Zhenliang Lu

PERSONAL INFORMATION

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EDUCATION

- Ph.D. in Computer Sciences — Jul 2021 – Aug 2023
  School of Computer Sciences
  The University of Sydney, Australia
  Advised by Dr. Qiang Tang
- Ph.D. Candidate in Computer Sciences — Sep 2017 – Jan 2021
  Department of Computer Sciences
  New Jersey Institute of Technology, United States
  Advised by Dr. Qiang Tang
- M.S. in Applied Mathematics — Sep 2014 – Jul 2017
  School of Mathematics
  Hefei University of Technology, P.R.C
  Advised by Dr. Shixin Zhu
- B.S. in Information and Computing Science — Sep 2010 – Jul 2014
  School of Mathematics
  Hefei University of Technology, P.R.C

RESEARCH INTERESTS

- Blockchain, Consensus, Distributed Computing/Cryptography
  Byzantine Storage, Order Fairness

WORK EXPERIENCE

- Research Officer, The University of Sydney, Australia
  Hosted by Dr. Qiang Tang and Dr. Vincent Gramoli — Oct 2023 – Present

HONORS AND AWARDS

- Faculty of Engineering Career Advancement Award, USYD — 2023
- Provost Doctoral Fellowship, NJIT — 2017, 2018
- Second Class Scholarship of Postgraduate, HFUT — 2015, 2016
- First Class Scholarship of Postgraduate, HFUT — 2014
- Third Class Scholarship of Undergraduate, HFUT — 2011, 2012 and 2013

RESEARCH FUNDINGS

- Ethereum research grant, co-investigator

MENTORING EXPERIENCE

- Xinrui Zhang (MPhil student, USYD)
- Luu Y Nhi Nguyen (Honours student, USYD, now PhD student at UNSW)
- Yonglin Lu (Master student, USYD)
- Yuchen Ye (Honours student, USYD, now PhD student at USYD)
- Jiang Wu (Honours student, USYD)

TEACHING ASSISTANT

- Data Structures and Algorithms — Summer/Spring 2019, Fall/Summer/Spring 2018
- Introduction to Cybersecurity — Spring 2019
- Cryptography and Internet Security — Spring 2018
- Data Mining — Fall 2017

PUBLICATIONS ***Authorship is in alphabetical order***

[1] Dragon: Decentralization at the cost of Representation after Arbitrary Grouping and Its Applications to Sub-cubic DKG and Interactive Consistency
Hanwen Feng, **Zhenliang Lu**, Qiang Tang
PODC 2024 *– 43rd ACM Symposium on Principles of Distributed Computing*
Core rank A^*

[2] AOAB: Optimal and Fair Ordering of Financial Transactions
Vincent Gramoli, **Zhenliang Lu**, Qiang Tang, Pouriya Zarbafian
DSN 2024 *– 54th Annual IEEE/IFIP International Conference on Dependable Systems and Networks*
Core rank A

[3] Bolt-Dumbo Transformer: Asynchronous Consensus As Fast As the Pipelined BFT
Yuan Lu, **Zhenliang Lu**, Qiang Tang
CCS 2022 *– 29th ACM Conference of Computer and Communication Security*
Core rank A^*

[4] Dumbo-NG: Fast Asynchronous BFT Consensus with Throughput-Oblivious Latency
Yingzi Gao, Yuan Lu, **Zhenliang Lu**, Qiang Tang, Jing Xu, Zhenfeng Zhang
CCS 2022 *– 29th ACM Conference of Computer and Communication Security*
Core rank A^*

[5] Speeding Dumbo: Pushing Asynchronous BFT Closer to Practice
Bingyong Guo, Yuan Lu, **Zhenliang Lu**, Qiang Tang, Jing Xu, Zhenfeng Zhang
NDSS 2022 *– The Network and Distributed System Security Symposium*
Core rank A^*

[6] Efficient Asynchronous Byzantine Agreement without Private Setups
Yingzi Gao, Yuan Lu, **Zhenliang Lu**, Qiang Tang, Jing Xu, Zhenfeng Zhang
ICDCS 2022 *– 42nd IEEE International Conference on Distributed Computing Systems*
Core rank A

[7] Dumbo: Faster Asynchronous BFT Protocols
Bingyong Guo, **Zhenliang Lu**, Qiang Tang, Jing Xu, Zhenfeng Zhang
CCS 2020 *– 27th ACM Conference of Computer and Communication Security*
Core rank A^*

