

STEFFAN SØLVSTEN

PhD Student of Computer Science at Aarhus University

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/steffan-soelvsten



Ambitious, versatile and hard-working PhD student of computer science and previous full stack developer with a deeper interest for *verification*, *algorithms*, *complexity theory*, and *logic and semantics*.

PROFESSIONAL APPOINTMENTS

PhD Student

Aarhus University

November 2019 – November 2024 Aarhus, Denmark

Integrated PhD in Formal Verification, advised by Prof. Jaco van de Pol. My research focuses on the development and optimisation of algorithms and datastructures for the verification and synthesis of Multi-agent Games.

Products of my research:

</> COOM: Cache-Oblivious OBDD Manipulation

A fully-fleshed BDD library implemented in C++ allowing one to construct and manipulate BDDs, even when these vastly outgrow the memory available.

Industrial Experience

Student Programmer

SCALGO

May 2019 – October 2019

Aarhus, Denmark

SCALGO brings cutting-edge massive terrain data-processing technology to market, build on more than two decades of research on I/O-efficient and geometric algorithms.

As a student developer my responsibilities was the development and maintenance of the SCALGO Live platform's frontend and middleware.

Software Developer

IT Minds

March 2018 – April 2019

Aarhus, Denmark

Consultant providing IT solutions, that improve and automate the client's workflow. Among my clients have been LEGO, where I was working full stack and was the main architect on the frontend Angular application.

I was the lead architect on the frontend of an internal project, where I succesfully mentored the new interns, providing feedback on their approaches to solutions and code quality.

EDUCATION

BSc in Computer Science

Aarhus University, Denmark

August 2015 – June 2018

Graduating from Denmark's most theoretical computer science bachelor's degree with a weighted average of 11.42 (A).

Bachelors Project in writing a compiler. Final grade: 12 (A+).

MSc in Computer Science

Aarhus University, Denmark

August 2019 – June 2022

Master's degree obtained as part of an integrated PhD. My choice of courses focused on *algorithmics* and *formal verification*.

Final grade on part A Exam: ? (?).

SKILLS

Interpersonal Skills

Teaching Consulting Public speaking

Technologies

C++ Rust \LaTeX SML / OCaml / ReasonML
Java / C# Python Git SQL
Spring Boot Twisted TypeScript Angular React

Theoretical Computer Science

Model Checking Formal Verification I/O Model
Algorithms Logic Semantics Game Theory
Complexity Theory Functional Programming
Proof Assistants Concurrency Distributed systems

Mathematics

Linear Algebra Algebra Mathematical Modelling
Mathematical Analysis

PUBLICATIONS

In order of publication (newest to oldest).

Hansen et al.: \exists R-Completeness of Stationary Nash Equilibria in Perfect Information Stochastic Games

LIPIcs:2020

• Kristoffer Arnsfelt Hansen and Steffan Christ Sølvsten. “ \exists R-Completeness of Stationary Nash Equilibria in Perfect Information Stochastic Games”. In: *45th International Symposium on Mathematical Foundations of Computer Science (MFCS 2020)*. Leibniz International Proceedings in Informatics (LIPIcs). 2020, 45:1–45:15. DOI: 10.4230/LIPIcs.MFCS.2020.45.

TEACHING

Teaching Assistant

Aarhus University

📅 March 2017 – Present

📍 Aarhus, Denmark

For a group of students I corrected their weekly assignments and organized their weekly face-to-face lessons that follow the exercises provided by the course coordinator.

Courses: Computability and Logic Algorithms and Datastructures
Regularity and Automata

Supervisor

Aarhus University

📅 June 2020 – August 2020

📍 Aarhus, Denmark

I have supervised two Bachelor students throughout a summer implementing Cache-oblivious algorithms in C++ for manipulation of Ordered Boolean Decision Diagrams.

VOLUNTEERING

I have been very active at the university outside of the studies. Below are some things I have volunteered for among other things

Kitchen Responsible

Regnecentralen, Aarhus University

📅 May 2017 – Present

📍 Aarhus, Denmark

Regnecentralen is a kitchen and social hub for students. I took care of practical everyday things, arranged events, created social media content, and am developing a full stack IoT solution to gate the access to the kitchen.

Tutor

Mat/Fys-Tutorgruppen, Aarhus University

📅 January 2016 – December 2017

📍 Aarhus, Denmark

Planning and delivering a warm welcome first years for their first semester at the University. This included both social and university related questions.

Being in the LaTeX group, I have been the main responsible to completely redo from scratch all code producing the layout and design of their yearly songbook.

Bartender

Fredagscaféen, Aarhus University

📅 May 2017 – Present

📍 Aarhus, Denmark

Computer Science's very own “Fredagsbar” at Aarhus University. I have been bartending two to four times every semester.

LANGUAGES

English

Fluent – IELTS Academic: 8.0 (2019)

Danish

Native

German

Native

REFERENCES

Prof. Jaco van de Pol

@ Aarhus University

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PhD Supervisor

Ass. Prof. Kristoffer Arnsfelt Hansen

@ Aarhus University

✉ arnsfelt@cs.au.dk

Supervisor of small project in game theory