



# Marcus Munch Grünewald

DATA SCIENTIST

✉ hello@marcusmunch.dk | 🏠 marcusmunch.dk | 📷 marcusmunch | 🌐 marcusmunch

*Data scientist with a background in microbiology*

The story goes that I got my first computer at about 10 years old — and never looked back since then. I've always loved finding patterns in complex systems, and picking up programming was therefore a no-brainer for me. "Hidden in plain sight" to me describes both microbiology and data science, and it therefore makes perfect sense to combine the two.

## Work experience

During my years at Statens Serum Institut, I have worked on expanding my data science skills to become greatly familiar with working in SQL databases as well as developing an R package for effectively keeping track of data over time.

Despite the academic team at TestCenter Danmark being my very first position after graduating, I was trusted with many responsibilities. The swiftly changing setting put on us by covid-19 taught me to keep my head calm in pressured situations and gave me a lot of invaluable experience.

### Real-World Science – Rare Disease & AT

DATA SCIENTIST

*Novo Nordisk*

*Feb 2024 –*

### Disease Dynamics and Forecasting, Epidemiological Research

DATA SCIENTIST

*Statens Serum Institut*

*May 2022 – Jan 2024*

- Pre-processing of data from national Danish registries for research and health surveillance purposes
- Consulting on strategies for optimising data pipelines
- Primary developer of an R package for managing data with slowly changing dimensions
- Managing user permissions in a smaller-scale SQL (Postgres) database
- Development of bash and Python scripts to standardise workflows
- Assisting in developing strategies for interfacing in a data warehouse context

### TestCenter Danmark

ACADEMIC EMPLOYEE

*Statens Serum Institut*

*Aug 2020 – Apr 2022*

- Development of a framework for efficient random checking of test results to assure quality
- Collecting ad hoc data to guide solutions for problems impacting production
- Providing support for round-the-clock analysis of up to 100.000 daily qPCR samples
- Fully automated collection and regular visualisation of key performance indicators

## PROGRAMMING EXPERIENCE

This CV was written in Rmarkdown, building individual sections from YAML files. The resulting PDF was built using pandoc on Linux. The source files are hosted on a GitHub repository which also builds my personal website, including this CV.

In summary, I am confident working with (among others):

- R, including
  - The tidyverse
  - Package development
  - Automated report generation with Rmarkdown
- Python
  - Scraping and text mining
  - Automating simple tasks such as file organising with minimal required input
- Git, including GitHub and GitHub Actions
- SQL
  - Postgres, MSSQL and the abomination that is SQLite
- Linux (Ubuntu), including bash

## Education

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The increasing sensitivity of techniques in biology and medicine combined with increased availability of computing power drive a large demand for knowledge of both areas. Because of this, I tailored my MSc in biology for high-throughput analysis and data automation.

### Chr. Hansen A/S, University of Copenhagen

#### MASTER'S THESIS

2018-2020

- Collaborative work between departments of Discovery and Bacterial Physiology
- Analysis and visualisation of data from high throughput screening using R
- Automation workflows for compilation and organising data from various sources

### University of Copenhagen

#### MSc BIOLOGY

2017-2020

- Bioinformatics of High Throughput Analyses
- Evolutionary Medicine
- Experimental Design and Statistical Methods in Biology
- Linux and Python Programming
- The Human Microbiome: Experiments

### University of Copenhagen

#### BSc BIOLOGY

2011-2016

- Food Microbiology
- Loading, Transport and Modelling of Pollutants in Aquatic Environments
- Paleontology
- Zoophysiology

### Greve Gymnasium

#### STX

2005-2008

- Music A
- Mathematics B
- Physics C

## Outside work

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When I need to untangle my mind after a day of data exploration, I thankfully have numerous ways of doing so. While I do enjoy fiddling with various small programming projects on my Raspberry Pi at home, I also enjoy music a lot, having both played drums in a number of bands as well as in student revues during my time at university, where I have also sung and directed.

I live in Østerbro, Copenhagen with my girlfriend and our two year-old daughter, who is about as fond of music as myself, and when I want to go completely off the radar, I enjoy few things more than a walk, talk or dance with her.