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华中科技大学 计算机系统结构 · 博士 1993-01-02 武汉

计算机系统结构专业博士，擅长磁存储及光存储系统建模与分析，热衷数据存储技术、信号处理与信息理论。

教育背景

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|---------|---------------------|
| 至今 | 华中科技大学 · 武汉光电国家研究中心 |
| 2023.03 | 光学工程 · 博士后 |
| 2022.12 | 华中科技大学 · 武汉光电国家研究中心 |
| 2016.09 | 计算机系统结构 · 博士 |
| 2016.06 | 中南民族大学 · 电子信息工程学院 |
| 2012.09 | 电子信息工程 · 学士 |

科研项目

- 国家自然科学基金，面上项目，62272178, 超高密度三维热辅助磁记录写机制研究，2023/01 至 2026/12，在研，参与
- 国家自然科学基金，面上项目，61672246, 超高密度二维磁记录读磁头阵列及其记录系统关键技术研究，2017/01 至 2020/12，已结题，参与
- 国家自然科学基金，面上项目，61272068，比特图案介质的超高密度瓦记录关键技术研究，2013/01-2016/12，已结题，参与
- 企业横向，面向蓝光超多层 PRML 算法技术合作项目，2024/07 至 2025/01，在研，参与
- 企业横向，基于 BDXL 标准的 PRML 模型设计与实现合作项目，2022/08 至 2023/06，已结题，参与
- 企业横向，HDD 原型算法和先进磁记录技术合作项目，2022/03 至 2023/03，已结题，参与

科研成果

论文及专利

- ZHU C, SUN C, LIU Y, CHEN J, LUO K*. Enhancing Speech Emotion Recognition with Speech Dynamic Modeling and Multi-Modal Knowledge Distillation[C]//2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). 2025.
- LIU Y, LUO K*, CHEN J. Multi-modal Image Reflection Removal with Prior Knowledge of Reflection Structure Inconsistency[C]//The 10th IEEE International Conference on Data Science and Systems (DSS 2024). 2024.
- LUO K, LIAO Y, ZHANG K, JIAN Y, WANG S, CHEN J*, LU P. On the impact of interlayer misalignment for dual-layer data detection in three dimensional magnetic recording[J/OL]. Journal of Magnetism and Magnetic Materials, 2024, 610: 172522. <https://www.sciencedirect.com/science/article/pii/S0304885324008138>. DOI: <https://doi.org/10.1016/j.jmmm.2024.172522>.
- LUO K, ZHANG K, WU F, LIAO Y, GAO H, LI W, JIAN Y, LIU Z, ZHAO Y, CHEN J*, LU P, WANG S. The Compatible Partial Response Maximum Likelihood Detection Schemes for Blu-Ray Discs[C]//The 21st International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology. Thailand, 2024: 1-5.
- LIAO Y, ZHANG K, JIAN Y, WANG S, CHEN J, LU P, LUO K*. Decision-Feedback Single-Layer Read Reconstruction and Separation for Three-dimensional Magnetic Recording[C]//2024 IEEE International Magnetism Conference (INTERMAG): AD-03. Rio de Janeiro, Brazil, 2024: 1-2.
- LUO K, WU Y, LIAO Y, WANG S, JIAN Y, CHEN J*, LU P. Quaternary Neural Network Equalization for Three-

- Dimensional Magnetic Recording[C]//2024 IEEE International Magnetism Conference (INTERMAG): AD-11. Rio de Janeiro, Brazil, 2024: 1-2.
- [7] **LUO K**, JIAN Y, LIAO Y, ZHANG K, CHEN J*, LU P. A Graded Precompensation Scheme by Pattern Classification on Nonlinear Transition Shift for Perpendicular Magnetic Recording[J]. IEEE Transactions on Magnetism, 2023: 1-1. DOI: 10.1109/TMAG.2023.3288371.
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 - [11] CHEN W, CHEN J*, GAN Z, **LUO K**, HUANG Z, LU P. High-Field Enhancement of Plasmonics Antenna Using Ring Resonator for HAMR[J]. IEEE Transactions on Magnetism, 2020, 56(7): 1-5. DOI: 10.1109/TMAG.2020.2990525.
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 - [20] WANG S, CHEN J*, **LUO K**, XIE G, LU P, CHENG W. Performance Evaluation of Four-Reader Array Detection for Two-Dimensional Magnetic Recording[J]. Science of Advanced Materials, 2019, 11(6): 835-841.
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Ke Luo

