

Thomas Hybel

SOFTWARE DEVELOPER · SECURITY RESEARCHER

☎ (+45) 30 28 07 88 | ✉ tehybel@gmail.com | 🏠 thomashybel.com | 📱 tehybel | 🌐 tehybel

Education

Aarhus University

Aarhus, Denmark

M.S. IN COMPUTER SCIENCE

Aug. 2016 - Jun. 2018

- Focused on programming languages, program analysis, and cryptography
- Minored in mathematics

Skills

Fluent programming C, Python

Capable programming C++, Scheme, x86 & ARM assembly, SML, PHP, JavaScript, Solidity, Java, Bash, SQL

Software GNU/Linux, Vim

Natural languages English, Danish, Spanish (intermediate)

Experience

Aarhus University

Aarhus, Denmark

STUDENT PROGRAMMER

May 2014 - Sep. 2014

- Implemented standard library for the relational programming language RASMUS
- Ensured that standard library functions scaled to large datasets by picking appropriate algorithms

TravelMarket

Vejle, Denmark

WEB DEVELOPER

May 2013 - Jan. 2014

- Developed large parts of the front end for BedreBilist.dk, a website for taking theoretical driving lessons
- Performed security analysis of main company website, fixing multiple critical vulnerabilities

Extracurricular Activity

Capture The Flag security competitions

Various countries, Europe

CORE MEMBER OF TEAM TASTELESS

2011 - PRESENT

- Solved challenging problems in hundreds of CTF competitions
- Team ranked #8 globally in 2016
- Qualified for the DEF CON world finals in 2017
- Performed low-level binary exploitation and reverse engineering for the team

Projects

Compiler implementation

Aarhus, Denmark

BACHELOR PROJECT

Jan. 2016 - Jun. 2016

- Implemented a compiler from Tiger to x86 in Standard ML
- Wrote each stage from scratch, including lexing, parsing, semantic analysis, IR conversion, and code generation

Operating System implementation

Aarhus, Denmark

STUDENT PROJECT

May 2017 - Jan. 2018

- Implemented an x86 operating system from scratch in C
- Wrote code for booting, memory management, process management, concurrency, file system
- Implemented a graphics subsystem and adapted code to run on real hardware

Decompiler implementation

Aarhus, Denmark

MASTER'S THESIS PROJECT

Dec. 2017 - Jun. 2018

- Designed and implemented DSol, the first practical Ethereum smart contract decompiler
- DSol translates from EVM bytecode to Solidity, a high-level smart contract programming language
- Designed an intermediate representation suitable for translation of smart contracts
- Implemented program analyses, including expression propagation, dead-code elimination, and loop detection