

魏恒峰 | 南京大学

软件学院

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个人简历

2020 年 8 月至今, 任南京大学软件学院特任副研究员。

2017 年 1 月至 2020 年 7 月, 任南京大学计算机科学与技术系 (计算机学院) 助理研究员。

研究兴趣是分布式计算与形式化方法, 特别关注从形式化规约与验证的角度研究分布式系统 (包括数据库系统) 中的数据一致性问题。

教育经历

计算机科学与技术系

博士研究生; 导师: 吕建教授、黄宇教授

南京大学

2009 年 9 月 – 2016 年 12 月

计算机科学与技术系

大学本科

南京大学

2005 年 9 月 – 2009 年 6 月

工作经历

特任副研究员

南京大学

软件学院

2020 年 8 月 – 至今

助理研究员

南京大学

计算机科学与技术系

2017 年 1 月 – 2020 年 7 月

部分论文发表情况 (* : 通讯作者)

- [1] Xue Jiang, **Hengfeng Wei***, Yu Huang, Yuxing Chen, and Anqun Pan. “A Generic Specification Framework for Weakly Consistent Replicated Data Types”. In: *IEEE Transactions on Parallel and Distributed Systems (TPDS’2025; Accepted)* xx.xx (2025), pp. xxx–xxx.
- [2] Si Liu, Long Gu, **Hengfeng Wei***, and David Basin. “Plume: Efficient and Complete Black-Box Checking of Weak Isolation Levels”. In: *Proc. ACM Program. Lang. (OOPSLA’2024)* 8.OOPSLA2 (Oct. 2024). DOI: 10.1145/3689742.

- [3] Long Gu, Si Liu, Tiancheng Xing, **Hengfeng Wei***, Yuxing Chen, and David Basin. “IsoVista: Black-box Checking Database Isolation Guarantees”. In: *Proc. VLDB Endow. (VLDB’2024; Demo Track)* 17.12 (Aug. 2024), pp. 4325–4328.
- [4] Si Liu, Luca Multazzu, **Hengfeng Wei**, and David A. Basin. “NOC-NOC: Towards Performance-optimal Distributed Transactions”. In: *Proc. ACM Manag. Data (SIGMOD’2024)* 2.1 (Mar. 2024). DOI: 10.1145/3639264.
- [5] Guangyuan Wu, Weining Cao, Yuan* Yao, **Hengfeng Wei**, Taolue Chen, and Xiaoxing Ma. “LLM Meets Bounded Model Checking: Neuro-symbolic Loop Invariant Inference”. In: *Proceedings of the 39th IEEE/ACM International Conference on Automated Software Engineering. ASE ’24*. 2024, pp. 406–417. ISBN: 9798400712487. DOI: 10.1145/3691620.3695014. URL: <https://doi.org/10.1145/3691620.3695014>.
- [6] Kaile Huang, Si Liu, Zhenge Chen, **Hengfeng Wei***, David Basin, Haixiang Li, and Anqun Pan. “Efficient black-box checking of snapshot isolation in databases”. In: *Proc. VLDB Endow. (VLDB’2023)* 16.6 (Apr. 2023), pp. 1264–1276. ISSN: 2150-8097. DOI: 10.14778/3583140.3583145.
- [7] Hongrong Ouyang, **Hengfeng Wei***, Haixiang Li, Anqun Pan, and Yu Huang. “Checking causal consistency of MongoDB”. In: *J. Comput. Sci. Technol. (JCST’2022)* 37.1 (Feb. 2022), pp. 128–146. DOI: 10.1007/s11390-021-1662-8.
- [8] Manuel Bravo, Alexey Gotsman, Borja de Régil, and **Hengfeng Wei**. “UniStore: a fault-tolerant marriage of causal and strong consistency”. In: *2021 USENIX Annual Technical Conference (USENIX ATC’2021)*. USENIX Association, July 2021, pp. 923–937.
- [9] Xiaosong Gu, **Hengfeng Wei***, Lei Qiao, and Yu Huang. “Raft with out-of-order executions”. In: *Journal of Software (软件学报 JOS’2021)* 32.6 (2021), pp. 1748–1778. DOI: 10.13328/j.cnki.jos.006248.
- [10] Lingzhi Ouyang, Yu Huang*, **Hengfeng Wei**, and Jian Lu. “Achieving probabilistic atomicity with well-bounded staleness and low read latency in distributed databases”. In: *IEEE Transactions on Parallel and Distributed Systems (TPDS’2021)* 32.4 (2021), pp. 815–829. DOI: 10.1109/TPDS.2020.3034328.
- [11] **Hengfeng Wei**, Ruize Tang, Yu Huang, and Jian Lu. “Jupiter made abstract, and then refined”. In: *Journal of Computer Science and Technology (JCST’2020)* 35.6 (2020), pp. 1343–1364. DOI: 10.1007/s11390-020-0516-0.
- [12] Xue Jiang, **Hengfeng Wei***, and Yu Huang. “A generic specification framework for weakly consistent replicated data types”. In: *International Symposium on Reliable Distributed Systems (SRDS’2020)*. 2020, pp. 143–154. DOI: 10.1109/SRDS51746.2020.00022.
- [13] Kaile Huang, Yu Huang, and **Hengfeng Wei**. “Fine-grained analysis on fast implementations of distributed multi-writer atomic registers”. In: *Proceedings of the 39th Symposium on Principles of Distributed Computing (PODC’2020)*. Association for Computing Machinery, 2020, pp. 200–209. DOI: 10.1145/3382734.3405698.

