Xiaomeng Chen

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EDUCATION

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, top 5%
- **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, top 5%
- **Major Course:** Higher Mathematics, Probability and Statistic, Signals and Systems, Principles of Communications, Mobile Communications

RESEARCH INTERESTS

Advanced Channel Coding Techniques

- Performance analysis of channel coding in the Finite Block-Length (FBL) regime.
- My research work about FBL analysis of Spinal codes has been published in *IEEE proc. ISIT*, *IEEE Trans. Commun.*, and submitted to *IEEE Trans. Wirel. Commun.* and *IEEE Trans. Veh. Technol.*

Goal-oriented Communications and Information Timeliness

- Goal-oriented and semantic communications, with a specific interest in evaluating the significance and value of sampled data packets to enhance goal completion.
- My research work about optimal sampling policy to minimize Uncertainty-of-Information (an AoI-related indicator) has been published in *IEEE proc. ITW*, and submitted to *IEEE/ACM Trans. Netw.*

Information Theory and Wireless Communications

- Fundamental knowledge and experiments have been applied in every research work.
- Related projects are shown as follows, and code is displayed on github.

PUBLICATIONS

Conference paper
Published

- [ISIT] **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.
- [ITW] **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.
- [ITW] 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

- [TCOM] 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 (Major Revision)

- [TWC] 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.
- [TVT] A. Li, S. Wu, **X. Chen**, S. Sun, "Error Floor of Spinal Codes under ML Decoding," submitted to IEEE Transactions on Vehicular Technology.

Submitted

- [TON] **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.

PROJECT

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.

AWARDS

National Scholarship of China   Nov. 2024
The Highest-Level Scholarship Funded by Government. Rate top 0.2% in China.

Special Merit Scholarship   Oct. 2024
Rate top 20% in EE Department.

Best Thesis Award of HITSZ   Jul. 2023
The Highest-Level award for outstanding thesis. Rate top 2% in EE Department.

Outstanding Graduates of HIT   May. 2023
Rate top 10% in EE Department.

Third Prize of Chinese Undergraduate Electronics Design Contest   Aug. 2022
Third Prize of National-level Electronics Design Competitions in China.

National Scholarship of China   Nov. 2020
The Highest-Level Scholarship Funded by Government. Rate top 0.2% in China.

Outstanding Student Scholarship (Grade 1)   Oct. 2020
Rate top 5% in EE Department.

TEACHING EXPERIENCES

Information Theory (Graduate Cource)   Fall 2024
Teaching Assistant, with Prof. Shaohua Wu, at Harbin Institute of Technology, Shenzhen

Electronic Technology Practice (Undergraduate Cource)   Fall 2022 & Spring 2022
Teaching Assistant, with Yuanqing Li, Fei gao, and Qianqian Zhang, at Education Center of Experiments and Innovations (HITSZ), and gained Outstanding Teaching Assistant Award.

SKILLS

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

REFERENCES

Dr. Shaohua Wu
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Scholar Profiles: Harbin Institute of Technology, Shenzhen – Personal Page