Frederik Boe **HÜTTEL**

Deep learning | Machine learning | Data science | 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 particularly in the use of unsupervised learning models. I work within the field of deep learning using complex data-structures (Images, Text, etc.), 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

Now – 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
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Python

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

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 | ChartIO | Airflow

set

Publications

2007 Master STIC Professionel filière MBDS de l'Université de Nice Sophia Antipolis (Master Informatique spécialité Multimédia, Base de Données et intégration de Systèmes)
2005 Licence Sciences et Technologies, Mention Informatique, de l'Université de Nouvelle-Calédonie
2004 BTS Informatique de Gestion option administrateurs de réseaux
2000 Baccalauréat Scientifique option Mathématiques

Skills

Deep Learning familiarity's	Auto-regressive Flows models, 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, Light spectra, Text, Video
ML Frameworks and Libraries	Pytorch, Tensorflow, scitkit learn
Programming Languages	PYTHON, R, C/C++, SQL, Java, JavaScript, nodeJS, HTML, CSS
Others	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)

Projects

Deep generative models for generation of stellar spectra — 2019

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

Pytorch | Deep learning | VAE

Bayesian Neural Networks for exploration in Deep Q-learning — 2019

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

Web-application for data annotation using Neural Networks — 2018

Bachelor Thesis
Implemented object detection in videos using the YOLO - Convolutional neural network. Dynamically trained the neural network while users used the application in order to help annotation.

Tensorflow | PYTHON | Flask | JavaScript | nodeJS | CSS | HTML

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

References

Jan Hvidberg
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Assistant Professor, DTU
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Morten Mørup
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