- [14] Xingchen Yi, **Hengfeng Wei***, Lei Qiao, Yu Huang, and Jian Lu. “TPaxos in PaxosStore: derivation, specification, and refinement”. In: *Journal of Software (软件学报 JOS’2020)* 31.8 (2020), pp. 2336–2361. DOI: 10.13328/j.cnki.jos.005964.
- [15] Ye Ji, **Hengfeng Wei***, Yu Huang, and Jian Lu. “Specifying and verifying CRDT protocols using TLA⁺”. In: *Journal of Software (软件学报 JOS’2020)* 31.5 (2020), pp. 1332–1352. DOI: 10.13328/j.cnki.jos.005956.
- [16] **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)*. 2018, 12:1–12:16. DOI: 10.4230/LIPIcs.OPODIS.2018.12.
- [17] **Hengfeng Wei**, Yu Huang, and Jian Lu. “Probabilistically-Atomic 2-Atomicity: enabling almost strong consistency in distributed storage systems”. In: *IEEE Trans. Comput. (TC’2017)* 66.3 (Mar. 2017), pp. 502–514. DOI: 10.1109/TC.2016.2601322.
- [18] **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’2017)*. Sept. 2017, pp. 21–33. DOI: 10.1109/SRDS.2017.11.
- [19] **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. (TPDS’2016)* 27.5 (May 2016), pp. 1511–1523. DOI: 10.1109/TPDS.2015.2453985.
- [20] **Hengfeng Wei**. “分布数据一致性技术研究 (Research on key technologies for the distributed data consistency problem)”. Chinese. unpublished thesis. PhD thesis. Nanjing University, 2016.
- [21] **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’2012)*, 2012, pp. 30–38.

教学情况

C 语言程序设计基础

软件学院

2021 年秋季 – 至今 (每年一次)

离散数学

软件学院

2021 年春季

编译原理

软件学院

2020 年秋季 – 至今 (每年一次)

问题求解

计算机科学与技术系

2017 年春季 – 2020 年春季 (每学期一次)

算法设计与分析
助教

计算机科学与技术系
2011 年 – 2019 年 (每年一次)

科研项目

国家自然科学基金; 面上项目 批准号: 62472214	2025 年 1 月 – 2028 年 12 月
江苏省基础研究计划自然科学基金; 面上项目 项目编号: BK20242014	2024 年 9 月 – 2027 年 8 月
国家自然科学基金; 青年科学基金项目 批准号: 61702253	2018 年 1 月 – 2020 年 12 月
CCF-腾讯犀牛鸟基金 批准号: RAGR20200124	2020 年 10 月 – 2021 年 12 月
CCF-腾讯犀牛鸟基金; 滚动支持 批准号: RAGR20200124	2021 年 12 月 – 2022 年 12 月

奖项与荣誉 (科研)

CCF 优秀博士学位论文 中国计算机学会	2017
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奖项与荣誉 (教学)

我心目中的好课程 南京大学; 计算机科学与技术系	2019
全国总决赛三等奖、优胜奖; 优秀指导教师 全国大学生计算机系统能力大赛-编译系统设计赛	2024