

# Nicklas Hansen

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## Research Interest

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I am broadly interested in the **generalization** and **adaptation** of autonomous systems. I believe AI in the future should be flexible, learn with little supervision, and learn continuously over their lifetime. I work with **computer vision** and **robotics**.

## Education

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### 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, cGPA: 10.7/12.0

Feb 2019 - est. Feb 2021

- Special topics in machine learning, supplemented by research projects. Advised by Ole Winther.

### Technical University of Denmark

Kongens Lyngby, Denmark

BS Software Technology, cGPA: 8.2/12.0, final year GPA: 10.8/12.0

Sep 2015 - Dec 2018

- Built a strong foundation in computer science, linear algebra, statistics, calculus, machine learning.

### Nanyang Technological University

Singapore

Exchange Student, GPA: 3.27/4.0

Fall 2017

- A semester devoted to computer vision and cryptography, Otto Mønsted scholarship recipient.

## Experience

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### University of California, San Diego

San Diego, CA, USA

Visiting Researcher

July 2020 - est. Feb 2021

- Research projects on the generalization of RL agents, advised by Xiaolong Wang.

### Berkeley Artificial Intelligence Research (BAIR)

Berkeley, CA, USA

Graduate Research Intern

Jan 2020 - July 2020

- Supervised by Xiaolong Wang & Lerrel Pinto, advised by Alyosha Efros.

### raffle.ai

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.

### 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

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### Technical University of Denmark

Teaching Assistant

02456 Deep Learning

Fall 2019, Fall 2020

- Significant course material contributions, supervised 50+ students' projects on RL (F19).

### Technical University of Denmark

Teaching Assistant

02454 Introduction to Cognitive Science

Fall 2019

## Publications

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### Self-Supervised Policy Adaptation during Deployment

*Pre-print*

Available as pre-print

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 Service

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

*Assisted review*

2020 SIGNLL Conference on Computational Natural Language Learning (CoNLL)

*Assisted review*

## Open-Source Projects

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### 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](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>

## International Summer Schools

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### Åbo Akademi

*Turku, Finland*

• Development of high-assured autonomous systems

*Aug 2018*

### Tallinn Technical University

*Tallinn, Estonia*

• High-assured autonomous systems

*Jun 2018*

## Certificates

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### Dansk Standard

*Copenhagen, Denmark*

• ISO21500 Guidance on Project Management

*Jan 2018*

## Technical Skills

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### Programming

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

### Machine Learning

PyTorch, TensorFlow

### Others

Linux, Docker, Git, Azure, AWS, Jupyter Notebooks, MuJoCo, Latex