

## CONTACT



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[Mads Møller](#)



[GitHub Profile](#)



[GitLab Profile](#)

## EDUCATION

Master's degree in:  
**Mathematics & Business Administration**

GPA: 11.8

Copenhagen Business School

Sep 2021 - May 2023

Bachelor's degree in:  
**Mathematics & Business Administration**

GPA: 10.8 (2nd highest)

Copenhagen Business School

Sep 2018 - Jun 2021

## SOFT SKILLS



Critical Thinking



Time Management



Project Planning



Communication



Team Player

# MADS MØLLER

MACHINE LEARNING ENGINEER

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## CAREER OBJECTIVE

I am a motivated machine learning engineer with a motivation in developing products and services with impact. I specialize and have an interest in classic machine learning, NLP, reinforcement learning, software development, DevOps, MLOps, IoT and cloud native applications.

My core competences lies within the entire machine learning life-cycle, from where I have many skills to draw on for different areas of need. When I develop and productionize ML products and services I focus on the software architecture, reliability, maintainability and monitoring.

I am eager to develop usable software products. Personally it is important that I know why and what I am developing to have a focus on how my work is going to impact/help customers achieve their goals.

I have a large interest in Large Language Models (LLM's) and have been the main developer of what might be the first big launch of an internal chatbot using Azure OpenAI services + Azure Cognitive Search in Denmark.

From experience within consulting I have found that team work, communication and best practices are essential keys in a great product outcome.

## CODING SKILLS

Python	<div><div></div></div>	9/10
VBA	<div><div></div></div>	8/10
SQL	<div><div></div></div>	7/10
R	<div><div></div></div>	7/10
C++	<div><div></div></div>	6/10
Shell	<div><div></div></div>	5/10

## CONCEPTUAL SKILLS

Machine Learning	<div><div></div></div>	9/10
NLP	<div><div></div></div>	8/10
Reinforcement Learning	<div><div></div></div>	8/10
Mathematical optimization	<div><div></div></div>	8/10
Algorithms	<div><div></div></div>	7/10
Test-driven development	<div><div></div></div>	7/10
Software architecture	<div><div></div></div>	6/10

## DEVOPS AND CLOUD SKILLS

Docker	<div><div></div></div>	8/10
GitHub actions	<div><div></div></div>	8/10
GitLab CI/CD	<div><div></div></div>	8/10
Azure DevOps	<div><div></div></div>	7/10
Azure Cloud	<div><div></div></div>	7/10
Linux	<div><div></div></div>	6/10
GCP	<div><div></div></div>	4/10

## EXPERIENCE

### Machine learning engineer - consultant

*KPMG AI NewTech (2021-Now)*

My current position as a full-time machine learning engineer in the Machine Learning & Quantum team entails numerous concepts within the entire machine learning life-cycle. I have been responsible for multiple different client software products in my time in KPMG. My favorite product is a custom chatbot I have developed for Radiometer (A large firm who produces blood-analyzers). Here, I created a chatbot based on ChatGPT (using Azure OpenAI services) and a function such that they can chat with their own internal data (using Azure Cognitive Search) . The solution is available for all employees globally within the firm. The case is public [here](#).

### Junior machine learning engineer - consultant

*KPMG AI NewTech (2021-Now)*

My student position in KPMG also entails numerous concepts within the entire machine learning life-cycle. my top three client projects are:

(1) a fraud-detection optimizer (decision boundary optimization), which can help prioritize fraudulent transactions.



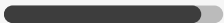

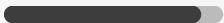



(2) a deep learning based application which aggregates, assigns topics and summarizes articles from the internet and presents it in a frontend to the end-user.

(3) Mail-distribution application, with a frontend for easy configuration, can be used to train a machine learning model which automatically forwards emails to the correct mailbox.

