Bin Wang

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EDUCATION

University of Massachusetts Amherst   Amherst, MA
- *Ph.D. in Computer Science*   *Sep 2025*
- *M.S. in Computer Science*   *Feb 2021*

Beijing Jiaotong University   Beijing, China
- *M.S. in Software Engineering, with Honors*   *Apr 2015*
- *B.S. in Information Security*   *Jun 2012*

EXPERIENCE

University of Massachusetts Amherst

Research Assistant   *Sep 2017 - Sep 2025*

Advisor: Prof. Prashant Shenoy

- Designed, implemented, and evaluated principled container allocation algorithms for edge serverless computing.
- Characterized the edge performance inversion problem and developed resource provisioning and workload scheduling algorithms to mitigate it.

Adobe

Intern Research Scientist   *May 2022 - Sep 2022*

Mentor: Dr. Kanak Mahadik

- Collected and analyzed production workload traces on Adobe I/O Runtime.
- Developed predictive resource allocation algorithms for serverless platforms based on deep learning.

VMware

Research Intern   *Jun 2021 - Aug 2021*

Mentor: Dr. Mihai Budiu

- Integrated Hillview (an open-source spreadsheet for big data) with Delta Lake as its storage layer.

Microsoft Research

Research Intern   *May 2018 - Aug 2018*

Mentor: Dr. Sameh Elnikety

- Investigated the characteristics of burstable VMs (B-Series) on the Microsoft Azure cloud platform.
- Developed a recommendation engine for suggesting burstable workloads to migrate from regular VMs to burstable VMs.

Tsinghua University

Research Engineer   *Sep 2016 - Jul 2017*

Advisor: Prof. Dan Li

- Developed a high-performance network protocol stack implementing POSIX network APIs in Linux user space using Intel DPDK for accelerated packet processing.
- Deployed and evaluated the protocol stack in production at New Times Securities Co. Ltd. data center.

AutoNavi (Alibaba Group)

Backend Engineer *Apr 2015 - Sep 2016*

- Analyzed user logs and geospatial datasets using MapReduce and machine learning techniques.
- Built a point-of-interest (POI) recommendation system for the AutoNavi Maps mobile app, which reached 500,000 user visits per day within four months.
- Designed and implemented a geocoding service used by Taobao.com and Tmall.com to process shipping orders.

Beijing Jiaotong University

Research Assistant *Jun 2012 - Dec 2014*

Advisor: Prof. Xiaolin Chang

- Investigated queueing theory performance modeling of IaaS Cloud data centers and proposed Markov models for homogeneous/heterogeneous workloads.
- Formulated optimization models for virtual network embedding problems and introduced heuristics based on artificial intelligence techniques for large-scale environments.

Select Publications

1. **Bin Wang**, David Irwin, Prashant Shenoy, and Don Towsley. INVAR: Inversion Aware Resource Provisioning and Workload Scheduling for Edge Computing. In *Proceedings of the 43rd IEEE Conference on Computer Communications (INFOCOM'24)*, 2024.

2. Ahmed Ali-Eldin, **Bin Wang**, and Prashant Shenoy. The Hidden Cost of the Edge: A Performance Comparison of Edge and Cloud Latencies. In *Proceedings of Supercomputing 2021 (SC'21)*, 2021.

3. **Bin Wang**, Ahmed Ali-Eldin, and Prashant Shenoy. LaSS: Running Latency Sensitive Serverless Computations at the Edge. In *Proceedings of the 30th International Symposium on High-Performance Parallel and Distributed Computing (HPDC'21)*, 2021.

4. Ahmed Ali-Eldin, Jonathan Westin, **Bin Wang**, Prateek Sharma, and Prashant Shenoy. SpotWeb: Running Latency-sensitive Distributed Web Services on Transient Cloud Servers. In *Proceedings of the 28th ACM Symposium on High-Performance Parallel and Distributed Computing (HPDC'19)*, 2019. Best Paper Finalist.

5. Yukai Huang, Jinkun Geng, Du Lin, **Bin Wang**, Junfeng Li, Ruilin Ling, and Dan Li. LOS: A High Performance and Compatible User-level Network Operating System. In *Proceedings of the 1st Asia-Pacific Workshop on Networking (APNet'17)*, 2017.

6. Xiaolin Chang, **Bin Wang**, Jogesh K. Muppala, and Jiqiang Liu. Modeling Active Virtual Machines on IaaS Clouds Using an M/G/m/m+K Queue. *IEEE Transactions on Services Computing*, 2016.

7. **Bin Wang**, Xiaolin Chang, and Jiqiang Liu. Modeling Heterogeneous Virtual Machines on IaaS Data Centers. *IEEE Communications Letters*, 2015.

Technical Skills

- **Programming Languages:** Python, C/C++, Java, Julia, Scala, Go, Rust, Elixir, TypeScript, SQL
- **Software:** Kubernetes, OpenWhisk, Terraform, Ansible, PyTorch, Spark, Hadoop, Maple, CPLEX