

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. Advised by Ole Winther.

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

Submitted to Conference on Neural Information Processing Systems (NIPS)

Nicklas Hansen, Yu Sun, Pieter Abbeel, Alexei A. Efros, Lerrel Pinto, Xiaolong Wang

<https://arxiv.org/abs/2007.04309>

Pre-print

2020

Short Term Blood Glucose Prediction Based on Continuous Glucose Monitoring Data

IEEE Engineering in Medicine and Biology Conference (EMBC)

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>

Poster

2020

Academic Reviews

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

Assisted review

Open-Source Projects

Optimization in Deep Learning

• Benchmark of recent deep learning optimization algorithms.

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

Dec 2019

How to build RNNs and LSTMs from scratch with NumPy

• Educational material on recurrent neural networks.

https://github.com/nicklashansen/rnn_lstm_from_scratch

Oct 2019

Minimal Neural Architecture Search

• A minimalistic NAS implementation for educational purposes.

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

Oct 2019

Voice Activity Detection in Noisy Environments

• Complete implementation of a VAD system robust to high noise levels.

<https://github.com/nicklashansen/voice-activity-detection>

Jan 2019

Summer Schools

Technical University of Denmark

• Computational Data Analysis

Kongens Lyngby, Denmark

Aug 2019

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

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