

# Tobias Engelhardt Rasmussen

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Born 2 June 1995

## PROFILE

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I am a passionate PhD student with big interests in statistics, machine learning, and data analysis. 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

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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. Among others, the work tasks included both doing statistics on questionnaires and developing an artificial intelligence for use in the danish health care system.
- This job have improved my understanding of how to conduct research responsibly and how to communicate my findings to a non-technical audience.

February 2017 – December 2020

### Teaching Assistant – Statistics and Programming

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

- Teaching assistant in the courses "02102 Introductory Programming", "02323 Introduction to statistics", and "02402 Introduction to statistics" multiple times while studying myself. The work tasks included managing weekly tutorials and grading mandatory projects in the courses.
- Occupying this position of responsibility improved my ability to manage my time effectively.

January 2016 – December 2016

### Mathematics Tutor

*My Academy, Copenhagen, Denmark*

- Tutoring high school students in high school level mathematics and prepare for important exams.
- This experience have helped me clarify how I learn personally.

## EDUCATION

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September 2021 – present

### Doctor of Philosophy – 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 using machine learning and data analysis to improve field service management of broadband networks. The project is in collaboration with TDC (TeleDanmark Communications) that is the biggest provider of digital infrastructure in Denmark
- My focus area is 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 work as a teaching assistant in courses in probability theory and statistical modelling. Additionally, I carry out administration tasks and take courses myself including for instance representation learning for graphs, deep learning, and probabilistic modelling.

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 education consisted of learning advanced methods in mathematical modelling, analysis of data, and development of software with real world applications in mind. The education has given me, among others; statistical tools for analysing data, tools in operations research, the ability to work with modern computer equipment, 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 speeding 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 education consisted of learning basic mathematical methods and theory in order to use mathematical modelling to solve real-life problems. During the 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 analyse 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**

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<b>Programming skills</b>	Experience with both functional and object-oriented programming in a variety of languages: <ul style="list-style-type: none"><li>• Very experienced:<ul style="list-style-type: none"><li>– Python</li><li>– R</li><li>– MATLAB</li><li>– Java</li></ul></li><li>• Somewhat experienced:<ul style="list-style-type: none"><li>– C</li></ul></li></ul>
<b>Languages</b>	<ul style="list-style-type: none"><li>• Danish – Native</li><li>• English – Full professional</li><li>• Portuguese – Conversational</li></ul>
<b>Personal skills</b>	Overall I see myself as a happy and open-minded person that has a natural interest in many things. Also I consider myself to be: <ul style="list-style-type: none"><li>• Good at working together with other people.</li><li>• Positive and easy-going</li><li>• Striving for quality in the things I do</li></ul>

**ADDITIONAL INFORMATION**

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<b>Sports</b>	Curling <ul style="list-style-type: none"><li>• I have been playing curling since 2007, which have made me 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.</li><li>• Since 2018 I have been volunteering as the treasurer of the Danish Curling Association where I have the responsibility of the economy and handling big budgets.</li></ul>
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