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Ph.D. in Computer System Architecture Huazhong University of Science and Technology (HUST)

1993 Jan. Wuhan

Highly-motivated Ph.D. in Computer Science(Computer Architecture) with good foundations of math and statistics. Proficient in storage channel modeling, analysis, and signal processing and enthusiastic about data storage technologies and deep learning inspired information theory. Skilled in Matlab/Octave, Python, and C/C++ programming. Passionate about computer science, hiking, and photography.

Education

| | |
|----------------|-----------------------------------------------------------------------------------------------------|
| Till now | Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology |
| March 2023 | Postdoc. in Optical Engineering |
| December 2022 | Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology |
| September 2016 | Ph.D. in Computer Architecture |
| June 2016 | College of Electronics and Information, South-Central Minzu University |
| September 2012 | Beachelor in Electronics and Information Engineering |

Research Projects

- ▶ National Natural Science Foundation of China, General Program, No. 62272178, Study of Write Mechanism of Ultra-high Density Three-Dimensional Heat-Assisted Magnetic Recording, 2023/01 ~ 2026/12, Active, Member
- ▶ National Natural Science Foundation of China, General Program, No. 61672246, Key Technologies of Read Heads Array and The Recording System for Two-Dimensional Magnetic Recording at Ultra-high Density, 2017/01 ~ 2020/12, Finished, Member
- ▶ National Natural Science Foundation of China, General Program, No. 61272068, Key Technologies of Ultra-high Density Shingled Magnetic Recording on Bit Patterned Media, 2013/01 ~ 2016/12, Finished, Member
- ▶ Enterprise Cooperation Project, PRML algorithms and techniques for multi-layer Blu-ray discs, 2024/07 ~ 2025/01, Active, Member
- ▶ Enterprise Cooperation Project, BDXL Standard Based PRML Model Design and Implementation, 2022/08 ~ 2023/06, Finished, Member
- ▶ Enterprise Cooperation Project, HDD Prototype Algorithms and Innovative Magnetic Record Technology, 2022/03 ~ 2023/03, Finished, Member

Research Achievements

References

[1] K. Luo, Y. Liao, K. Zhang, Y. Jian, S. Wang, J. Chen, and P. Lu, "On the impact of interlayer misalignment for dual-layer data detection in three dimensional magnetic recording," *Journal of Magnetism and Magnetic Materials*, vol. 610, p. 172522, 2024. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0304885324008138>

[2] K. Luo, K. Zhang, Y. Wu, Y. Liao, H. Gao, W. Li, Y. Jian, Z. Liu, Y. Zhao, J. Chen, P. Lu, and S. Wang, "The compatible partial response maximum likelihood detection schemes for blu-ray discs," in *2024 21st International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON)*, 2024, pp. 1–5.

- [3] Y. Liao, K. Zhang, Y. Jian, S. Wang, J. Chen, P. Lu, and K. Luo, "Decision-Feedback Single-Layer Read Reconstruction and Separation for Three-dimensional Magnetic Recording," in *2024 IEEE International Magnetism Conference (INTERMAG)*, no. AD-03, Rio de Janeiro, Brazil, May 2024, pp. 1–2.
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- [16] S. Wang, J. Chen, K. Luo, P. Lu, and W. Cheng, "Four-Reader Array Detection for Two-Dimensional Magnetic Recording," in *2018 Asia-Pacific Magnetic Recording Conference (APMRC)*, no. S08-B01, USST, China, Nov. 2018, pp. 1–2.
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- [21] C. Zhu, C. Sun, Y. Liu, J. Chen, and K. Luo, "Enhancing speech emotion recognition with speech dynamic modeling and multi-modal knowledge distillation," in *2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2025.