

# RUNCHAO HAN

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## EMPLOYMENT

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<b>BabylonChain Inc.</b> <i>Senior Research Engineer</i>	July 2022 - Now <i>Melbourne, Australia</i>
<b>Bytom Blockchain</b> <i>Intern Blockchain Engineer</i>	September 2018 - January 2019 <i>Hangzhou, China</i>
<b>CNIC, Chinese Academy of Sciences</b> <i>Intern Researcher</i>	June 2017 - July 2017 <i>Beijing, China</i>

## EDUCATION

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<b>Monash University and CSIRO's Data61</b> Doctor of Philosophy Department of Software Systems and Cybersecurity	<i>February 2019 - September 2022</i> Supervisors: Jiangshan Yu, Joseph Liu and Shiping Chen
<b>The University of Manchester</b> MSc Advanced Computer Science (with Distinction) School of Computer Science	<i>August 2017 - September 2018</i> Supervisor: Christos Kotselidis Overall Percentage: 82/100
<b>Beijing University of Posts and Telecommunications</b> BSc E-Commerce Engineering with Law	<i>September 2013 - July 2017</i> Overall Percentage: 83/100

## PUBLICATIONS

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Full publication list can be found at [DBLP](#) and [Google Scholar](#). All of my papers are available online, and most of them are hosted on [IACR ePrint](#).

- HY23 Fair Delivery of Decentralised Randomness Beacon. Runchao Han, Jiangshan Yu. The 27th International Conference on Financial Cryptography and Data Security ([FC'23](#)).
- [HYZ22](#) Analysing and Improving Shard Allocation Protocols for Sharded Blockchains. Runchao Han, Jiangshan Yu, Ren Zhang. The 4th ACM Conference on Advances in Financial Technologies ([AFT'22](#)).
- HHD+22 Reputation-based state machine replication. Muhong Huang, Runchao Han, Zhiqiang Du, Yanfang Fu, and Liangxin Liu. The 21th IEEE International Symposium on Network Computing and Applications ([NCA'22](#)).
- [NGH+22](#) Crystal: Enhancing Blockchain Mining Transparency with Quorum Certificate. Jianyu Niu, Fangyu Gai, Runchao Han, Ren Zhang, Yinqian Zhang, Chen Feng. IEEE Transactions on Dependable and Secure Computing ([TDSC'22](#))
- [LHY20](#) General Congestion Attack on HTLC-Based Payment Channel Networks. Zhichun Lu, Runchao Han, Jiangshan Yu. The 3rd International Conference on Blockchain Economics, Security and Protocols ([Tokenomics'21](#)).
- [HSY+20](#) Fact and Fiction: Challenging the honest majority assumption of permissionless blockchains. Runchao Han, Zhimei Sui, Jiangshan Yu, Joseph Liu, Shiping Chen. The 16th ACM ASIA Conference on Computer and Communications Security ([AsiaCCS'21](#)).

- [HYL20a](#) VRF-based mining: Simple Non-outsourceable Cryptocurrency Mining. Runchao Han, Haoyu Lin, Jiangshan Yu. The 4th International Workshop on Cryptocurrencies and Blockchain Technology, in conjunction with the 25th European Symposium on Research in Computer Security ([CBT@ESORICS'20](#)).
- [HLY19](#) On the optionality and fairness of Atomic Swaps. Runchao Han, Haoyu Lin, Jiangshan Yu. The 1st ACM Conference on Advances in Financial Technologies ([AFT'19](#)).
- [HFK19](#) Demystifying Crypto Mining: Performance Analysis and Optimizations of PoW Algorithms. Runchao Han, Nikolaos Foutris, Christos Kotselidis. IEEE International Symposium on Performance Analysis of Systems and Software ([ISPASS'19](#), [best paper nominee](#)).
- [HSGX19](#) On the performance of distributed ledgers for internet of things. Runchao Han, Gary Shapiro, Vincent Gramoli, Xiwei Xu. Internet of Things; Engineering Cyber Physical Human Systems ([Elsevier IoT'19](#)).
- [HYZL18](#) Evaluating CryptoNote-Style Blockchains. Runchao Han, Jiangshan Yu, Joseph Liu, Peng Zhang. International Conference on Information Security and Cryptology ([Inscrypt'18](#)).
- [HGX18](#) Evaluating Blockchains for IoT. Runchao Han, Vincent Gramoli, Xiwei Xu. The 9th IFIP International Conference on New Technologies, Mobility and Security ([NTMS'18](#)).

## PREPRINTS

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- [HYL+20](#) On the Security and Performance of Blockchain Sharding. Runchao Han, Jiangshan Yu, Haoyu Lin, Shiping Chen, Paulo Esteves-Veríssimo. **In submission.**
- [HYZL20](#) RANDCHAIN: Decentralised Randomness Beacon from Sequential Proof-of-Work. Runchao Han, Jiangshan Yu, Haoyu Lin. **In submission.**

## TALKS

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- Analysing and Improving Shard Allocation Protocols for Sharded Blockchains. AFT conference talk. September, 2022.
- Fact and Fiction: Challenging the honest majority assumption of permissionless blockchains. AsiaCCS conference talk. June, 2021.
- RandChain: Decentralised Randomness Beacon from Sequential Proof-of-Work.
  - Seminar at Nervos Foundation. June, 2022.
  - Seminar at Decrypto. November, 2020.
- VRF-Based Mining: Simple Non-Outsourceable Cryptocurrency Mining. CBT@ESORICS workshop. September, 2020.
- Demystifying Crypto-Mining: Analysis and Optimizations of Memory-Hard PoW Algorithms. Seminar at Huawei Noah's Ark Lab. July, 2020.
- On the optionality and fairness of Atomic Swaps.
  - Peep an EIP #23: EIP-2266. February, 2021.
  - AFT conference at Zurich. October, 2019.

## TEACHING

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- Teaching associate for FIT 5214 Blockchain, Monash University. 2019 Fall.

## PROFESSIONAL SERVICES

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## Program committee

- 2023: VeriDBSys@SIGMOD
- 2022: ICA3PP

## (External) reviewer

- 2023: DSN
- 2022: EuroS&P, IEEE Blockchain, Journal of Network and Systems Management, ACM DLT Journal, IEEE Transaction of Service Computing
- 2021: DSN, ICBC, IEEE Blockchain, NSS, MSN, TrustCom, IEEE Trans. of Service Computing
- 2020: AFT, ICDCS, SRDS, ACNS, AsiaCCS, TrustCom, ACISP, ICBC, TDSC, The Computer Journal, IEEE IoT Journal, IEEE Software Journal, IEEE Trans. of Service Computing
- 2019: Indocrypt, TrustCom, Future Generation Computing System

## ADDITIONAL INFORMATION

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<b>Membership</b>	ACM (student), IEEE (student), USENIX, IACR
<b>LinkedIn</b>	runchao-han
<b>Github</b>	SebastianElvis
<b>Wechat</b>	elvisage
<b>References</b>	Available upon request