[8] Dumbo-MVBA: Optimal Multi-Valued Validated Asynchronous Byzantine Agreement, Revisited
Yuan Lu, **Zhenliang Lu**, Qiang Tang, Guiling Wang
PODC 2020 *– 39th ACM Symposium on Principles of Distributed Computing*
Core rank A^*

MANUSCRIPTS ***Authorship is in alphabetical order***

[9] Optimal Asynchronous Byzantine Consensus with Fair Separability
Vincent Gramoli, **Zhenliang Lu**, Qiang Tang, Pouriya Zarbafian

[10] Resilience to Chain-Quality Attacks in Fair Separability
Vincent Gramoli, **Zhenliang Lu**, Qiang Tang, Pouriya Zarbafian

[11] Making Hash-based MVBA Great Again
Hanwen Feng, **Zhenliang Lu**, Tiancheng Mai, Qiang Tang

[12] Near-Optimal Adaptively Secure Asynchronous Common Subset in Minicrypt
Hanwen Feng, **Zhenliang Lu**, Qiang Tang

[13] Jumbo: Asynchronous BFT Consensus Made Truely Scalable
Hao Cheng, Yuan Lu, **Zhenliang Lu**, Qiang Tang, Yuxuan Zhang, Zhenfeng Zhang

[14] Turritopsis: Asynchronous BFT Made Long-Lived with Dynamic Participation
Yingzi Gao, Yuan Lu, **Zhenliang Lu**, Qiang Tang, Yuyi Wang, Jing Xu

[15] Optimistic Asynchronous Dynamic-committee Proactive Secret Sharing
Bin Hu, Jianwei Liu, **Zhenliang Lu**, Qiang Tang, Zhuolun Xiang, Zongyang Zhang

[16] Asynchronous Dynamic-committee Proactive Information Dispersal and Its Applications
Alan Fekete, **Zhenliang Lu**, Qiang Tang

[17] Lachesis: Analysis, Concerns, and Solutions
Zhenliang Lu, Qiang Tang, Yuchen Ye

[18] Attacks against Proof-of-Stake Ethereum 2.0 in WAN
Zhenliang Lu, Qiang Tang, Xinrui Zhang

PATENTS

1. Systems and methods for establishing consensus in distributed communications
   Xinlei Zhai, Qiang Tang, **Zhenliang Lu**, Jing Xu, Zhenfeng Zhang, Bingyong Guo
   PCT Patent *(International publication number: WO 2021/226846 A1)*
   Part of the research results of the JACOBI Blockchain Lab, sponsored by JD.com
2. Communication systems and methods for validation of a transaction via consensus in a distributed network environment
   Xinlei Zhai, Qiang Tang, **Zhenliang Lu**, Jing Xu, Zhenfeng Zhang, Bingyong Guo
   PCT Patent *(International publication number: WO 2021/226843 A1)*
   Part of the research results of the JACOBI Blockchain Lab, sponsored by JD.com
3. Permissioned asynchronous blockchian consensus with broadcasts running off consensus
   Hao Cheng, Yingzi Gao, Yuan Lu, **Zhenliang Lu**, Qiang Tang, Jing Xu, Zhenfeng Zhang
   PCT Patent *(International publication number: WO 2023/174142 A1)*

PROFESSIONAL ACTIVITIES

Publicity and Social Media Chair at EAI BlockTEA 2022
Journals Reviewer for:
IEEE/ACM Transactions on Networking
IEEE Transactions on Dependable and Secure Computing
ACM Transactions on Computer Systems
Blockchain: Research and Applications
Theoretical Computer Science
Conferences Reviewer for:
Crypto 2024, Eurocrypt 2023, NDSS 2024/2023, USENIX Security 2024/2022, S&P 2023, CCS 2024/2022, AFT 2024, Asiacrypt 2022/2021/2020, Asiaccs 2022/2021, PKC 2021, ICDCS 2021, ICBC 2021, TrustCom 2020, CCSW 2020, ACISP 2019 etc.

MEDIA COVERAGE

- Dumbo protocols, together with classical ones including PBFT and HotStuff, are included in the reading list of consensus protocols of a16zcrypto.

- Dumbo protocols were reported widely by media including CoinDesk, and leading Chinese media including Guangming Daily (光明日报), People's Daily Overseas Edition (人民日报海外版), China News Service (中国新闻网), ScienceNet (科学网), Xinhua News Agency (新华社), XINHUANET (新华网) and others.