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Markus Pettersson

Computer Science Student

Experience

2022–present **IT Consultant**, *Agreat*, Gothenburg

IT Consultant specialized in CI/CD automation and DevOps practices, with a sprinkle of Agile. I help teams enable their software developers to take complete ownership of their services.

Oct 2022–present **DevOps Engineer**, *Agreat*, Volvo Car Corporation, Gothenburg

As one of two members on the platform team at Volvo Cars' Digital Key solution, I enable both embedded engineers and cloud engineers alike to focus on their deliveries by automating repetetive and error prone tasks. During a single day I can go from soldering new cable harnesses needed for debugging CAN-busses to implementing and deploying Jenkins CI/CD pipelines, depending on what's needed. Not entirely unlike a technologically versed janitor.

Programming languages: Python, bash, Embedded C/C++ (Arduino)

Other: Jenkins

Sep 2022–Oct 2022 **DevOps & Software Architect**, *Agreat*, Hypocampus, Gothenburg

In close collaboration with Hypocampus, a digital learning platform for medical students, a tool for importing PDF-based exams to Hypocampus' interactive practice sessions was developed. I took responsibility for setting up and maintaining the CI infrastructure and code practices, which allowed the team of 5 new grads to focus on tackling the problem while keeping a rapid pace of development without fear of breaking things. First assignment during start up phase at Agreat.

Programming languages: Python

Other: Gitlab CI, Docker, mypy, pytest

2021 **Backend Web Developer**, *Tele Radio*, Gothenburg

Summer internship as a backend developer within the Business Software team at Tele Radio. During my stay, two new internal applications with a focus on automation and standardization of accounting and document management were developed using the Django web framework. These services were successfully deployed to Tele Radio's intranet. I also contributed to some old services through various patches.

Programming languages: Python (Django), Javascript

Other services used: AWS (ECS, S3), Docker

2020–present **Report Management System for truck drivers**, *Markus Pettersson*, Gothenburg

A mobile application with focus on ease for truck drivers was designed, developed and delivered through my then newly founded company. In collaboration with the owner of a small-sized truck driving company, we identified the need for a better Report Management System for reporting common errors which drivers could face during their day-to-day work. The app has been in use company-wide since it was launched. I taught myself how to launch an application on the Android and iOS platforms, as well as how to develop and interface with platform native code from a React Native application.

Programming languages: Javascript (React Native, Redux), Kotlin, Swift.

Other services used: Firebase, Google Play, App Store.

Education

2022–2022 **Master Thesis**, *Chalmers University of Technology*, Gothenburg

Sensitivity computation for user-defined functions in Differential Privacy systems. We used Haskell's advanced type system and type level programming to implement a minimal framework for doing efficient range analysis on linear queries. We benchmarked our solution by re-implementing the exponential mechanism in DPella's database solution, which in turn offers differential privacy guarantees.

Thesis available at `https://odr.chalmers.se/handle/20.500.12380/305877`

2020–present **M.Sc. Computer Science - Algorithms, languages and logic**, *Chalmers University of Technology*, Gothenburg

Computer Science is a master degree program with the main focus on the foundations in the science of programming. I am focusing my education towards compilers and programming language design, which heavily emphasises logic, reasoning and functional programming.

Spring 2020 **Bachelor Thesis**, *Chalmers University of Technology*, Gothenburg

Dynamically Recompiling Emulator. The thesis examined the possibility to retarget machine code compiled for a classic 8-bit processor (MOS 6502) to modern systems by leveraging libraries for compilation and optimizations from the LLVM compiler framework. A JIT-compiler was successfully developed and presented in May 2020.

Thesis available at `https://hdl.handle.net/20.500.12380/301970`

2017–2020 **B.Sc Software Engineering**, *Chalmers University of Technology*, Gothenburg

Certificates

2022 **Scrum Master Certification**, *Scrum Alliance*, Gothenburg

2 day course in Scrum, agile product development and group dynamics. Course was held by Crisp. Certificant ID **001412398** issued by Scrum Alliance.

Skills

Languages	Swedish (Native), English (Fluent)
Progamming Languages	Java, Javascript, Python, Haskell, Rust
Frameworks	React, React Native, Django, Javalin
Databases	PostgreSQL, Firebase, Redis
Other tools	git, Linux, Bash, Make, Docker, Github, Github Actions, Gitlab CI, LLVM, LaTeX.

Extracurricular activities

- **Rekryt D/IT**
  Rekryt D/IT is a society at Chalmers with the aim of reaching out to high school students and guide them in their choice of university programme. I worked with answering individual high school student's questions via online message correspondence throughout the school year 2020/2021. I also worked with arranging the booth for the programmes Data and Informationsteknologi at Chalmersdagen as well as multiple online-open house sessions for those interested in the programmes.
- **DatE-IT**
  DatE-IT is a labor fair for students of computer engineering, electrical engineering, software engineering, and medical engineering at Chalmers. I assisted with logistics during the construction of the show floor for the fair of 2021. I was the main contact person for the people representing Spark Vision, which included answering questions and making sure they got the most out of their time at the fair.
- **Driver's License**
  Yes.