# Yanyan Dong

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https://scholar.google.com/citations?hl=en&user=Q040BxsAAAAJ
https://yan-yandong.github.io/

## Academic Experience

2024.12-present
- **Postdoctoral Fellow, The Chinese University of Hong Kong, Shenzhen** in School of Science and Engineering
- **Advisor:** Shenghao Yang
- **Research Area:** multi-armed bandits, finite-length codes

2022.12-2023.12
- **Research Fellow, National University of Singapore** (Singapore) in Electrical and Computer Engineering
- **Advisor:** Vincent Y. F. Tan
- **Research Area:** multi-armed bandits, best arm identification

## Education

2017.8 – 2022.8
- **Ph.D student, The Chinese University of Hong Kong, Shenzhen** (China) in Computer and Information Engineering
- **Advisor:** Shenghao Yang
- **Research Area:** network coding, finite-length codes, network optimizaiton

2013.8 – 2017.7
- **B.Sc., Jilin University** (China) in Mathematics and Applied Mathematics (Operations Research and Control)
- **Class rank:** 1/48 in Mathematics and Applied Mathematics

## Research Interests

- My research interests lie in **information theory** and **online learning**. Broadly, I am interested in using mathematical tools—particularly information-theoretic and statistical methods—to address fundamental problems in machine learning. I also work on the design of finite-length codes with strong performance guarantees and aim to understand their fundamental limits.

## Grants & Fellowships

- Principal Investigator, Young Scientists Fund.
  Project: Optimal Finite-Length Codes in Typical Channels with Maximum Likelihood Decoding.

## Research Publications

### Working Papers

1. **Yanyan Dong**, & Tan, V. Y. (n.d.). *Best Arm Identification with Delayed Feedback*.

### Journal Articles

1. **Yanyan Dong** and Vincent Y. F. Tan. (2024). Adversarial Combinatorial Bandits With Switching Costs. *IEEE Transactions on Information Theory (TIT)*, *70*, 5213–5227.
   https://doi.org/10.1109/TIT.2024.3384033

2. **Yanyan Dong** and Shenghao Yang. (2024). On Optimal Finite-length Block Codes of Size Four for Binary Symmetric Channels. *IEEE Transactions on Information Theory (TIT)*, 1–1. https://doi.org/10.1109/TIT.2024.3504823

3. **Yanyan Dong**, Shenghao Yang, Jie Wang and Cheng Fan. (2024). Throughput and Latency Analysis for Line Networks With Outage Links. *IEEE Journal on Selected Areas in Information Theory(JSAIT), 5*, 464–477. https://doi.org/10.1109/JSAIT.2024.3419054

4. **Yanyan Dong**, Sheng Jin, Yanzuo Chen, Shenghao Yang and Hoover H. F. Yin. (2021). Utility Maximization for Multihop Wireless Networks Employing BATS Codes. *IEEE Journal on Selected Areas in Information Theory (JSAIT), 2*, 1120–1134. https://doi.org/10.1109/JSAIT.2021.3126426

5. Jie Wang, Shenghao Yang, **Yanyan Dong** and Yiheng Zhang. (2024). On Achievable Rates of Line Networks With Generalized Batched Network Coding. *IEEE Journal on Selected Areas in Communications (JSAC), 42*, 1316–1328. https://doi.org/10.1109/JSAC.2024.3365900

### In Conference Proceedings

1. Li, M., **Yanyan Dong**, & Fu, X. (2025). Synchronous BFT Under an Information Theoretic Setting With Private Observations, In *2025 IEEE International Symposium on Information Theory (ISIT)*.

2. **Yanyan Dong**, Yang, S., Wang, J., & Cheng, F. (2024). Throughput and Latency of Network Coding in Line Networks with Outages, In *2024 IEEE International Symposium on Information Theory (ISIT)*. https://doi.org/10.1109/ISIT57864.2024.10619670

3. **Yanyan Dong** and Shenghao Yang. (2023). Characterization of All Optimal Finite-length Codes of Size Four for Binary Symmetric Channels, In *2023 IEEE International Symposium on Information Theory (ISIT)*. IEEE. https://doi.org/10.1109/ISIT54713.2023.10206921

4. **Yanyan Dong**, Sheng Jin, Shenghao Yang and Hoover H. F. Yin. (2020). Network Utility Maximization for BATS Code Enabled Multihop Wireless Networks, In *2020 IEEE International Conference on Communications (ICC)*. IEEE. https://doi.org/10.1109/ICC40277.2020.9148834

5. **Yanyan Dong** and Shenghao Yang. (2020). On Optimal Finite-length Binary Codes of Four Codewords for Binary Symmetric Channels, In *2020 International Symposium on Information Theory and Its Applications (ISITA)*. IEEE.

6. Shenghao Yang, Jie Wang, **Yanyan Dong** and Yiheng Zhang. (2019). On the Capacity Scalability of Line Networks with Buffer Size Constraints, In *2019 IEEE International Symposium on Information Theory (ISIT)*. IEEE. https://doi.org/10.1109/ISIT.2019.8849792

## Contributed Presentations

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| August 2025 | Workshop on AI - Centric Information Processing: From Detection to Optimization, CUHKSZ |
| July 2024 | IEEE International Symposium on Information Theory (ISIT) |
| June 2023 | IEEE International Symposium on Information Theory (ISIT) |
| October 2020 | International Symposium on Information Theory and Its Applications (ISITA), virtual |
| June 2020 | IEEE International Conference on Communications (ICC), virtual |

## Reviewing Experience

Journal reviewer for:

- IEEE Transactions on Information Theory
- IEEE Transactions on Networking
- IEEE Transactions on Communications

## Reviewing Experience (continued)

- IEEE Transactions on Wireless Communications

## Teaching

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| Fall 2021 | **Teaching Assistant** for Selected Topics in Information Theory. |
| Spring 2021 | **Teaching Assistant** for Advanced Linear Algebra. |
| Fall 2020 | **Teaching Assistant** for Selected Topics in Information Theory. |
| Spring 2020 | **Teaching Assistant** for Introduction to Geography and Topology. |
| Fall 2019 | **Teaching Assistant** for Selected Topics in Information Theory. |
| Spring 2019 | **Teaching Assistant** for Probability Theory. |
| Fall 2018 | **Teaching Assistant** for Elementary Real Analysis. |
| Fall 2017 and Spring 2018 | **Teaching Assistant** for Mathematical Analysis. |

## Awards and Honors

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| July 2021 | **2021 CIE Poster Award**, School of Science and Engineering, CUHKSZ |
| 2020.9-2022.9 | **Nominations for SRIBD PhD Fellowship**, Shenzhen Research Institute of Big Data, CUHKSZ |
| 2016.8 | **Third Class Award**, School of Mathematics, Jilin University. |
| 2015.8 | **First Class Award & School Outstanding Student**, Jilin University. |
| 2014.8 | **Inspirational scholarship**, School of Mathematics, Jilin University. |
| 2013.8 | **New Student Scholarship**, School of Mathematics, Jilin University. |

## References

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