ÁKOS NAGY

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BACKGROUND

Quantum Algorithm Scientist and Mathematician with over a decade of research experience. Previously held research positions at Duke University, the Fields Institute, the University of Waterloo, the Perimeter Institute, and UC Santa Barbara. Interested in Quantum Computation and its applications to real world problems.

SKILLS

Coding	:	Python (Qiskit, NumPy, XGBoost, scikit-learn, pandas), Amazon Braket, Golang, Git, Linux, Shell, LaTeX
Quantum Computing	:	Quantum Algorithms, Fault Tolerance, Quantum Error Mitigation/Correction, Quantum LDPC codes
Physics	:	Quantum Information Theory, Solid state physics, Topological Phases of Matter
Mathematics	:	Statistics, Manifold Learning, Graph Theory, Probability Theory, Topology, Gauge Theory
Soft skills	:	Decorated mathematics educator, Experienced public speaker, Organizer of research seminars and workshops
Languages	:	English (fluent), Hungarian (native)

EXPERIENCE

Senior Quantum Algorithm Scientist — BEIT Canada Inc. — Since October 2023

- Developing novel Quantum Algorithms to solve NP-hard problems.

Visiting Assistant Professor — *University of California, Santa Barbara* — July 2020 – June 2023

- Published 6 research papers; notably, in the prestigious *Memoirs of the American Mathematical Society, Proceedings of the American Mathematical Society*, and the *Annales Henri Poincaré*.
- Received the *Mochizuki Memorial Award* for "*outstanding contributions to the [Math] departments instructional goals*".

William W. Elliott Assistant Research Professor of Mathematics — Duke University — January 2018 – June 2020

- Published 3 research papers and gave over a dozen research talks, for example, in the United States, Canada, Brazil, and Hungary.
- Advised undergraduate students interested in mathematical research; helped one of them to get into their desired graduate program.

Postdoctoral Fellow — University of Waterloo/Perimeter Institute/Fields Institute — July 2016 – December 2017

- Published 3 papers; notably, one in the prestigious *Communications in Mathematical Physics.*
- Received the prestigious Fields Postdoctoral Fellowship.

More information, in particular, a list of publications and talks can be found at <u>akosnagy.com</u>.

SELECTED PROJECTS

Solving Quadratic Binary Optimization problems on Quantum Computers

- Developing an Fixed-point Grover Adaptive Search for Quadratic Binary Optimization problems.
- Testing is done on IonQ's Quantum Computers.

Hyperbolic Crystals and Quantum Computers — ongoing project with Prof. Steve Rayan

- Studying a novel type of matter, Hyperbolic Crystals, and their connections to Quantum Information.
- Published result: <u>On the Hyperbolic Bloch Transform</u>, Annales Henri Poincaré (2023).

LEADERSHIP EXPERIENCE

(Co-)Organized a week-long workshop at the American Institute of Mathematics in San Jose — July 25–29, 2022

- Initiated the organization, prepared schedule and invitations, and moderated talks and discussion.

Advised undergraduate researchers ("*DoMath*" Project at Duke University) — Summer 2019

- Led a team of two undergraduate students through the complete process of research; from the start to publication.
- The final work was published in the Journal of Mathematical Physics, with the "Editor's Pick" distinction.

EDUCATION

Michigan State University,	*PhD in Mathematics*	2016
Budapest University of Technology,	*Masters in Mathematics (with highest honors)*	2011
Budapest University of Technology,	*Masters in Engineering-Physics*	2010