

# Ruan Pingcheng (PhD)

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## Personal Statement

I am currently working as a Backend Engineer (Infrastructure) in ByteDance, Singapore. My previous research focuses on blockchains, and my interest spans from distributed systems, databases to all other large-scale data processing platforms. During my PhD study, I am the award winner of VLDB 2019 Best Paper Award, SIGMOD 2020 Research Highlight Award and SIGMOD 2022 Honorable Mention of Jim Gray Doctoral Dissertation Award. During my Bachelor study, I am the only student in the Class of 2016 placed in the Dean's List (top 5%) throughout academic years.

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## Education

**National University of Singapore (NUS), Singapore** *Aug 2016~Mar 2022*

*Doctor of Philosophy (Computer Science)*

- Supervised by Distinguished Prof OOI Beng Chin in School of Computing
- Thesis: *Blockchains: Novel Data Systems and Beyond* (**Honorable Mention of ACM SIGMOD Jim Gray Dissertation Award**)

**Nanyang Technological University (NTU), Singapore** *Aug 2012~Aug 2016*

*Bachelor of Engineering (Computer Science)*

- Graduated with **First Class Honors** from School of Computer Science and Engineering (SCSE)
- Specialized in High Performance Computing, Information System
- Obtained Grade Point Average: 4.86/5.00 (3<sup>rd</sup> in the cohort)

*SM2 Bridging Program* *July 2011~Aug 2012*

- Undertook a one-year pre-college program with English and Science courses, exclusively for SM2 scholars

**Nanjing Foreign Language School, Jiangsu, China** *Sept 2006~Jun 2011*

*Middle School and High School*

- Maintained top 5 percent on academic performance

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## Career

**ByteDance, Singapore**

*Software Engineer (Infrastructure)* *Mar 2022~Present*

- Build the next-generation, industry-scale, highly available data systems

**School of Computing (SoC), National University of Singapore**

*Research Fellow* *Sept 2021~Mar 2022*

*Research Assistant* *Aug 2016~Sept 2021*

- Supervised by Distinguished Prof OOI Beng Chin
- Coordinate and develop all blockchain-related systems in our team

**Institute of High Performance Computing, Agency for Science, Technology and Research (A\*STAR), Singapore**

*Student Intern*

*Jan 2015~May 2015*

- Supervised by Dr Wang Zhaoxia

## Publications

- **[MONOGRAPH] Pingcheng Ruan**, Tien Tuan Anh Dinh, Dumitrel Loghin, Meihui Zhang, Gang Chen, *Blockchains: Decentralized and Verifiable Data Systems Springer*
- **P. Ruan**, Y.Kanza, B. C. Ooi, D. Srivastava, *LedgerView: Access-Control Views on Hyperledger Fabric. ACM SIGMOD 2022*
- Z. Ge, D. Loghin, B. C. Ooi, **P. Ruan**, T. Wang: *Hybrid Blockchain Database Systems: Design and Performance. VLDB 2022*
- **P. Ruan**, A. Dinh, D. Loghin, M. Zhang, G. Chen, Q. Lin, B. C. Ooi: *Blockchains and Distributed Databases: Dichotomy and Fusion. ACM SIGMOD 2021*
- **P. Ruan**, D. Loghin, Q.-T. ta, M Zhang, G. Chen, B. C. Ooi: *A Transactional Perspective on Execute-Order-Validate Blockchains. ACM SIGMOD 2020*
- **P. Ruan**, A. Dinh, Q. Lin, M. Zhang, G. Chen, B. C. Ooi: *Revealing Every Story of Data in Blockchain Systems. ACM SIGMOD 2020 RESEARCH HIGHLIGHT AWARD*
- Q. Lin, K. Yang, A. Dinh, Q. Cai, G. Chen, B. C. Ooi, **P. Ruan**, S. Wang, Z. Xie, M. Zhang, O. Vandans: *ForkBase: Immutable, Tamper-evident Storage Substrate for Branchable Applications. IEEE ICDE 2020 Demo*
- **P. Ruan**, G. Chen, A. Dinh, Q. Lin, B.C. Ooi, M. Zhang: *FineGrained, Secure and Efficient Data Provenance on Blockchain Systems. VLDB 2019 BEST PAPER* (the extended version published in **The VLDB Journal 2021**)
- S. Wang, T. T. A. Dinh, Q. Lin, Z. Xie, M. Zhang, Q. Cai, G. Chen, B.C. Ooi, **P. Ruan** : *ForkBase: An Efficient Storage Engine for Blockchain and Forkable Applications. VLDB 2018*
- A. Dinh, J. Wang, S. Wang, G. Chen, W.-N. Chin, Q. Lin, B. C. Ooi, **P. Ruan**, K.-L. Tan, Z. Xie, H. Zhang, and M. Zhang: *UStore: a distributed storage with rich semantics.*
- **P. Ruan**, G. Chen, A. Dinh, Q. Lin, D. Loghin, B. C. Ooi, M. Zhang: *Blockchains and Distributed Databases: A Twin Study*

## Awards

- The Valedictorian, SoC NUS, 2022
- IMDA Excellence Prize, SoC NUS, 2022
- Honorable Mention of ACM SIGMOD Jim Gray Dissertation Award, 2022
- ACM SIGMOD Research Highlight Award, 2020
- Dean's Graduate Research Excellence Award, SoC NUS, 2020
- VLDB Best Paper Award, 2019
- Graduate Research Excellence Award, SoC NUS, 2019
- Hewlett-Packard Gold Medal, SCSE NTU, 2016
- Dean's List, SCSE NTU, 2013-2016
- 15th SM2 Scholarship, Ministry of Education, Singapore, 2012