Hengfeng Wei │ Nanjing University

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Research Interests

My research interests are in the area of distributed computing and formal methods. In particular, my research focus has been on the distributed data consistency problems, from the perspective of formal specification and verification. I would like to specify and verify important data consistency protocols in production.

Education

Department of Computer Science and Technology	**Nanjing University**
Ph.D. (Advisor: Professor Yu Huang and Professor Jian Lu)	*2009.09–2016.12*
Department of Computer Science and Technology	**Nanjing University**
B.Sc.	*2005.09–2009.06*

Professional Experience

Research Assistant	**Nanjing University**
	2017.01–present

Teaching Experience

Instructor	**Nanjing University**
"Problem Solving" Class	*Spring 2017 – present (once per semester)*
Teaching Assistant	**Nanjing University**
"Algorithm Design and Analysis" Class	*2011 – 2019 (once every other semester)*

Publications

On Distributed Consistency Models:

[1] Xingchen Yi, **Hengfeng Wei**, Lei Qiao, Yu Huang, and Jian Lu. "TPaxos in Paxos-Store: derivation, specification, and refinement". In: *Ruan Jian Xue Bao/Journal of Software (Accepted)* (2020).

[2] Ye Ji, **Hengfeng Wei**, Yu Huang, and Jian Lu. "Specifying and verifying CRDT protocols using TLA+". In: *Ruan Jian Xue Bao/Journal of Software (Accepted)* (2020).

[3] **Hengfeng Wei**, Yu Huang, and Jian Lu. "Specification and implementation of replicated list: the Jupiter protocol revisited". In: *22nd International Conference on Principles of Distributed Systems, OPODIS 2018, December 17-19, 2018, Hong Kong, China.* 2018, 12:1–12:16. URL: `https://doi.org/10.4230/LIPIcs.OPODIS.2018.12`.

[4] **Hengfeng Wei**, Yu Huang, and Jian Lu. "Brief Announcement: specification and implementation of replicated list: the Jupiter protocol revisited". In: *Proceedings of the 2018 ACM Symposium on Principles of Distributed Computing.* PODC '18. Egham, United Kingdom: ACM, 2018, pp. 81–83. ISBN: 978-1-4503-5795-1. URL: `http://doi.acm.org/10.1145/3212734.3212778`.

[5] **Hengfeng Wei**, Yu Huang, and Jian Lu. "Probabilistically-Atomic 2-Atomicity: enabling almost strong consistency in distributed storage systems". In: *IEEE Trans. Comput.* 66.3 (Mar. 2017), pp. 502–514. URL: `https://doi.org/10.1109/TC.2016.2601322`.

[6] **Hengfeng Wei**, Yu Huang, and Jian Lu. "Parameterized and runtime-tunable snapshot isolation in distributed transactional key-value stores". In: *2017 IEEE 36th Symposium on Reliable Distributed Systems (SRDS).* Sept. 2017, pp. 21–33.

[7] **Hengfeng Wei**, Marzio De Biasi, Yu Huang, Jiannong Cao, and Jian Lu. "Verifying Pipelined-RAM consistency over read/write traces of data replicas". In: *IEEE Trans. Parallel Distrib. Syst.* 27.5 (May 2016), pp. 1511–1523. URL: `http://dx.doi.org/10.1109/TPDS.2015.2453985`.

PhD Thesis:

[8] **Hengfeng Wei**. "Research on key technologies for the distributed data consistency problem". Chinese. unpublished thesis. PhD thesis. Nanjing University, 2016.

On Pervasive Computing:

[9] **Hengfeng Wei**, Yu Huang, Jiannong Cao, Xiaoxing Ma, and Jian Lu. "Formal specification and runtime detection of temporal properties for asynchronous context". In: *Proceedings of the 10th IEEE International Conference on Pervasive Computing and Communications (PerCom '12),* IEEE. 2012, pp. 30–38. URL: `http://ieeexplore.ieee.org/document/6199846/`.

Research Funds

Skills

Research Tools: TLA$^+$ (Familiar); Coq (Novice)

Honors and Awards (Research)

CCF Outstanding Doctoral Dissertation   **2017**
Granted by CCF (The China Computer Federation)

Honors and Awards (Teaching)

"The Excellent Courses in My Mind" (我心目中的好课程)   **2019**
Department of Computer Science and Technology, Nanjing University

Additional Information

 GitHub: `https://github.com/hengxin`

 StackExchange: `http://stackexchange.com/users/2055160/hengxin`