Nicklas **Hansen**

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Research interest

I am highly interested in research on self-supervised learning, semi-supervised learning, transfer learning as well as their applications in particularly reinforcement learning, audio and computer vision.

I want to make artificial intelligence available to a broader audience through research and open source projects.

Education

University of California, Berkeley

Berkeley, CA Visiting Graduate Student Spring 2020

A semester devoted to special topics in deep learning as well as data-driven innovation. Recipient of the Innovation Fund Denmark and Spar Nord Fonden Fellowship.

Technical University of Denmark

Kongens Lyngby, Denmark M.Sc. Mathematical Modelling & Computing GPA: 10.2 (-3 to 12) Feb 2019 -

Largely focused on special topics in deep learning such as deep reinforcement learning, deep unsupervised learning, optimization for deep learning and research on novel applications of deep learning.

Technical University of Denmark

Kongens Lyngby, Denmark B.Sc. Software Engineering GPA: 8.2 (-3 to 12) Sep 2015 - Dec 2018

Courses in computer science, statistics, machine learning, Al and project management.

Nanyang Technological University

Singapore, Singapore Fall 2017 **Exchange Student**

Courses in computer vision, cryptology and large-scale software engineering.

Professional experience

Technical University of Denmark

Kongens Lyngby, Denmark **Teaching Assistant** Fall 2019

02456 Deep Learning and 02454 Introduction to Cognitive Science.

I taught 6 hours a week, developed course material, corrected assignments and supervised 50+ students' projects on the topics of deep reinforcement learning and self-supervised learning.

Retune DSP Kongens Lyngby, Denmark Feb 2019 -

Assistant Software Developer

I help a team of engineers build and maintain deep learning pipelines for embedded voice control systems.

Raffle.ai Copenhagen, Denmark

Machine Learning Intern

Summer 2019

I reimplemented the SyntaxSQLNet cross-domain text-to-SQL parser in PyTorch and improved its accuracy by 12%. https://github.com/raffle-interns/SyntaxSQLNet

Nordic Transition Gentofte, Denmark Lead Software Developer Iul 2017 - Dec 2019

I developed and maintained a GDPR-compliant data management and analysis platform for the HR industry.

Summer schools

Åbo Akademi

Turku, Finland Development of high-assured autonomous systems Aug 2018

Tallinn Technical University High-assured autonomous systems Tallinn, Estonia Jun 2018

Certificates

Dansk Standard

ISO21500 Guidance on Project Management

Copenhagen, Denmark Jan 2018

Current projects

Short Term Blood Glucose Prediction Based on Continuous Glucose Monitoring Data

To be submitted for IEEE Engineering in Medicine and Biology Society by Jan 2020

A. Mohebbi, A. Johansen, N. Hansen, P. Christensen, M. Jensen, J. Tarp, H. Bengtsson, M. Mørup

To be submitted

Open source contributions

Optimization in deep learning

Dec 2019

Collection of recent deep learning optimization algorithms

https://github.com/nicklashansen/neural-net-optimization

Oct 2019

How to build RNNs and LSTMs from scratch with NumPy

Educational material on recurrent neural networks (100+ stars)

 $https://github.com/nicklashansen/rnn_lstm_from_scratch$

Oct 2019

Minimal Neural Architecture SearchA minimalistic NAS implementation for educational purposes (30+ stars)

https://github.com/nicklashansen/minimal-nas

Asynchronous Advantage Actor-Critic (A3C)

Implementation and ablation study of A3C on common RL environments

https://github.com/nicklashansen/a3c

Jun 2019

Game development

Atlas, a battleground for the Starcraft II World Championships

Used in GSL, GSTL, IPL, DreamHack, Assembly and more (200k+ spectators) https://tl.net/forum/sc2-maps/388872-2-df-atlas Dec 2012 - June 2013

Technical skills

Programming

Python, Matlab, SQL, C#, C++, C, Java, JavaScript

Deep Learning

PyTorch, TensorFlow

Others

Linux, Git, Azure, AWS, Docker, Conda, Jupyter Notebook, Google Colab, Latex

Languages

Danish Native

English Professional

German Basic