

# ZICUN CONG

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🐙 [github.com/Minzc](https://github.com/Minzc)

## Education

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### Simon Fraser University

Jan. 2017 – July 2022

*Ph.D. in Computing Science, GPA: 4.0/4.33, Supervisor: Prof. Jian Pei*

Thesis: “Towards Trustworthy Data Analytics: Algorithmic Tools for Interpretability and Fairness”

### Simon Fraser University

Sep. 2014 – Aug. 2016

*MSc in Computing Science, GPA: 4.13/4.33, Supervisor: Prof. Jian Pei*

### Sun Yat-sen University

Sep. 2009 – June 2013

*B.E. in Software Engineer, GPA: 3.7/4.0, Supervisor: Prof. Yabo Xu*

## Work Experience

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### Fortinet Inc.

Sep. 2016 – Present

*Staff Software Engineer*

*Burnaby, Canada*

- Apply distributed computing frameworks, including Spark and MapReduce, to ETL billions of network traffic and malware behaviour logs
- Collaborate with cyberthreat experts to perform feature engineering for malicious traffic identification
- Build and deliver a system to automatically detect command and control connections from millions of network traffic logs by leveraging the state-of-the-art deep neural networks
- Implement and deliver a system to discover malicious domains through applying graph neural networks to analyze passive DNS data
- Develop a service to automatically extract open source threat intelligence from unstructured text

### LinkedIn.

May. 2021 – Dec. 2021

*Machine Learning Engineer Intern*

*Remote*

- Implement state-of-the-art bias mitigation approaches to debias graph neural networks
- Research the problem of unfairness in graph neural networks and proposed a sampling framework to improve fairness in graph neural networks with reinforcement learning
- Prepare and submit a research paper

### Datastory.

July 2013 – Sep. 2014

*Software Engineer*

*Guangzhou, China*

- Developed distributed computation infrastructures for large-scale data acquisition, storage, and analysis
- Apply MapReduce and Storm to do batch and realtime analysis on billions of social network accounts

## Publications

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- **Zicun Cong**, Baoxu Shi, Shan Li, Jaewon Yang, Jian Pei, Qi He. “FairSample: Training Fair and Accurate Graph Neural Networks Efficiently.” Under review.
- Xuan Luo, Jian Pei, **Zicun Cong**, Cheng Xu. “On Shapley Value in Data Assemblage Under Independent Utility.” Proc. VLDB Endow. 15, 11 (2022), 2761–2773.
- **Zicun Cong**, Xuan Luo, Jian Pei, Feida Zhu, Yong Zhang. “Data Pricing in Machine Learning Pipelines.” Knowledge and Information Systems (KAIS), 2022.
- Jian Pei, Feida Zhu, **Zicun Cong**, Xuan Luo, Huiwen Liu, Xin Mu. “Data Pricing and Data Asset Governance in the AI Era.” In Proceedings of the 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining (KDD '21). Association for Computing Machinery, New York, NY, USA, 4058–4059.
- **Zicun Cong**, Lingyang Chu, Yu Yang, Jian Pei. “Comprehensible counterfactual explanation on Kolmogorov-Smirnov test.” Proc. VLDB Endow. 14, 9 (May 2021), 1583–1596.
- **Zicun Cong**, Lingyang Chu, Lanjun Wang, Xia Hu, and Jian Pei. “Exact and Consistent Interpretation of Piecewise Linear Models Hidden behind APIs: A Closed Form Solution.” In 2020 IEEE 36th International Conference on Data Engineering (ICDE), pp. 613-624. IEEE, 2020.

## Technical Skills

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**Artificial Intelligence:** Deep Learning, Machine Learning, Data Mining

**Languages and Frameworks:** Python, Java, C++, SQL, PyTorch, TensorFlow, Sklearn

**Cloud and Distributed Computing:** Hadoop, Spark, HBase, Phoenix db, Redis, MySQL, Zookeeper, Apache Storm