

+4553162547
Copenhagen
sophusvw@gmail.com

Sophus Valentin Willumsgaard

EDUCATION

Master of Mathematics

August 2022 - May 2024 (expected)

University of Copenhagen, Grade average 12

Relevant courses: Algebraic Geometry 2, Algebraic Topology 2, Categories and Topology, Topics in Algebraic Topology, Riemannian Geometry. Riemannian

Bachelor of Mathematics

August 2020 - May 2022

University of Copenhagen, Grade average 11.86

Bachelor Thesis: Calculation on the Cobordism ring of oriented and unoriented manifolds, using the Pontryagin-Thom Construction.

Bachelor of Mathematics

August 2019 - May 2020

Aarhus University

I did my first year of my bachelor at Aarhus University, and then transferred to University of Copenhagen.

WORK EXPERIENCE

Teaching Assist

August 2021 - Present

University of Copenhagen

Courses Taught in chronological order:

- Mathematical Analysis / Matematisk Analyse (Machine Learning bachelor course) Block 1 2021-2022
- Measure theory / Mål- og Integralteori Block 2 2021-2022
- Linear Algebra in the Mathematical Sciences / Lineær algebra i de matematiske fag Block 2 2022-2023
- Algebra 2 Block 3 2022-2023
- Geometry 1 / Geometri 1 Block 4 2022-2023

Teaching Assistant in Elementary School

January 2019 - Juni 2020

EduLab

I was teaching at different schools around Copenhagen, working with children struggling with mathematics and other courses.

PROJECT

A Calculation on Cobordism

July 2022

Bachelor Thesis, Advisor Andrea Bianchi

In my thesis i cover the theory of smooth manifold, vector bundles, characteristic classes and cobordisms. Then the oriented and unoriented cobordism rings are calculated using the Pontryagin-Thom construction. Lastly the classification of the cobordism rings is used to prove the Hirzebruch Signature theorem.

Project about stacks and descent

March 2023

Bachelor Thesis, Advisor Qingyuan Bai

In this project i worked on the theory of descent and stacks, showing that quasicoherent sheaves gives a stack, and getting introduced to the techniques of modern algebraic geometry.

SKILLS

Language

Danish (native), English (fluent), Chinese (beginner)

Programming

Python, F#, Javascript

Interests

Climbing, studying Chinese, in high school i participated in math and physics competitions. I also want to learn to juggle with 5 balls.