



Tobias Engelhardt Rasmussen

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Born 2 June 1995, Aarhus, Denmark

PROFILE

Data Scientist with a PhD degree and a strong big interests in statistics, machine learning, data analysis, optimization, and generative AI. I believe my passion stems from the versatility and applicability of data sciences, and I believe that understanding and using data is key to solving many problems in the world. I am hard-working and eager to acquire new knowledge and skills.

WORK EXPERIENCE

November 2024 – present

Data Scientist

Banedanmark, Analyse og Prognoser (Trafik)

- Developing and maintaining machine learning methods used for prediction of e.g. the punctuality of the trains on the Danish rail network.
- In this job I have experienced the development of big machine learning models as part of a team (MLOps) and how to manage big datasets from many different sources.

September 2021 – present

PhD Student – Statics, Machine Learning, and Data Analysis

Department of Applied Mathematics and Computer Science (DTU Compute)

Danmarks Tekniske Universitet (DTU), Kgs. Lyngby, Denmark

- The goal of my PhD education is to assess the possibility of applying machine learning, optimization, and data analysis to optimize field service management of broadband networks. The project is in collaboration with TDC (Tele Danmark Communications) that is the biggest provider of digital infrastructure in Denmark
- My focus area was trying to detect/locate errors in the network, by learning representations of multiple time series gathered at different locations in the network.
- During my studies I also worked as a teaching assistant in courses in probability theory and statistical modeling. Additionally, I carried out administration tasks and took courses myself including for instance representation learning for graphs, deep learning, and probabilistic modeling.

March 2021 – August 2021

Research Assistant at DTU Compute

Department of Applied Mathematics and Computer Science (DTU Compute)

Danmarks Tekniske Universitet (DTU), Kgs. Lyngby, Denmark

- Working alongside researchers, helping with both conducting research and doing consulting tasks for real-world problems. Among others, the work tasks included both doing statistics on questionnaires and developing an AI for use in the Danish health care system.
- This job has improved my understanding of how to conduct research responsibly and how to communicate my findings to a non-technical audience.

EDUCATION

January 2023 – April 2023

External Research Stay – Duke University, NC, USA

Department of Computer Science

Duke University, Durham, North Carolina, USA

- My stay at Duke University introduced me to the American research community in which I carried out experiments with both supervised and unsupervised representation learning for multivariate time series.

2019 – 2021 **Master of Science – Mathematical Modelling and Computing**

*Department of Applied Mathematics and Computer Science (DTU Compute)
Danmarks Tekniske Universitet (DTU), Kgs. Lyngby, Denmark*

- My master's education consisted of learning advanced methods in mathematical modeling, analysis of data, and development of software with real-world applications in mind. The education has given me, among others; statistical tools for analyzing data, tools in operations research, the ability to work with modern computer equipment, and knowledge of how to handle big data.
- In my master thesis "*Evaluation of synergistic effects of tensor decomposition methods within (deep) neural network applications*" I attempted to speed up the evaluation of a convolutional neural network using tensor decomposition.

2015 – 2019 **Bachelor of Science – Mathematics and Technology**

*Department of Applied Mathematics and Computer Science (DTU Compute)
Danmarks Tekniske Universitet (DTU), Kgs. Lyngby, Denmark*

- My bachelor's education consisted of learning basic mathematical methods and theory in order to use mathematical modeling to solve real-life problems. During my education, I also learned how to program in various languages and how to handle data.
- In my bachelor thesis "*Automated blood flow analysis in connection with malaria*" my partner and I tried to automatically analyze the flow of red blood cells using a mixture of image analysis and operations research.

August – December 2017 **Exchange Semester – McGill University**

McGill University, Montréal, Québec, Canada

- With a desire to be challenged I chose McGill University due to the high level of studies, and due to Montréal being a global hub for artificial intelligence. My semester abroad has made me more open-minded, independent, and confident.

SKILLS

Programming and development Experience with both functional and object-oriented programming in a variety of languages. I have much experience in Python, R, MATLAB, and Java, while I have some experience with C. I have experience with MLOps in Microsoft Azure and both Pytorch and Tensorflow for implementing machine learning models. In terms of query languages, I have some experience with SQL.

Languages

- Danish – Native
- English – Full professional
- Portuguese – Conversational

Personal skills Overall I see myself as a happy and open-minded person who has a natural interest in many things. Also, I consider myself to be:

- Good at working together with other people.
- Positive and easy-going
- Striving for quality in the things I do

ADDITIONAL INFORMATION

Hobbies and Interests

Curling

- I have been playing curling since 2007, which has made me the Danish junior champion, and allowed me to represent Denmark at the European Championships in 2018 and 2019, and at the junior World Championships in 2016.
- From 2018 to 2023, I volunteered as the treasurer of the Danish Curling Association where I was responsible for the economy and handling big budgets.

Sailing

- My partner and I own a sailing boat that we enjoy spending time sailing, taking care of, and relaxing on.