

# 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

Visiting Student, **GPA: 4.0/4.0**

Berkeley, CA, USA

Spring 2020

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

### Technical University of Denmark

MSc Mathematical Modeling & Computation, **GPA: 10.7/12.0**

Kongens Lyngby, Denmark

Feb 2019 - est. Feb 2021

· Special topics in machine learning and research projects. Advised by Ole Winther.

### Technical University of Denmark

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

Kongens Lyngby, Denmark

Sep 2015 - Dec 2018

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

## Research Experience

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### University of California, San Diego

Visiting Researcher

San Diego, CA, USA

July 2020 -

· Reinforcement learning. Advised by Xiaolong Wang.

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

Graduate Research Intern

Berkeley, CA, USA

Jan 2020 - July 2020

· Reinforcement learning. Supervised by Xiaolong Wang & Lerrel Pinto, advised by Alyosha Efros.

### DTU Cognitive Systems

Student Researcher

Kongens Lyngby, Denmark

Fall 2019

· Transfer learning for autoregressive models in biomedical time series analysis. Advised by Morten Mørup.

## Publications

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### Generalization in Reinforcement Learning by Soft Data Augmentation

Submitted to IEEE International Conference on Robotics and Automation (ICRA)

Under review

2020

**Nicklas Hansen**, Xiaolong Wang

### Self-Supervised Policy Adaptation during Deployment

Deep Reinforcement Learning Workshop @ **NeurIPS 2020**

Workshop

2020

**Nicklas Hansen**, Rishabh Jangir, Yu Sun, Guillem Alenyà, 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

IEEE Engineering in Medicine and Biology Conference (EMBC)

Poster

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

02456 Deep Learning

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

*Teaching Assistant*

*Fall 2019, Fall 2020*

02454 Introduction to Cognitive Science

· Assisted tutorial sessions, corrected assignments.

*Fall 2019*

## Work Experience

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### raffle.ai

Machine Learning Intern

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

*Copenhagen, Denmark*

*Summer 2019*

### Retune DSP

Student Assistant

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

*Kongens Lyngby, Denmark*

*Feb 2019 - Dec 2019*

### Nordic Transition

Software Developer

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

*Gentofte, Denmark*

*Jul 2016 - Dec 2019*

## Academic Service

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2021 Association for the Advancement of Artificial Intelligence (AAAI)

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

2020 SIGNLL Conference on Computational Natural Language Learning (CoNLL)

*Reviewer*

*Assisted review*

*Assisted review*

## Open-Source Projects

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### Self-Supervised Policy Adaptation during Deployment

· Training and evaluation code for our paper.

<https://github.com/nicklashansen/policy-adaptation-during-deployment>

*Jun 2020*

### Optimization in Deep Learning

· Implementation and benchmark of recent deep learning optimization algorithms.

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

*Dec 2019*

### Learning an Adaptive Learning Rate Schedule

· Unofficial implementation reproducing results of the paper.

[https://github.com/nicklashansen/rnn\\_lstm\\_from\\_scratch](https://github.com/nicklashansen/rnn_lstm_from_scratch)

*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](https://github.com/nicklashansen/rnn_lstm_from_scratch)

*Oct 2019*

### SyntaxSQLNet: A Text-to-SQL Parser

· PyTorch reimplementation reproducing results of the paper and improving accuracy by 12%.

<https://github.com/raffle-interns/SyntaxSQLNet>

*July 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*

## Technical Skills

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### Programming

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

### Machine Learning

PyTorch, TensorFlow

### Others

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