

# Xiaomeng Chen

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## RESEARCH INTERESTS

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1. Advanced Channel Coding Techniques 2. Wireless Communications 3. Information Theory

## EDUCATION

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**Harbin Institute of Technology, Shenzhen (HITSZ)** (985 Project, C9 League) Guangdong, China  
*Master candidate in EE* August 2023 | Present

- **GPA:** 3.746/4.000 **RANK:** 1
- **Major Course:** Numerical Analysis, Information Theory, Matrix Analysis, Wireless Communication Network, Stochastic Network Optimization
- **Supervisor:** Shaohua Wu

**Harbin Institute of Technology, Shenzhen (HITSZ)** (985 Project, C9 League) Guangdong, China  
*Bachelor degree in EE (Highest Honor)* August 2019 | June 2023

- **GPA:** 92.224/100.000 **RANK:** 8/187
- **Major Course:** Higher Mathematics, Principles of Communications, Probability and Statistic

## RESEARCH EXPERIENCE

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**National Key Research and Development Program of China** no. 2020YFB1806403  
*Demonstration of broadband communications and new network applications*  
– *Integrated test demonstration of air, space and sea coverage network* 2020 | Present

- Engaged in a new-generation demonstration platform scientific facility to lead technological research in the field of network communications and support common technological innovations.
- Developed the optimization of new timeliness indicators related to information theory.
- Published "Optimal Sampling for Uncertainty-of-Information Minimization in a Remote Monitoring System," ITW, 2024.

**Guangdong Basic and Applied Basic Research Foundation** no. 2022B1515120002  
*Highly time-sensitive air, space, land and sea integrated information network and key technologies* 2022 | Present

- Engaged in the advanced and key technologies applied in air, space, land and sea integrated information network when information timeliness is considered.
- Developed the fundamental theory of advanced channel coding techniques.
- Published "Tight Upper Bounds on the Error Probability of Spinal Codes over Fading Channels," ISIT, 2023.

## PROJECT

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**Information Theory and Coding** Fall 2022  
Simulation and analysis about channel coding and source coding based on information theory.

- Source coding based on Shannon coding, Huffman coding and LZW coding.
- Channel coding based on Hamming code and convolution code.
- Gained BER of concatenated codes after transmission through AWGN channel.

**Simulation of Communication Systems** Spring 2022  
Basic simulation methods in communication systems.

- Simulation of BER based on Monte Carlo method.
- Interpolation, equivalent low-pass signal or system and post-processing of data.
- Modeling and simulation of wireless channel.

## PUBLICATIONS

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**Conference paper**  
Published

- **X. Chen**, A. Li and S. Wu, "Tight Upper Bounds on the Error Probability of Spinal Codes over Fading Channels," IEEE International Symposium on Information Theory (ISIT), Aug, 2023, pp. 1277-1282.

- **X. Chen**, A. Li and S. Wu, "Optimal Sampling for Uncertainty-of-Information Minimization in a Remote Monitoring System," 2024 IEEE Information Theory Workshop (ITW), Shenzhen, China, 2024, pp. 115-120.
- A. Li, S. Wu, G. C. F. Lee, **X. Chen** and S. Sun, "Sampling to Achieve the Goal: An Age-aware Remote Markov Decision Process," 2024 IEEE Information Theory Workshop (ITW), Shenzhen, China, 2024, pp. 121-126.

### Journal paper

#### Published

- A. Li, S. Wu, **X. Chen** and S. Sun, "Tight Upper Bounds on the BLER of Spinal Codes Over the AWGN Channel," in IEEE Transactions on Communications, vol. 73, no. 1, pp. 332-347, Jan. 2025.

#### Reviewed

- A. Li, **X. Chen** (Co-first author), S. Wu, G. Lee, S. Sun, "A Unified Expression for Upper Bounds on the BLER of Spinal Codes over Fading Channels," submitted to Transactions on Wireless Communications.
- A. Li, S. Wu, **X. Chen**, S. Sun, "Error Floor of Spinal Codes under ML Decoding," submitted to IEEE Transactions on Vehicular Technology.

#### Submitted

- **X. Chen**, S. Wu, A. Li, D. Chen, P. Duan, and Q. Zhang "Minimizing the Uncertainty-of-Information in a Remote Networked Monitoring System," submitted to IEEE/ACM Transactions on Networking.

## AWARDS

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<b>National Scholarship of China</b> The Highest-Level Scholarship Funded by Government. Rate top 0.2% in China.	Nov. 2024
<b>Special Merit Scholarship</b> Rate top 20% in EE Department.	Oct. 2024
<b>Best Thesis Award of HITSZ</b> The Highest-Level award for outstanding thesis. Rate top 2% in EE Department.	Jul. 2023
<b>Outstanding Graduates of HIT</b> Rate top 10% in EE Department.	May. 2023
<b>Third Prize of Chinese Undergraduate Electronics Design Contest</b> Third Prize of National-level Electronics Design Competitions in China.	Aug. 2022
<b>National Scholarship of China</b> The Highest-Level Scholarship Funded by Government. Rate top 0.2% in China.	Nov. 2020
<b>Outstanding Student Scholarship (Grade 1)</b> Rate top 5% in EE Department.	Oct. 2020

## TEACHING EXPERIENCES

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<b>Information Theory (Graduate Course)</b> Teaching Assistant, with Prof. Shaohua Wu, at Harbin Institute of Technology (Shenzhen)	Fall 2024
<b>Electronic Technology Practice (Undergraduate Course)</b> Teaching Assistant, with Yuanqing Li, Fei gao, and Qianqian Zhang, at Education Center of Experiments and Innovations (HITSZ), and gained Outstanding Teaching Assistant Award.	Fall 2022 & Spring 2022

## SKILLS

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- **Programming:** C, Python
- **Software:** Matlab, Pycharm, Code Composer Studio
- **English:** IELTS (Academic) 6.5 (overall score)

## REFERENCES

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### Dr. Shaohua Wu

Full Professor, Electrical Engineering, Harbin Institute of Technology (Shenzhen)

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