

Nicklas Hansen

+1 (619) 375-9792 | hello@nicklashansen.com | nicklashansen.com | [nicklashansen](https://github.com/nicklashansen) | [@ncklashansen](https://twitter.com/ncklashansen) | [ncklas](https://www.linkedin.com/in/ncklas) | San Diego, CA

Research Interest

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

University of California, San Diego

PhD student, Computer Science and Engineering, GPA: 4.0/4.0

· Advised by Xiaolong Wang and Hao Su.

San Diego, CA, USA

Fall 2021 -

University of California, Berkeley

Visiting Student, GPA: 4.0/4.0

· Spar Nord Fonden's FinTech scholarship recipient, SCET's Collider Cup finalist.

Berkeley, CA, USA

Spring 2020

Technical University of Denmark

MSc Mathematical Modeling & Computation, GPA: 11.2/12.0

· Special topics in machine learning. Advised by Ole Winther.

Kongens Lyngby, Denmark

Feb 2019 - Jan 2021

Technical University of Denmark

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

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

Kongens Lyngby, Denmark

Sep 2015 - Dec 2018

Preprints

Temporal Difference Learning for Model Predictive Control

arXiv preprint

Nicklas Hansen, Xiaolong Wang*, Hao Su*

<https://arxiv.org/abs/2203.04955>

Preprint

2022

Journal / Conference Papers

Look Closer: Bridging Egocentric and Third-Person Views with Transformers for Robotic Manipulation

IEEE Robotics and Automation Letters (RA-L)

International Conference on Robotics and Automation (ICRA)

Rishabh Jangir*, **Nicklas Hansen***, Sambaran Ghosal, Mohit Jain, Xiaolong Wang

<https://arxiv.org/abs/2201.07779>

Journal & Poster

2022

Stabilizing Deep Q-Learning with ConvNets and Vision Transformers under Data Augmentation

Conference on Neural Information Processing Systems (NeurIPS)

Nicklas Hansen, Hao Su, Xiaolong Wang

<https://arxiv.org/abs/2107.00644>

Poster

2021

Learning Vision-Guided Quadrupedal Locomotion with Cross-Modal Transformers

International Conference on Learning Representations (ICLR)

Ruihan Yang*, Minghao Zhang*, **Nicklas Hansen**, Hauzhe Xu, Xiaolong Wang

<https://arxiv.org/abs/2107.03996>

Spotlight

2022

Generalization in Reinforcement Learning by Soft Data Augmentation

International Conference on Robotics and Automation (ICRA)

Nicklas Hansen, Xiaolong Wang

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

Poster

2021

Self-Supervised Policy Adaptation during Deployment

International Conference on Learning Representations (ICLR)

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

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

Spotlight

2021

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

Teaching

Technical University of Denmark

Reinforcement Learning

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

Co-organizer

Jan 2021

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

Current Mentees

Rishabh Jangir (MS UCSD)

2020 -

Mohit Jain (MS UCSD)

2020 -

Sambaran Ghosal (MS UCSD)

2021 -

Chieko Sarah Imai (MS UCSD)

2021 -

Sateesh Kumar (MS UCSD)

2021 -

Jonathan Zamora-Anaya (BS UCSD)

2021 -

Xinyue Chen (BS NYU Shanghai)

2021 -

Yanjie Ze (BS SJTU)

2021 -

Invited Talks

Intel AI "Agents that Generalize"

August 2021

G-Research "Agents that Generalize and Adapt"

February 2021

Neural AI "An Introduction to Reinforcement Learning"

June 2019

Academic Service

2022 IEEE Robotics and Automation Letters (RA-L / IROS)

Reviewer

2022 European Conference on Computer Vision (ECCV)

Reviewer

2022 Generalizable Policy Learning in the Physical World, Workshop @ ICLR

Reviewer

2022 International Conference on Machine Learning (ICML)

Reviewer

2022 Conference on Computer Vision and Pattern Recognition (CVPR)

Reviewer

2022 IEEE Robotics and Automation Letters (RA-L / ICRA)

Assisted review

2021 Association for the Advancement of Artificial Intelligence (AAAI)

Reviewer

2021 International Conference on Machine Learning (ICML)

Assisted review

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

Assisted review

2020 SIGNLL Conference on Computational Natural Language Learning (CoNLL)

Assisted review

Workshop Presentations

Temporal Difference Learning for Model Predictive Control TILOS Student and Postdoc Workshop	<i>Oral</i> 2022
Look Closer: Bridging Egocentric and Third-Person Views with Transformers for Robotic Manipulation Workshop on Deployable Decision Making in Embodied Systems @ NeurIPS Deep RL Workshop @ NeurIPS	<i>Poster</i> 2021 2021
Learning Vision-Guided Quadrupedal Locomotion End-to-End with Cross-Modal Transformers Deep RL Workshop @ NeurIPS Visual Learning and Reasoning for Robotics Workshop @ RSS	<i>Poster/Oral</i> 2021 2021
Stabilizing Deep Q-Learning with ConvNets and Vision Transformers under Data Augmentation Unsupervised RL Workshop @ ICML Visual Learning and Reasoning for Robotics Workshop @ RSS	<i>Poster/Oral</i> 2021 2021
Self-Supervised Policy Adaptation During Deployment Microsoft Research RL Day Deep RL Workshop @ NeurIPS Workshop on Robot Learning @ NeurIPS	<i>Poster</i> 2021 2020 2020

Work Experience

Meta AI Research Intern (Incoming) · Reinforcement Learning. Mentored by Aravind Rajeswaran.	<i>Pittsburgh, PA, USA</i> <i>Summer 2022</i>
raffle.ai Machine Learning Intern · I built and open-sourced a cross-domain text-to-SQL parser in PyTorch.	<i>Copenhagen, Denmark</i> <i>Summer 2019</i>
Retune DSP Student Assistant · I helped a team of engineers build and maintain deep learning pipelines for embedded voice control.	<i>Kongens Lyngby, Denmark</i> <i>Feb 2019 - Dec 2019</i>
Nordic Transition Student Software Developer · I developed and maintained a data management and analysis platform for the HR industry.	<i>Gentofte, Denmark</i> <i>Jul 2016 - Dec 2019</i>

Awards and Scholarships

2021 Robotics and Entrepreneurship Summer School Scholarship · A scholarship to participate in an intense two-week summer program in Denmark.	<i>Scholarship</i>
2020 Spar Nord Fond Scholarship · A scholarship to study a semester at UC Berkeley (5 recipients nation-wide).	<i>Scholarship</i>
2020 UC Berkeley's SCET Collider Cup Finalist · Biannual startup competition. Best student project from each class is nominated.	<i>Award</i>
2020 Innovation Center Denmark's SPARK Winner · Best project in a 6-month entrepreneurial program in the Bay Area.	<i>Award</i>
2017 Otto Mønsted Fonds Legat · A grant for high-achieving students (GPA ≥ 8.0) that wish to study a semester abroad.	<i>Scholarship</i>

Selected Open-Source Projects

DMControl Generalization Benchmark

2020

· Benchmark for generalization in continuous control from pixels.
<https://github.com/nicklashansen/dmcontrol-generalization-benchmark>

Optimization in Deep Learning

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

2019

· Educational material on recurrent neural networks.
https://github.com/nicklashansen/rnn_lstm_from_scratch

Programming

Python, C, C++, C#, JavaScript

Machine Learning

PyTorch

Others

Linux, Git, Docker, Kubernetes, SLURM, LSF, MuJoCo, Latex