Sarek Høverstad Skotåm

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EDUCATION

University of Oslo — GPA: 5.0/5.0
*MSc in Informatics. **Took 30 credits extra (one semester is 30 credits)**.* — *Aug. 2020 – Jun. 2022*

University of Oslo — GPA: 4.5/5.0
*BSc in Informatics. **Did 190 credits over 3 semesters vs the regular 180 over 6**.* — *Aug. 2018 – Jun. 2020*

PROJECTS

CreuSAT – A formally verified SAT solver | *Rust, Creusot* — Aug. 2021 – Jun. 2022
- As a part of my master's thesis, I developed a series of SAT solvers in **Rust**, which I then verified with **Creusot**.
- The thesis won the Norwegian Computing Center's **best thesis award**.
- The **most extensive use of deductive verification tools for verification of Rust code to date**[1].
- Implemented and verified the **DPLL** algorithm, as well as the **CDCL** algorithm with **clause analysis, clause learning, unit propagation**, **two watched literals** with **blocking literals** and **circular search**, **backtracking to asserting level**, the **VMTF** decision heuristic, **search restart**, **clause deletion** and **phase saving**.
- Currently **the fastest deductively verified SAT solver**.
- Held a talk about the project on RustVerify 2022, with good feedback.
- Substantial interest on Hacker News, lobste.rs and Twitter, amassing **over 500 stars** on GitHub as a consequence.

EXPERIENCE

Applied Scientist — Oct. 2022 – Present
Amazon Web Services — *London, United Kingdom*
- Member of the S3 Automated Reasoning Group, where I do model checking of **Rust** code.

Consultant / Developer — Jun. 2021 – Aug. 2021
Systek AS (consulting firm) / Elvia AS (largest power grid operator in Norway) — *Oslo, Norway*
- Investigated the potential of using technology to aid in the detection of rot in power masts. We developed an application using **Python**, **JavaScript**, **React**, **Node.js**, **Express.js**, **Google Cloud**, **Docker**, **Bash**, **uWebSockets.js** and **TensorFlow/Keras** which did collection of data with live feedback from an ML-model.
- Developed a 24 page report and held multiple talks internally about our findings and our developed solution.

Teaching Assistant / Course Developer / Examiner — Aug. 2019 – Jun. 2021
University of Oslo — *Oslo, Norway*
- TA in **Operating Systems** spring 2021, **Functional Programming** (**FP**) autumn 2020, **Logical Methods** spring 2020, and **Introduction to Computer Technology** autumn 2019. Course developer **FP** summer 2020.
- Held weekly seminars for up to 40 students and corrected assignments. Corrected exams autumn 2020.

PRIZES, MISC

- Won the Department of Informatics' (DOI) prize for **outstanding teaching in multiple subjects over multiple semesters**, as, to the best of my knowledge, the least experienced to ever do so.
- The **highest performing implementation ever** for home exam 1, and the **highest performing since 2015** for home exam 2 in Programming Heterogeneous Multi-Core Architectures, which is commonly regarded as **the most difficult course** at the DOI.
- Member of the board of the student organization Mathematics, Algorithms and Programming for Students (MAPS) 2020/2021, then leader 2021/2022. During my leadership, MAPS went from being nearly extinct to having the issue of **the largest classrooms available being too small for the amount of attendees**.
- Rank 2 Oslo / Rank 5 Norway on the competitive coding website Kattis.

TECHNICAL SKILLS

Proficient with: Rust, Python, C, Bash Git, Vim, VS Code, Linux
Familiar with: CUDA, ARM Neon, Kotlin, Java, C++, Docker, Google Cloud Platform, JavaSript, React, HTML, CSS, Node.js, Flask, Express, uWebSockets.js, Scheme, x86 Assembly, PostgreSQL

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[1] It should be larger than what is publicly available by a fairly large margin. There might exist non-public projects which are larger.