



# Marcus Therkildsen

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## *Curriculum Vitae*

### Education

- 2012–2016 **Master of Science**, *Aarhus University*, including half a year at Utrecht University, the Netherlands.  
Technical physics
- 2009–2012 **Bachelor of Science**, *Aarhus University*.  
Technical physics

### Master's Thesis

- Title *Groundwork for a New Data-Driven Formulation of a Simple Dynamic Wind Farm Model*
- Supervisor Professor Martin Greiner
- Description Groundwork for a new data-driven formulation of a simple dynamic wind farm model by analysing real wind farm data from the Nysted wind farm including extracting principal components to investigate wakes and meandering.
- Download Please feel free to have a look at [mtherkildsen.dk/files/Master.pdf](http://mtherkildsen.dk/files/Master.pdf)

### Experience

Vocational

Åvænget 66 – 8250 Egå

2016–Present **Embedded Software Developer**, TC ELECTRONIC, Aarhus.

Developing embedded software/firmware for various realtime audio products (guitar pedals), often playing a key part in solutions to complex problems as well as developing major parts of the embedded algorithms for some of the products.

**Programming languages:** C++, Python, C, ARM assembly, SHARC assembly, batch.

**Processors:** AVR32, SHARC DSP, ARM Cortex-M4, ARM Cortex-M7.

**Other:** Working with agile methods such as scrum, sprint, planning and retrospective. Working with FreeRTOS in a real-time multithreaded system.

**Detailed achievements:**

- Released products
  - Ditto+, multi track looper
  - Brainwaves, polyphonic pitchshifter
  - Quintessence, harmony pedal
  - SubNUp mini, octaver
  - Pipeline, tremolo
  - HyperGravity Mini, compressor pedal
  - Mimiq mini, doubler
  - Flashback 2, delay

2016 **Embedded Software Developer / Hacker**, NABTO APS, Aarhus.

Developed various application demos of the Nabto P2P framework as well as numerous hacking projects, incorporating the Nabto software into consumer products. The hacker projects helped build the Nabto community by posting detailed blogposts at [blog.nabto.com](http://blog.nabto.com).

**Programming languages:** C++, C.

**Processors/boards:** RTL8195AM(ARM Cortex-M3), Raspberry Pi, Alfa Hornet-U wifi router.

**Detailed achievements:**

- Developing
  - Implemented Nabto for a chinese Jorjin board (Arduino clone)
  - Implemented various smaller improvements to Nabto code base
- Hacking projects:
  - Hacked a Siemens coffee machine, enabling it to make amazing coffee ordered online
  - Hacked a Roomba, giving total remote control access to it using Nabto software

**Miscellaneous**

2014–2015 **Volunteer mentor**, AARHUS UNIVERSITY, Aarhus.

Helping exchange students in any way possible. This mostly entailed giving them a good welcoming to Aarhus by showing them around and introducing them to social events but it also included helping them with various personal problems. The students were mainly physics students.

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## Computer skills

Advanced C++, Python, MATLAB, CUDA, C, L<sup>A</sup>T<sub>E</sub>X  
Intermediate JavaScript (+jQuery), HTML, PHP, Bash, ARM assembly  
Basic C#, Fortran, LabVIEW, SHARC assembly

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Other DSP, unittest, Jira, Jenkins, Bitbucket, DevOps, Scrum, SVN, GIT

## Languages

Danish	Mothertongue	
English	Advanced	<i>Fluent, both verbally and in writing</i>
German	Basic	<i>OK understanding</i>
Spanish	Basic	<i>Basic words and phrases only</i>

## Interests

- Programming
- Hacking
- Renewable energy
- Guitar

## Examples

- August, 2016-Present **Dokk1info**, [DOKK1INFO.DK](http://DOKK1INFO.DK).  
I created a book finding tool for the largest public library in Scandinavia, Dokk1. The staff at Dokk1 shared the site and set up a demo screen at the library.
- 2015-Present **Personal website**, [MTherkildsen.dk](http://MTherkildsen.dk).  
My personal website which I use to express my interest in programming and data analysis, while also acting as a digital record of my improvements in my fields of interest.
- 2014-Present **Github account**.  
All code I want the world to see can be located at my github account <https://github.com/MarcusTherkildsen>
- May, 2015 **NavNav**, [NAVNAV.DK](http://NAVNAV.DK).  
Together with two friends, I build a tool for navigating the Navitas building at Aarhus University. Since launch, we have helped students navigate Navitas approximately 100000 times. Please see [navnav.dk/om](http://navnav.dk/om) for updated and detailed stats.
- 2014-2015 **Founder**, [TESTRING](http://TESTRING), Aarhus.  
While studying I started my own company, called TeString, where I used my physics education to develop a new guitarpedal. Please see [testring.dk](http://testring.dk) for more information.