Gengrui Zhang

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Homepage: http://gengruizhang.github.io

EDUCATION

University of Toronto — Toronto, ON, Canada
Ph.D. student in Electrical & Computer Engineering — 2019 - now
Advisor: Prof. Hans-Arno Jacobsen (*IEEE Fellow*)

University of Chineses Academy of Sciences — Beijing, China
M.S. in Computer Application Technology — 2015 - 2018
Advisor: Prof. Cheng-Zhong Xu (*IEEE Fellow*)

Hunan University — Changsha, HN, China
B.S. in Computer Science and Technology (LIDA Talented Program) — 2011 - 2015
Advisor: Prof. Ken-Li Li

SELECTED PUBLICATIONS

Publications in refereed proceedings:

- Gengrui Zhang, Fei Pan, Michael Dang'ana, Yunhao Mao, Shashank Motepalli, Shiquan Zhang, and Hans-Arno Jacobsen. Reaching consensus in the Byzantine empire: A comprehensive review of BFT consensus algorithms. *arXiv preprint arXiv:2204.03181*, 2022

- Gengrui Zhang and Hans-Arno Jacobsen. Escape to precaution against leader failures. In *2022 IEEE 42nd International Conference on Distributed Computing Systems*, ICDCS '22. IEEE, 2022

- Gengrui Zhang and Hans-Arno Jacobsen. Prosecutor: An efficient BFT consensus algorithm with behavior-aware penalization against byzantine attacks. In *Proceedings of the 22nd International Middleware Conference*, Middleware '21, page 52–63. ACM, 2021

- James Meijers, Edward Au, Yuxi Cai, Hans-Arno Jacobsen, Shashank Motepalli, Robert Sun, Andreas Veneris, Gengrui Zhang, and Shiquan Zhang. Blockchain for V2X: A taxonomy of design use cases and system requirements. In *2021 3rd Conference on Blockchain Research & Applications for Innovative Networks and Services (BRAINS)*, pages 113–120. IEEE, 2021 (Author names in alphabetical order except the first author)

- Gengrui Zhang and Chengzhong Xu. An efficient consensus protocol for real-time permissioned blockchains under non-Byzantine conditions. In *International Conference on Green, Pervasive, and Cloud Computing*, pages 298–311. Springer, 2018 (Best Paper Award)

PATENT

- **Gengrui Zhang**, Tongxin Bai, Chengzhong Xu. A kind of Second-hand Vehicle Transaction method, apparatus and system based on block chain technology. CN 106897887 A[P]. 2017. (In Chinese)

INDUSTRY EXPERIENCE

Tencent Technology Co. Ltd   Shenzhen, GD, China
System Development Engineer, Platform & Content Group (PCG)   2018

AWARDS

Best Paper Award

- **The 13th International Conference on Green, Pervasive and Cloud Computing (2018)**

Outstanding Student, University of Chinese Academy of Sciences (2017)

Individual Scholarship, Hunan University (2012, 2103, 2014)

Asia SuperComputer Challenge

- **Prize of Excellence** (2014)
- **Proud Team Award** (2013)

INVITED TALKS

"Fairness in Byzantine Consensus"

- Macau University, Macau SAR, China, 2021.04

"Scaling Byzantine Consensus"

- Blockchain @ACM SACMAT, Toronto, Canada, 2019.06

"Optimizing Consensus Algorithms for Permissioned Blockchains"

- Blockchain Week, Toronto, Canada, 2019.04

"Untangling Blockchain Consensus Protocols from Blockchain 1.0 to 2.0"

- Tencent, Shenzhen, China, 2018.04

"High-level Comparsions between Permissionless and Permissioned Blockchains"

- SIAT-CAS, Shenzhen, China, 2017.11

TEACHING EXPERIENCE

ECE419 Distributed Systems (*Winter*)   **2021**
    Head TA, University of Toronto

ECE1762 Algorithms and Data Structures (*Winter*)   **2021**
    TA, University of Toronto

CSC263 Data Structures and Analysis (*Winter*)   **2021**
    TA, University of Toronto

ECE345 Algorithms and Data Structures (*Fall*)   **2020**
    TA, University of Toronto

ECE244 Programming Fundamentals (*Fall*)   2020
    TA, University of Toronto

ECE419 Distributed Systems (*Winter*)   2020
    Head TA, University of Toronto

ECE244 Programming Fundamentals (*Fall*)   2019
    TA, University of Toronto

ECE345 Algorithms and Data Structures (*Fall*)   2019
    TA, University of Toronto

ECE345 Algorithms and Data Structures (*Winter*)   2019
    TA, University of Toronto

ECE419 Distributed Systems (*Winter*)   2019
    TA, University of Toronto

SUPERVISION

Co-supervised design project:

- AI-Enabled Traffic Camera Feed Transcription   2021
  Students: Andrew Lau, Chunqiu (Steven) Xia, Robert Dermarkar

- Consensus Protocol Visualization Engine   2020
  Github: https://github.com/ConsensusVisualization/protocols
  Students: Robert Fairley, Yannan (Walter) Lin, Abhishek Patil, and Daniel Hu

- Consensus Protocol Visualization Engine   2020
  Students: Jinzhuo (Sarah) Tang, Xian (Shirley) Zhou, Yichen Wang, Yuchen Wang

REVIEW AND SERVICE

Conferences:

- ACM/IFIP International Middleware Conference (Middleware)   **2021**

- ACM/IFIP International Middleware Conference (Middleware)   **2020**

- ACM/IFIP International Middleware Conference (Middleware)   **2019**

- International Conference on Distributed Computing Systems (ICDCS)   **2019**

- IEEE International Conference on Blockchain (IEEE Blockchain)   **2019**

Journals:

- Journal of Parallel and Distributed Computing (JDBC)   **2018**