### Concepts within the work:

- Linux (main development OS)
- Software development (using Python, Docker & Kubernetes)
- API development
- Scraping
- Data storage and database management
- Test-driven development
- Scrum workflow
- Developer Operations CI/CD
- Cloud infrastructure

## RELEVANT PYTHON PACKAGES

Sklearn		9/10
Tensorflow		8/10
PyTorch		7/10
XGBoost		9/10
FastAPI		9/10
Streamlit		9/10
MLFlow		7/10
Transformers		8/10
SpaCy		8/10

### Co-founder and consultant

*Solutionz4U (2020-2021)*

In Solutionz4U we had a goal of easing the work companies make in Microsoft Excel by selling full-automatic process workflows made in VBA and Excel applications. Since I lost interest in Excel automations I am not engaged in this anymore, but still has a passive income from a subscription product which customers are still paying for on a yearly basis.

### Instructor

*DJØF (2019-2022)*

My instructor (teacher) position at Djøf consisted of developing, presenting and evaluating courses within Python, Linear Algebra, VBA and Microsoft Excel. In total I had 8 different courses on both beginner and advanced level. During the period I held 80+ courses for more than 2400 students.

#### Concepts within the work:

- Programming (Python, VBA, R)
- Debugging and investigation
- Communication

### Junior Consultant

*IUM Denmark (2018-2020)*

My position at IUM encapsulated a role within a small data science/analytics team where my role involved analyzing media data for our clients and automating workflows and processes interna.

#### Concepts within the work:

- Data Engineering (SPSS, Alteryx)
- Database management
- Data analysis (VBA, SPSS, Excel)
- Result presentation

# PERSONAL PROJECTS

## **Mathematical Analysis of transformer models for text classification**

*Master Thesis - CBS (Jan 2023 - May 2023)*

My master thesis had a mathematical focus on how the transformer architecture (large language models) works and why they are the current SOTA model architecture within NLP. I wrote my master thesis in collaboration with a company where I designed a RoBERTa model in combination with a XGBoost model which automatically can distribute emails to the correct inbox with an accuracy of 96% and a model coverage of 87%.

## **Predicting the stock market using deep neural networks**

*Bachelor Project - CBS (Feb 2020 - Jun 2020)*

My bachelor project had a mathematical focus on deep neural networks and how they can be used to predict the stock market. Specifically I investigated the performance for RNNs and LSTMs and how they can be used to predict the returns of a stock. The main model was developed in Tensorflow.

## **Template ML application**

*Personal Project (Apr 2021 - Now)*



[GitLab repo](#)

This repo acts as a vanilla repo for my personal machine learning software applications. The repo is in constant development since it gets extended every time I come up with a feature which is always nice to have in a project. It is a full-stack software product, which consists of a PostgreSQL database, an API (using FASTAPI), a frontend website (using streamlit), a Jupyter server (for testing). All the components runs as docker containers and in development it can easily be spinned up using docker-compose.

### **Concepts within the work:**

- Software architecture/stack
- DevOps
- REST api usage and schemas

## Cinema Scraper

*Personal Project (Jan 2022 - Apr 2022) - Archived*

 [GitLab repo](#)

This service is a web scraping application. It scrapes [kino.dk](#) where it scrapes every 5 minute, such that it scrapes how many seats there has been sold for every show in Denmark. It runs as a docker-container and can be deployed to any cloud provider. The value of the project was competitor surveillance for the companies owning the cinema's in Denmark. No business case was found hence the project has been archived.

### Concepts within the work:

- Web scraping
- Docker

## Mailbox sorter

*Personal Project (Sep 2022 - Nov 2022)*

 [GitLab repo](#)

The idea behind this project was to make a general application where if a company has a main-email, where it receives emails, which needs to be distributed to other emails (departments) the tool can do it for them. Using a machine learning model the application can learn which incoming emails should be distributed to which departments. I am now making this project for KPMG instead of it being a personal project. The repo is therefore not beautiful, but it consists of a login-based streamlit frontend and a backend.

### Concepts within the work:

- Same as template ML application

## Grocery shopping

*Personal Project (Sep 2022 - Nov 2022)*

 [GitHub repo](#)

This service is a simple web scraping application. You can feed the app with a receipe from [HelloFresh](#) and then it puts the groceries required into a basket for you on [nemlig.com](#)