

# Nicklas Hansen

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## Research Interest

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I am broadly interested in developing intelligent systems that continuously learn, generalize, and adapt. My work is at the intersection of **machine learning**, **robotics**, and **computer vision**.

## Education

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### University of California, Berkeley

*Berkeley, CA, USA*

Visiting Student, GPA: 4.0/4.0

*Spring 2020*

· Spar Nord Fonden scholarship recipient, Collider Cup finalist, Innovation Centre Denmark's SPARK winner.

### Technical University of Denmark

*Kongens Lyngby, Denmark*

MSc Mathematical Modeling & Computation, GPA: 11.17/12.0

*Feb 2019 - Jan 2021*

· Research projects and special topics in machine learning. Advised by Ole Winther.

### Technical University of Denmark

*Kongens Lyngby, Denmark*

BSc Software Technology, GPA: 8.2/12.0, final year GPA: 10.8/12.0

*Sep 2015 - Dec 2018*

· **Nanyang Technological University, Singapore** - semester abroad, Fall 2017.

## Research Experience

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### University of California, San Diego

*San Diego, CA, USA*

Visiting Researcher

*July 2020 - Aug 2021*

· Reinforcement learning. Advised by Xiaolong Wang.

### University of California, Berkeley - Berkeley Artificial Intelligence Research (BAIR)

*Berkeley, CA, USA*

Graduate Research Intern

*Jan 2020 - July 2020*

· Reinforcement learning. Supervised by Xiaolong Wang & Lerrel Pinto in Alyosha Efros' group.

### DTU Cognitive Systems

*Kongens Lyngby, Denmark*

Student Researcher

*Fall 2019*

· Transfer learning for deep sequence modeling in personalized healthcare. Advised by Morten Mørup.

## Publications and Pre-prints

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### Generalization in Reinforcement Learning by Soft Data Augmentation

*Pre-print*

arXiv pre-print

*2021*

<https://arxiv.org/abs/2011.13389>

Nicklas Hansen, Xiaolong Wang

### Self-Supervised Policy Adaptation during Deployment

*Spotlight*

International Conference on Learning Representations (ICLR)

*2021*

Nicklas Hansen, Rishabh Jangir, Yu Sun, Guillem Alenyà, Pieter Abbeel, Alexei A. Efros, Lerrel Pinto, Xiaolong Wang

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

[https://openreview.net/forum?id=o\\_V-MjyyGV\\_](https://openreview.net/forum?id=o_V-MjyyGV_)

### 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>

## Teaching

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### Technical University of Denmark

#### Reinforcement Learning

Co-organizer

Jan 2021

· Special course that I co-organized w/ Prof. Ole Winther for a group of students. Three weeks of full-time study.

### Technical University of Denmark

#### 02456 Deep Learning

Teaching Assistant

Fall 2019, Fall 2020

· Significant course material contributions, **supervised 100+ students' projects** on reinforcement learning.

#### 02454 Introduction to Cognitive Science

Fall 2019

· Assisted tutorial sessions, corrected assignments.

## Work Experience

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### raffle.ai

#### Machine Learning Intern

Copenhagen, Denmark

Summer 2019

· I built a cross-domain text-to-SQL parser in PyTorch.

### Retune DSP

#### Student Assistant

Kongens Lyngby, Denmark

Feb 2019 - Dec 2019

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

### Nordic Transition

#### Student Software Developer

Gentofte, Denmark

Jul 2016 - Dec 2019

· I developed and maintained a data management and analysis platform for the HR industry.

## Academic Service

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2021 Association for the Advancement of Artificial Intelligence (**AAAI**)

Reviewer

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

Assisted review

2020 SIGNLL Conference on Computational Natural Language Learning (**CoNLL**)

Assisted review

## Awards

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2020 **Spar Nord Fond Scholarship**

Scholarship

· A scholarship to study a semester at UC Berkeley (5 recipients nation-wide).

2020 **Berkeley Collider Cup Finalist**

Award

· Biannual startup competition. Best student project from each class is nominated.

2020 **Innovation Center Denmark's SPARK Winner**

Award

· Best project in a 6-month entrepreneurial program in the Bay Area.

2017 **Otto Mønsted Fonds Legat**

Scholarship

· A grant for high-achieving students (GPA >8.0) that wish to study a semester abroad.

## Selected Open-Source Projects

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### DMControl Generalization Benchmark

Nov 2020

· Benchmark for generalization in continuous control from pixels.

<https://github.com/nicklashansen/dmcontrol-generalization-benchmark>

### Optimization in Deep Learning

Dec 2019

· Implementation and 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](https://github.com/nicklashansen/rnn_lstm_from_scratch)

### Programming

Python, C, C#, JavaScript, Matlab, SQL

### Machine Learning

PyTorch, TensorFlow

### Others

Linux, Docker, Git, Kubernetes, LSF/SLURM, Azure, AWS, Jupyter, MuJoCo, Latex