.umass.edu/turing/</a></p> <ul style="list-style-type: none"> <li>▪ Coordinator and Teacher</li> <li>▪ Syllabus, class, and tutorial preparations.</li> <li>▪ Delivered lectures on "Introduction to Python Programming".</li> <li>▪ Capstone projects coordination and supervision.</li> </ul> <p><b>Technische Universität Berlin</b> 2020-2021</p> <p>Teaching Assistant: Distributed and Operating System Seminar</p> <ul style="list-style-type: none"> <li>▪ Prepared and organized research topics for seminar students.</li> <li>▪ Guided students in developing research ideas, crafting their reports, and preparing presentations.</li> <li>▪ Managed grading and provided feedback on student work.</li> </ul> <p>Hackathon: Hack the fog – <a href="http://www.fogguru.eu/living-lab/hackthefog/">http://www.fogguru.eu/living-lab/hackthefog/</a> 2021</p> <ul style="list-style-type: none"> <li>▪ Coordinator and Teacher</li> <li>▪ Delivered lectures on "Using Node-Red for the IoT and fog platform".</li> <li>▪ Supervised and mentored participating teams.</li> </ul>	

**ADVISING &  
MENTORING**

**07/2023 - Present:** Hetvi Shastri (Ph.D.)  
**09/2023 - 05/2024:** Khai Nguyen (MSc)  
**08/2022 - 06/2023:** Xiangyu Wu (MSc, University of Science and Technology of China)  
**06/2024 - Present:** Riley Kim Connell (BSc., REU)  
**Summer, 2024:** Akshay Prabhu (MSc., Summer Intern)  
**09/2020 - 11/2021:** +4 BSc./MSc. students in research seminar (Technische Universität Berlin)  
**09/2023 - Present:** +3 MSc. students in *Independent studies*.