

Nicklas Hansen

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Research interest

I am highly interested in research on the generalization and robustness of deep learning systems, particularly in connection with self-supervision, transfer learning and optimization. I work with reinforcement learning, audio, computer vision and biomedicine. I strive to make artificial intelligence available to a broader audience through research and open source projects.

Education

University of California, Berkeley

Visiting Graduate Student

Berkeley, CA

Spring 2020

A semester devoted to special topics in deep learning and data-driven innovation.

Participant in Innovation Centre Denmark's SPARK program and recipient of the Spar Nord Foundation Scholarship.

Technical University of Denmark

M.Sc. Mathematical Modelling & Computing GPA: 10.7 (-3 to 12)

Kongens Lyngby, Denmark

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

B.Sc. Software Engineering GPA: 8.2 (-3 to 12)

Kongens Lyngby, Denmark

Sep 2015 - Dec 2018

Built a strong foundation in machine learning, linear algebra, statistics, calculus, algorithms and digital signal processing.

Nanyang Technological University

Exchange Student

Singapore

Fall 2017

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

Professional experience

Technical University of Denmark

Teaching Assistant

Kongens Lyngby, Denmark

Fall 2019

02456 Deep Learning & 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 for audio.

Retune DSP

Assistant Software Developer

Kongens Lyngby, Denmark

Feb 2019 - Dec 2019

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

Raffle.ai

Machine Learning Intern

Copenhagen, Denmark

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

Lead Software Developer

Gentofte, Denmark

Jul 2017 - Dec 2019

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

Summer schools

Åbo Akademi

Development of high-assured autonomous systems

Turku, Finland

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

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

Pre-print available for download here: https://drive.google.com/file/d/13NZBZLNZ5nii5_YBoF3tkRf9Hnr5ZAYA

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

Open source contributions

Optimization in deep learning

Dec 2019

Collection of recent deep learning optimization algorithms (40+ stars)

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

How to build RNNs and LSTMs from scratch with NumPy

Oct 2019

Educational material on recurrent neural networks (100+ stars)

https://github.com/nicklashansen/rnn_lstm_from_scratch

Minimal Neural Architecture Search

Oct 2019

A minimalistic NAS implementation for educational purposes (30+ stars)

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

Asynchronous Advantage Actor-Critic (A3C)

Jun 2019

Implementation and ablation study of A3C on common RL environments

<https://github.com/nicklashansen/a3c>

Game development

Atlas, a battleground for the Starcraft II World Championships

Dec 2012 - Nov 2013

Used in GSL, GSTL, IPL, DreamHack, Assembly and more (200k+ spectators)

Technical skills

Programming

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

Deep Learning

PyTorch, TensorFlow

Others

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

Languages

Danish

Native

English

Professional