Nicklas **Hansen**

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Research interests

I am highly interested in research on the **generalization** and **robustness** of machine learning systems, particularly in connection with **self-supervised learning**, **transfer learning** and **optimization** in the context of **computer vision** and **robotics**.

Education

University of California, Berkeley   *Berkeley, CA*
Visiting Student **GPA: 4.0 (0 to 4)**   *Spring 2020*
Berkeley Collider Cup nominee, Innovation Centre Denmark's SPARK winner, Spar Nord Foundation scholarship recipient.

Technical University of Denmark   *Kongens Lyngby, Denmark*
MS Mathematical Modelling & Computing **GPA: 10.7 (-3 to 12)**   *Feb 2019 -*
Special topics in machine learning, e.g. deep RL, unsupervised learning, optimization, as well as research projects.

Technical University of Denmark   *Kongens Lyngby, Denmark*
BS Software Technology   *Sep 2015 - Dec 2018*
Built a strong foundation in machine learning, linear algebra, statistics, calculus, computer science.

Nanyang Technological University   *Singapore*
Exchange Student   *Fall 2017*
Courses in computer vision, cryptology and large-scale software engineering.

Professional experience

Berkeley AI Research (BAIR)   *Berkeley, CA*
Graduate Research Intern   *Jan 2020 -*
Research on generalization and adaptation in RL, supervised by Lerrel Pinto & Xiaolong Wang.

Technical University of Denmark   *Kongens Lyngby, Denmark*
Teaching Assistant   *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   *Kongens Lyngby, Denmark*
Student Assistant   *Feb 2019 - Dec 2019*
I helped 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   *Jul 2017 - Dec 2019*
I developed and maintained a GDPR-compliant data management and analysis platform for the HR industry.

Publications

Self-Supervised Policy Adaptation during Deployment *Pre-print*
Currently under review, pre-print available (2020)
https://arxiv.org/abs/2007.04309
Nicklas Hansen, Yu Sun, Pieter Abbeel, Alexei A. Efros, Lerrel Pinto, Xiaolong Wang

Short Term Blood Glucose Prediction Based on Continuous Glucose Monitoring Data *EMBC 2020*
Engineering in Medicine and Biology Society, **EMBC** (2020)
https://arxiv.org/abs/2002.02805
Ali Mohebbi, Alexander R. Johansen, **Nicklas Hansen**, Peter E. Christensen, Jens M. Tarp, Morten L. Jensen,
Henrik Bengtsson, Morten Mørup

Academic reviews

ACL, Annual Conference of the Association for Computational Linguistics *2020*
Assisted review

Open-source projects

Optimization in deep learning *Dec 2019*
Collection of recent deep learning optimization algorithms
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
https://github.com/nicklashansen/rnn_lstm_from_scratch

Minimal Neural Architecture Search *Oct 2019*
A minimalistic NAS implementation for educational purposes
https://github.com/nicklashansen/minimal-nas

Voice Activity Detection in Noisy Environments *Dec 2018*
Study on VAD systems robust to high noise levels
https://github.com/nicklashansen/voice-activity-detection

International summer schools

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

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

Certificates

Dansk Standard *Copenhagen, Denmark*
ISO21500 Guidance on Project Management *Jan 2018*

Technical skills

Programming	**Python**, C, C#, Java, JavaScript, Matlab, SQL
Deep Learning	**PyTorch**, TensorFlow
Others	**Linux**, Git, AWS, Docker, Latex