

NILIN ABRAHAMSEN

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EDUCATION

2021 PhD | Mathematics
 Massachusetts Institute of Technology

2015 MS | Mathematics

2013 BS | Mathematics
 University of Copenhagen

EMPLOYMENT

2021/9/1-present Simons Postdoctoral Fellow
 The Simons Institute for the Theory of Computing at UC Berkeley

PAPERS

Entanglement area law for one-dimensional gauge theories and bosonic systems

Nilin Abrahamsen, Yu Tong, Ning Bao, Yuan Su, and Nathan Wiebe

Physical review A, Vol. 108, Iss. 4 — October 2023

Efficient Anti-Symmetrization of a Neural Network Layer by Taming the Sign Problem

Nilin Abrahamsen and Lin Lin

J. Mach. Learn., 2 (2023), pp. 211-240.

Simple and deterministic spectral concentration bound for local Hamiltonians

Nilin Abrahamsen

To appear in Quantum Information & Computation

Anti-symmetric Barron functions and their approximation with sums of determinants

Nilin Abrahamsen and Lin Lin

preprint, 2023

Inventing art styles with no artistic training data

Nilin Abrahamsen and Jiahao Yao

preprint, 2023

Convergence of stochastic gradient descent on parameterized sphere with applications to variational Monte Carlo simulation

Nilin Abrahamsen, Zhiyan Ding, Gil Goldshlager, Lin Lin
preprint, 2023

A polynomial-time algorithm for ground states of spin trees

Nilin Abrahamsen
Presented at Quantum Information Processing (QIP) 2020

Sub-exponential algorithm for 2D frustration-free spin systems with gapped subsystems

Nilin Abrahamsen
preprint

Sparse Gaussian ICA

Nilin Abrahamsen and Philippe Rigollet
preprint

TEACHING

2016/9-2020/6 Teaching Assistant

Massachusetts Institute of Technology

18.600 Probability and Randomness

18.06 Linear Algebra

18.650 Fundamentals of Statistics

18.200 Principles of Discrete and Applied Mathematics

18.01 Calculus

PROFESSIONAL SERVICE

Reviewer for Innovations in Theoretical Computer Science (ITCS), Journal of Computational Physics (JCP), Quantum Computing Theory in Practice (QCTIP), Siam Journal of Scientific Computing (SISC), Symposium on Theory of Computing (STOC).

REFERENCES

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