STEFFAN SØLVSTEN

PhD Student of Computer Science at Aarhus University

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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:

</> Adiar: BDD Manipulation in External Memory

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

git : github.com/ssoelvsten/adiar/
📄 : ssoelvsten.github.io/adiar/

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*.

📄 Course Average: 12 (*A+*).
📄 Part A exam: ?.

SKILLS

Interpersonal Skills

Teaching   Consulting   Public speaking

Technologies

C++   Rust   LaTeX   SML / OCaml   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.: ∃R-Completeness of Stationary Nash Equilibria in Perfect Information Stochastic Games **LIPIcs:2020**

- Kristoffer Arnsfelt Hansen and Steffan Christ Sølvsten. "∃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 assingments 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 I/O efficient algorithms in C++ for manipulation of 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
✉ jaco@cs.au.dk

PhD Supervisor

Ass. Prof. Kristoffer Arnsfelt Hansen
@ Aarhus University
✉ arnsfelt@cs.au.dk

Supervisor of small project in game theory