Martin Hafskjold Thoresen

| 12. August 1993 | m@mht.wtf | +43 0677 627 02686 | Klosterneuburg, Austria |

Github: martinhath   LinkedIn: LinkedIn   SourceHut: ~mht   Website: mht.wtf

Summary — I like all things computing: deep and abstract algorithms; small and efficient software close to the hardware, elegant and intuitive developer tooling, reliable and robust programs; I am pretty much into all of it. I strive for a deep understanding of computer systems and enjoy communicating ideas through technical writing.

Experience

Computer Graphics Researcher   2019 — 2022
ISTA, Austria
- Developed interactive design tools for computation fabrication in OpenGL and WebGPU.
- Implemented a high-performance physically based simulator for soft materials in C++.
- Worked extensively with 3D-printing, molding, and programmable embroidery, as well as programmatically generated data for small-scale fabrication machines.

Scientific Intern   Jan. 2018 — Mar. 2018
ISTA, Austria
- Worked on my master's thesis co-supervised by Dan Alistarh.
- Developed a Rust library for statically typed memory management specialized for highly concurrent programs, and implemented common concurrent data structures using the library.

Applications Developer Intern   Summer 2016
Nordic Semiconductor ASA, Trondheim, Norway
- Developed an electron.js based app for management of Bluetooth mesh networks.
- Interfaced the application code and microcontroller using a bundled Python wrapper for interactive programming.

Applications Programmer Intern   Summer 2015
ARM Norway, Trondheim, Norway
- Developed and maintained internal tools for the Media Processing Group (MPG).
- Migrated a Perl script to Python for easier maintainability of extraction of ISA-related data from Verilog and SystemVerilog files.
- Developed a JS based database explorer for electronic parts backed by MongoDB.

Projects

Technical Blog   2014 —
https://mht.wtf/post/
Technical writing about computer science, programming, and related topics.
Highlights:
- "Efficient Simulation through Linear Algebra"   2022
- "A Neat Approximation Algorithm"   2021
- "Expanding TeX's \newif"   2021
- "Code Generation and Merge Sort"   2019

Education

Ph.D. Candidate, Computer Science   2018 — 2022 (not completed)
Institute of Science and Technology Austria, Klosterneuburg, Austria
Topic: Computational Fabrication with applications in soft robotics.
Advisor: Bernd Bickel

Master of Science, Computer Science   2013 — 2018
Norwegian University of Science and Technology, Trondheim, Norway
Specialization: Algorithms and HPC
Thesis title: "CMR: Concurrent Memory Reclamation"
Advisor: Magnus Lie Hetland

Exchange Student, Computer Science   Feb. 2017 — Aug. 2017
ETH Zürich, Zürich, Switzerland

Head of the guard by night, Private   Aug. 2012 — Jul 2013
Guard and Security, Norwegian Armed Forces, Rusta, Bardufoss, Norway
Responsible for nightly guard routines for seven guard soldiers.

TEACHING   **Teaching Assistant**   2021 — 2022
ISTA, Austria
Course: "Applied Algorithms and Data Structures".
- Helped teach graduate level applied algorithms to 45 students.
- Evaluated weekly code submissions from the students.
- Worked on infrastructure of a self-hosted instance of Kattis.

Student Assistant   2014 — 2015
IDI, Norwegian University of Science and Technology
- TDT4120 Algorithms and Data Structures.
- TDT4102 Procedural– and Object-Oriented Programming.

VOLUNTEERING   **Open Source**   2013 —
I contribute back to open source projects that I use through bug reports and code contributions. I have
code in projects including the Rust compiler, rayon, libigl, and the Zig compiler.

Developer   Aug. 2014 — Jun. 2018
Abakus Web Comittee, NTNU
- Member of the web comittee in Abakus, the student association for Computer Science and Communication Technology students.
- Development and maintenance of abakus.no, nyitrondheim.no, and internal projects.
- Guidance and supervision of new members of the group.

Developer   Aug. 2013 — Dec. 2016
Students Media in Trondheim, Trondheim
- Main developer of the Android app Barteguiden.
- Backend server programming in Node.js, and Linux technologies.
- Android app development in Java, and later migration to React Native.

SKILLS   **Programming Languages**
I have written a non-trivial amount and am competent with C, C++, Julia, Common Lisp, Python, Rust,
and Zig. I am familiar with, x86–64, Haskell, Java, and JavaScript.