Jin-Peng Liu

Education

2017–Now **Ph.D Student**, *University of Maryland*, College Park.
Applied Mathematics, Statistics, and Scientific Computation Program.
Adviser: Andrew M. Childs.

2013–2017 **Bachelor of Science**, *Beihang University*, Beijing.
Chinese Academy of Sciences - Beihang University Hua Loo Keng Class.

Awards

2017 **Dean's Fellowship**: First-year fellowship in AMSC Program, University of Maryland.

2017 **Representative of Graduation Ceremony**: 1/3987 in Beihang University.

2016 **Shenyuan Golden Medal**: 10/3987, the highest prize of undergraduates in Beihang University.

Research Interests

Quantum Computing: My research aims to develop quantum algorithms with sup-polynomial speed-ups over classical algorithms, including topics such as quantum PDE solvers, quantum optimization and quantum machine learning.

Numerical Analysis: I am interested in classical numerical analysis, mainly working on first-order methods for convex and non-convex optimization problems.

Papers

[1] Andrew M. Childs and Jin-Peng Liu. Quantum spectral methods for differential equations. *To appear in* ***Communications in Mathematical Physics****, arXiv:1901.00961*, 2019.

[2] Andrew M. Childs, Jin-Peng Liu, and Aaron Ostrander. High-presion quantum algorithms for partial differential equations. *Submitted to* ***Quantum***.

[3] Cong Sun, Jin-Peng Liu, and Ya-xiang Yuan. New gradient method with adaptive stepsize update strategy. *Submitted, presented at* ***International Conference on Continuous Optimization 19*** *as a contributed talk*, 2019.

[4] Cong Sun and Jin-Peng Liu. New stepsizes for the gradient method. *Published in* ***Optimization Letters****, doi:10.1007/s11590-019-01512-y, presented at* ***SIAM Conference on Optimization 17*** *as a contributed talk*, 2019.

[5] Furong Huang, Jingling Li, and Jin-Peng Liu. Escaping from saddle points using asynchronous coordinate descent. *Manuscript*.

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