Nicklas **Hansen**

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Research Interest

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

Education

University of California, Berkeley — *Berkeley, CA, USA*
Visiting Student, GPA: 4.0/4.0 — *Spring 2020*
- Collider Cup finalist, Innovation Centre Denmark's SPARK winner, Spar Nord scholarship recipient.

Technical University of Denmark — *Kongens Lyngby, Denmark*
MS Mathematical Modeling & Computation, GPA: 10.7/12.0 — *Feb 2019 - est. Jan 2021*
- Special topics in machine learning, supplemented by research projects.

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

Nanyang Technological University — *Singapore*
Exchange Student — *Fall 2017*
- A semester devoted to computer vision and large-scale software engineering, Otto Mønsted scholarship recipient.

Experience

Berkeley Artificial Intelligence Research — *Berkeley, CA, USA*
Graduate Research Intern — *Jan 2020 - July 2020*
- Supervised by Xiaolong Wang & Lerrel Pinto, advised by Alyosha Efros.

Raffle — *Copenhagen, Denmark*
Machine Learning Intern — *Summer 2019*
- I reimplemented a cross-domain text-to-SQL parser in PyTorch and improved its accuracy by 12%.

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.

Nordic Transition — *Gentofte, Denmark*
Software Developer — *Jul 2016 - Dec 2019*
- I developed and maintained a data management and analysis platform for the HR industry.

Teaching

Technical University of Denmark — *Teaching Assistant*
02456 Deep Learning — *Fall 2019, Fall 2020*
- Significant course material contributions, supervised 50+ students' projects on RL and audio (F19).

Technical University of Denmark — *Teaching Assistant*
02454 Introduction to Cognitive Science — *Fall 2019*
- Assisted tutorial sessions and corrected assignments.

Publications

Self-Supervised Policy Adaptation during Deployment *Pre-print*
Submitted to Conference on Neural Information Processing Systems **(NIPS)** *2020*
Nicklas Hansen, Yu Sun, Pieter Abbeel, Alexei A. Efros, Lerrel Pinto, Xiaolong Wang
https://arxiv.org/abs/2007.04309

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

Academic Reviews

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

Open-Source Projects

Optimization in Deep Learning *Dec 2019*
・Benchmark 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 *Jan 2019*
・Complete implementation of a VAD system robust to high noise levels.
https://github.com/nicklashansen/voice-activity-detection

Summer Schools

Technical University of Denmark *Kongens Lyngby, Denmark*
・Computational Data Analysis *Aug 2019*

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
Machine Learning	PyTorch, TensorFlow
Others	Linux, Docker, Git, Azure, AWS EC2, AWS S3, Jupyter Notebooks, Google Colab, Latex