

Jonas Conneryd

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Education

Lund University	Lund, Sweden
Ph.D. in Theoretical Computer Science	2026 (expected)
Advisors: Prof. Jakob Nordström, Asst. Prof. Susanna de Rezende	
KTH Royal Institute of Technology	Stockholm, Sweden
M.Sc. in Mathematics (joint with Stockholm University)	June 2021
Thesis: <i>Geometric Bounds for Steklov Eigenvalues on Graphs</i> (awarded Mittag-Leffler Prize)	
B.Sc. in Engineering Physics	June 2019
Thesis: <i>Explicit Symplectic Integrators for Non-Separable Hamiltonians in Molecular Dynamics</i>	

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.

Talks

Proof Complexity and Beyond, Oberwolfach Workshop 2413	Oberwolfach, Germany
<i>Graph Colouring Is Hard on Average for Polynomial Calculus and Nullstellensatz</i>	Spring 2024
IEEE Symposium on Foundations of Computer Science	Santa Cruz, CA
<i>Graph Colouring Is Hard on Average for Polynomial Calculus and Nullstellensatz</i>	Fall 2023

Research Visits

Mathematisches Forschungsinstitut Oberwolfach	Oberwolfach, Germany
<i>Visiting Researcher</i>	Spring 2024
Visiting researcher for the workshop <i>Proof Complexity and Beyond</i> .	
Simons Institute for the Theory of Computing at UC Berkeley	Berkeley, CA
<i>Visiting Graduate Student</i>	Spring 2023
Visiting researcher for the semester programme <i>Satisfiability: Extended Reunion</i> .	
Schloss Dagstuhl	Dagstuhl, Germany
<i>Visiting Researcher</i>	Fall 2022
Visiting researcher for the workshop <i>Satisfiability: Theory, Practice and Beyond</i> .	

Awards and Scholarships

- *Oberwolfach Leibniz Graduate Student*; Mathematisches Forschungsinstitut Oberwolfach, 2021
- *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

Teaching Experience

Lund University
• EDAN55 Advanced Algorithms, 2023, 2024
• EDAN01 Constraint Programming, 2022, 2023
• EDAA40/75 Discrete Structures in Computer Science, 2022, 2024
KTH Royal Institute of Technology
• SF1661 Perspectives on Mathematics, 2018
• SF1624 Algebra and Geometry, 2017

Work Experience

AP3 Third National Swedish Pension Fund

Stockholm, Sweden

ILS Intern

2019-2021

Quantitative analysis of Insurance Linked Securities (ILS).

Technical Skills

Programming: Python, Go, \LaTeX , Julia, MATLAB

Software: RMS Miu