Jonas Conneryd

Department of Computer Science
Lund University
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Education

Lund University   Lund, Sweden
Ph.D. in Theoretical Computer Science   2026 (expected)
Advisor: Prof. Jakob Nordström

KTH Royal Institute of Technology   Stockholm, Sweden
M.Sc. in Mathematics (joint with Stockholm University)   June 2021
Thesis: *Geometric Bounds for Steklov Eigenvalues on Graphs* (awarded *Mittag-Leffler Prize*)
B.Sc. in Engineering Physics   June 2019
Thesis: *Explicit Symplectic Integrators for Non-Separable Hamiltonians in Molecular Dynamics*

Research Interests

Computational complexity theory, particularly proof complexity with an algebraic flavour as well as connections between proof complexity and circuit complexity.

Publications

[1] Jonas Conneryd, Susanna F. de Rezende, Jakob Nordström, Shuo Pang, and Kilian Risse. *Graph Colouring Is Hard on Average for Polynomial Calculus and Nullstellensatz*. Accepted to FOCS'23.

[2] Jonas Conneryd. *Geometric Bounds for Steklov Eigenvalues on Graphs*. M.Sc. thesis. Stockholm University, 2021. 53 pp.

[3] Jonas Conneryd and Anna Lassen. *Explicit Symplectic Integrators for Non-Separable Hamiltonians in Molecular Dynamics*. B.Sc. thesis. KTH Royal Institute of Technology, 2019. 27 pp.

Research Visits

Simons Institute for the Theory of Computing at UC Berkeley   Berkeley, CA
Visiting Graduate Student   Spring 2023
Visiting researcher for the semester program *Satisfiability: Extended Reunion*.

Schloss Dagstuhl   Dagstuhl, Germany
Visiting Researcher   Fall 2022
Visiting researcher for the workshop *Satisfiability: Theory, Practice and Beyond*.

Awards and Scholarships

- *Mittag-Leffler Prize for outstanding Master's theses in Mathematics*; Stockholm University, 2021
- *Ingenjör Ernst Johnson Scholarship for outstanding academic achievements*; KTH, 2020, 2021
- *Henrik Göransson Sandviken Scholarship for outstanding academic achievements*; KTH, 2018
- *University Merit Scholarship for outstanding academic achievements*; KTH, 2018, 2019, 2020, 2021

Work Experience

AP3 Third National Swedish Pension Fund   Stockholm, Sweden
ILS Intern   2019-2021
Quantitative analysis of Insurance Linked Securities (ILS).

Teaching Experience

Lund University

- EDAN55 Advanced Algorithms, 2023
- EDAN01 Constraint Programming, 2022
- EDAA40/75 Discrete Structures in Computer Science, 2021

KTH Royal Institute of Technology

- SF1661 Perspectives on Mathematics, 2018
- SF1624 Algebra and Geometry, 2017

Technical Skills

Programming: Python, Go, LaTeX, Julia, MATLAB
Software: RMS Miu