

Filip Samuelson

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EDUCATION

PhD in Mathematics

August 2020 – May 2025

Stony Brook University, USA

Bachelor of Science in Mathematics and Physics

September 2016 – January 2020

Roskilde University, Denmark

EMPLOYMENT

Teaching Assistant

January 2021 – December 2024

Stony Brook University

During my time at Stony Brook I was a teaching assistant for several courses, including Mathematical Thinking, Calculus, Linear Algebra, Differential Equations and Advanced Topology & Geometry.

Research Assistant

January 2020 – July 2020

Roskilde University

Conducting and optimizing computer simulations of geodesic flow on certain high dimensional manifolds with applications to the research field of viscous liquids.

Study Environment Tutor

June 2017 – July 2019

Roskilde University

As study environment tutor, I helped strengthening the teamspirit, social framework and academic environment for new students at Roskilde University.

OTHER UNIVERSITY SERVICES

Seminar Organizer

- Mathematics Graduate Student Seminar at Stony Brook University (For the academic year 2021/2022)

University Politics

- Elected member of the Study Board for the bachelor educations in natural sciences at Roskilde University.

PUBLICATIONS

Preprints

- On the topology of $B\Gamma_n$ and its application to complex structures on open manifolds [arXiv:2504.10610](#)
- Conformal renormalization of compact sets (joint with C. L. Petersen) [arXiv:2111.01924](#)
- A toy model for viscous liquid dynamics [arXiv:2206.03000](#)

RESEARCH

I am completing a PhD in Mathematics at Stony Brook University, expected May 2025, under the supervision of Dennis Sullivan.

For my dissertation, I tackled a long-standing open problem in geometry: whether every open almost complex manifold admits complex analytic coordinates. This problem had seen no progress since 1975, with results known only in low dimensions (2, 4, and 6). I extended these results by proving the conjecture in dimensions 8 and 10 — marking the first major advance in nearly 50 years.