

Renfeng Peng

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🎂 Sept. 30th, 1998, Changde, Hunan

📍 Room 101, Lanbai Building, No.55, East Zhongguancun Road, Beijing 100190, China

🌐 <http://jimmypeng1998.github.io/>

➲ Renfeng Peng at Google scholar



🎓 Education

- 2021.09 – current 📚 **Ph.D. student in computational mathematics.**
Academy of Mathematics and System Science, Chinese Academy of Sciences; and
University of Chinese Academy of Sciences
- 2017.09 – 2021.07 📚 **Bachelor in mathematics and applied mathematics**
School of Mathematical Sciences, Tongji University.

📄 Publications

Refereed papers

- 1 Bin Gao, Renfeng Peng, and Ya-xiang Yuan. "Low-rank optimization on Tucker tensor varieties". In: *Mathematical Programming* (2025), pp. 1–51. ↗ DOI: [10.1007/s10107-024-02186-w](https://doi.org/10.1007/s10107-024-02186-w).
- 2 Bin Gao, Renfeng Peng, and Ya-xiang Yuan. "Optimization on product manifolds under a preconditioned metric". In: *SIAM Journal on Matrix Analysis and Applications* 46.3 (2025), pp. 1816–1845. ↗ DOI: <https://doi.org/10.1137/24M1643773>.
- 3 Chengkai Zhu, Renfeng Peng, Bin Gao, and Xin Wang. "Riemannian Optimization for Holevo Capacity". In: *2025 IEEE International Symposium on Information Theory (ISIT)*. 2025, pp. 1–6. ↗ DOI: [10.1109/ISIT63088.2025.11195337](https://doi.org/10.1109/ISIT63088.2025.11195337).
- 4 Bin Gao, Renfeng Peng, and Ya-xiang Yuan. "Riemannian preconditioned algorithms for tensor completion via tensor ring decomposition". In: *Computational Optimization and Applications* 88 (2024), pp. 443–468. ↗ DOI: [10.1007/s10589-024-00559-7](https://doi.org/10.1007/s10589-024-00559-7).
- 5 Ling-Xi Zhang, Ren-Feng Peng, and Jun-Feng Yin. "A second order numerical scheme for fractional option pricing models". In: *East Asian J. Appl. Math* 11 (2021), pp. 326–348. ↗ DOI: [10.4208/eajam.020820.121120](https://doi.org/10.4208/eajam.020820.121120).

Preprints

- 1 Bin Gao, Renfeng Peng, and Ya-xiang Yuan. "First-order methods on bounded-rank tensors converging to stationary points". In: *arXiv preprint arXiv:2503.04523* (2025).
- 2 Renfeng Peng, Chengkai Zhu, Bin Gao, Xin Wang, and Ya-xiang Yuan. "Normalized tensor train decomposition". In: *arXiv preprint arXiv:2511.04369* (2025).
- 3 Bin Gao, Renfeng Peng, and Ya-xiang Yuan. "Desingularization of bounded-rank tensor sets". In: *arXiv preprint arXiv:2411.14093* (2024).

💡 Skills

Languages 📚 Mandarin Chinese, English.

Coding 📚 Matlab, C, C++, L^AT_EX, ...

Awards and Achievements

- 2025/09  AMSS President's Special Award (32,000 CNY).
- 2024/09  Loo-Keng Hua Scholarship.
- 2021/09  Loo-Keng Hua Scholarship.

Presentations

- 2025/08  **The 15th International Conference on Numerical Optimization and Numerical Linear Algebra.** Harbin, China.
- 2025/07  **The 8th International Conference on Continuous Optimization.** Los Angeles, U.S.
- 2024/11  **The 7th PKU PhD Symposium for Applied Mathematics.** Beijing, China.