# CV - Hannah-Marie Martiny

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## EDUCATION & PROJECTS

**MASTER OF SCIENCE | TECHNICAL UNIVERSITY OF DENMARK | 2017 – AUGUST 2019 (EXPECTED)**

- Major: Bioinformatics and Systems Biology, focusing on Deep Learning applications
- Thesis project (ongoing): Predicting Recombinant Gene Expression in Bacillus using Deep Learning Techniques
    - Applying common methods in deep learning such as convolutional and recurrent neural networks to predict whether a gene from one organism can be expressed in a *Bacillus* host. The project work is carried out with the framework PyTorch in Python and done in collaboration with Novozymes A/S.
- Project: The Language of Life - applying deep learning methods to predict amino acids in protein sequences. GitHub repository: https://github.com/mari756h/The_unemployed_cells
    - Project started as part of the DTU course 02456 Deep Learning E18, where we applied word2vec methods to protein data. Continued in January 2019 with applying convolutional neural networks for text classification to the same protein data.
- Project: the iGEM competition 2018 – Creating habitable areas on Mars with fungi
    - Participated in the world largest synthetic biology competition, held annually in Boston, with more than 6000 participants from all over the world.
    - Worked on a program that simulates hyphal growth and created graphics for our wikipage with Adobe Illustrator and Photoshop.
    - Team page: http://2018.igem.org/Team:DTU-Denmark
- Project: Prediction of cleavage sites in polyproteins from picornaviridae
    - Created neural networks to predict the sites in Python with scikit-learn.

**BACHELOR OF SCIENCE | TECHNICAL UNIVERSITY OF DENMARK | 2014 – 2017 | GPA 9.02**

- Major: Biotechnology
- Bachelor project: Application of ODE models to investigate transcription, translation RNA and protein degradation rates | Completed in May 2017 – grade: 12.
    - Data analysis and parameter fitting done in R.

**ERASMUS EXCHANGE | UNIVERSITY OF ABERDEEN, SCOTLAND (UK) | FALL SEMESTER OF 2016**

- Deparment: School of Biological Sciences and School of Medical Sciences.

**HIGH SCHOOL (GYMNASIUM) | VIRUM GYMNASIUM | 2011 - 2014**

- Major subjects: Biotechnology A and Mathematics A. Minor subject: Physics B

# WORK EXPERIENCE

**STUDENT ASSISTANT | NOVOZYMES A/S | JULY 2017 – NOW**

- Working in the Advanced Analytics team, belonging to the area of Digital Transformation. The team consists of data scientists and data engineers.
- Have currently been involved with cleaning and extracting data of various formats including text mining and fermentation data. Tasks have also included writing various documentation for how to code and assisted in projects with modelling and building small applications. Programming has been done in both R and Python.

**TEACHING ASSISTANT | TECHNICAL UNIVERSITY OF DENMARK | 2017 | COURSE: 10050 Model Physics**

- The main task is to aid the students during group exercises with any problem they might have regarding the course material. The help can either be done by helping them indivudally or by doing a walkthrough of the problem at the blackboard with the whole class.

**STUDENT ASSISTANT | UNILABS A/S COPENHAGEN | JUNE 2013 – AUGUST 2017**

- The general task is to assist different department with varying tasks. The program handling all tasks related to data is called ClinAxys. The departments I was part of included:
    - Unilabs International – handling of incoming samples, ordering which analyses the laboratory shall run on samples, registration of patient data into ClinAxys. Control check and amending of entered patient data and ordered analyses.
    - Drug Development Services – handling and registration of incoming blood samples into ClinAxys. Controlling entered data and doing statistical analysis of those. Packing sample kits to be send to customers.

# QUALIFICATIONS

**SOFTWARE**

- R – skills in modelling and graphical visualizations.
- Python – worked with machine learning in scikit-learn, web scraping with bs4, data cleaning and processing with NumPy and Pandas, visualizations with Matplotlib, Bokeh and Plotly, deep learning applications in PyTorch and other commonly used tools within the field of data science.

**AWARDS AND COMPETITIONS**

- 2nd place in Copenhacks 2018, a hackathon hosted in Copenhagen. Created a command line tool for plotting gene alignments. GitHub repo: https://github.com/hmmartiny/Microbesoft
- Bronze medal in iGEM 2018 with the project: Creating habitable areas on Mars with fungi

**VOLUNTARY WORK**

- Member of the Danish Guide and Scout Association in the scout group 1. Holte from 2003 to 2018 and spent the last years as a group helper.
- Guard Leader at Roskilde Festival 2013 as part of roskildevagt.dk
    - The job was to manage a team of festival guards that walked around at the camping site. The tasks included rotating the job schedule for the festival guards and being responsible for the security of the festival guards during any emergency in cooperation with a Safety Officer from the festival management.