Frederik Boe Hüttel
Deep learning | Machine learning | Researcher | Engineer

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I am currently researching methods for intelligent tracing of infectious diseases in hospitals and nursing homes, and I am always looking for problems that are worth solving!

I am highly interested in the research of applied machine learning. I work within the field of deep learning using complex data-structures, but I am also confident with traditional statistics and machine learning models.

Throughout my education i have been exposed to different research areas within the field of reinforcement learning and unsupervised learning. This exposure have granted me the opportunity to engineer some of the cutting edge models in contemporary deep learning, such as Auto-Regressive Flow models and Bayesian Neural Networks

🎓 EDUCATION

July 2020
September 2018

MSc Eng , MATHEMATICAL MODELLING AND COMPUTING , Technical University of Denmark
> Thesis : Exoplanetary Spectra Analysis - A Deep Learning Approach
> Main focus : Deep-, machine- and statistical learning
> Relevant courses : Deep Reinforcement learning, Deep unsupervised learning, Deep learning, Advanced Machine learning, Model-based Machine learning and Computational data-analysis
> Other courses : Advanced time series analysis, Computational tools for data science, Multivariate statistics, High performance computing, Introduction to Reinforcement learning

June 2018
September 2015

BSc, SOFTWARE TECHNOLOGY , Technical University of Denmark
> Thesis : Web-application for data annotation using Neural Networks
> Main focus : Applications of machine learning algorithms
> Relevant courses : Introduction to Machine learning and data-mining, Algorithms and Data structures, Advanced Image analysis , Time series analysis
> Other courses : Parallel programming, Software Engineering, Computer Science Modelling, Functional programming.

💼 PROFESSIONAL EXPERIENCE

Now
August 2020

Research Assistant , DTU COMPUTE , Technical University of Denmark
> Researching methods for intelligent tracing of infectious diseases in hospitals and nursing homes
> Participated as part of the consulting team at the statistics and data-analysis department
Research | Consulting | Python | Social network analysis

July 2020
January 2019

Analyst , ADVANCED ANALYTICS AND OPTIMISATION, Markets & Bioenergy - Ørsted
> Implementing advanced statistical/machine learning models used for energy trading
> Setup of Azure DevOps machine learning pipelines
> Developed R-shiny application to visualise different forecast
R | R-shiny | HTML | CSS | AWS | Azure DevOps | Forecasting

December 2018
July 2017

Data Scientist , TECHNOLOGY DEPT., Trustpilot
> Statistical analysis of data from reviews to business segmentation
> Creation of dashboard for internal use
> Implemented production code - both as R shiny apps and Python Airflow DAGS
> Used SQL to retrieve data from Google BigQuery database systems
Python | R | SQL | R-shiny | AWS | Google BigQuery | Airflow | Text-mining

🖥 Research Projects

Deep generative models for generation of stellar spectra   2019
Course : *Deep Unsupervised Learning*
Applied Varitational inference to generate stellar spectra used for generation of synthetic light spectra from stars. In order to apply Varitational inference for the spectra, state of the art *Varitaional auto-encoder* methods was implemented in pytorch

`Python` `Pytorch` `Deep learning` `VAE`

Bayesian Neural Networks for exploration in Deep Q-learning   2019
Course : *Deep reinforcement learning*
Implemented Bayesian neural networks to use the inherent uncertainty in Bayesian neural networks for a better exploration of Markov decision processes compared to ordinary Deep Q-learning

`Pytorch` `Python` `OpenAI Gym` `Reinforcement learning`

Rapid Coronavirus tracing to prevent spread of infection   2020-2021
Research Assistent at the Techincal University of Denmark
Researching methods for intelligent tracing of infectious diseases in hospitals and nursing homes, using hand sanitising data. Funded by the innovation fund in collaboration with SaniNudge, Aarhus University Hospital and Sølund Care center.

`Social network analysis` `Python`

☰ Skills

Deep Learning familiarity's	Auto-regressive Flows, General adviserial networks, Masked Auto-encoders, Variational Auto-encoders, Transformers, Residual networks
Deep Learning application	Sentiment Analysis, Natural language Processing, Image analysis, Reinforcement learning
Datatypes familiarities	Time-series, Images, Spectroscopy, Text, Video
ML Frameworks and Libraries	Pytorch, Tensorflow, scitkit learn
Programming Languages	PYTHON, R, C/C++, SQL, Java, JavaScript, nodeJS, HTML, CSS
Sports and Leisure	Golf, Badminton, Football, Snowboard
Miscellaneous	Completed courses on Public speaking, Presentations techniques and Group dynamics

🎓 Honors, Awards and Noteworthy Achievements

2019	Runner-up at *Boston Consulting Group - Gamma* hackathon
2019	Speaker at *NEURAL deep learning event* on Reinforcement learning
2016	3'rd place winner of Oi-X Big-data competiton at the Danish Technical Univeristy (10000kr)

🎓 Teaching

December 2018 September 2017	**Teaching Assistant, DTU Compute , Technical University of Denmark** ❯ **Courses :** *"Introduction to Machine learning and data-mining"* and *"Introduction to statistics"* ❯ Teaching students to implement different regression and classification models in Python ❯ Teaching students fundamentals of statistical models, mixture models and neural networks. `Python` `R` `Scikit learn`