Nicklas Hansen

📧 hello@nicklashansen.com | 🏠 nicklashansen.com | 🗘 nicklashansen | 🛅 ncklas | 📍 San Diego, CA

Education

University of California, San Diego PhD student, Computer Science and Engineering, GPA: 3.85/4.0 · Advised by Xiaolong Wang and Hao Su. NVIDIA Graduate Fellow.	San Diego, CA, USA Fall 2021 - present
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 MS 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 BS 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
Publications & Preprints (23)	
Generalizable Robotic Insertion with World Models Under review Nicklas Hansen, Iretiayo Akinola, Yijie Guo, Jie Xu, Bingjie Tang, Hao Su, Xiaolong Wang, Abhishek Gupta, Dieter Fox, Yashraj Narang Preprint to be released	Submitted 2025
Multi-Stage Manipulation with Demonstration-Augmented Reward, Policy, and World Me International Conference on Machine Learning (ICML) Adrià López Escoriza, Nicklas Hansen, Stone Tao, Tongzhou Mu, Hao Su https://arxiv.org/abs/2503.01837	odel Learning Poster 2025
Policy Learning with Multi-Task World Models International Conference on Learning Representations (ICLR) Ignat Georgiev, Varun Giridhar, Nicklas Hansen, Animesh Garg https://arxiv.org/abs/2407.02466	Poster 2025
Hierarchical World Models as Visual Whole-Body Humanoid Controllers International Conference on Learning Representations (ICLR) Nicklas Hansen, Jyothir S V, Vlad Sobal, Yann LeCun, Xiaolong Wang*, Hao Su* https://arxiv.org/abs/2405.18418	Poster 2025
A Simulation Benchmark for Autonomous Racing with Large-Scale Human Data Conference on Neural Information Processing Systems (NeurIPS) Adrian Remonda, Nicklas Hansen, Ayoub Raji, Nicola Musiu, Marko Bertogna, Eduardo E. Veas, Xiaolong Wang https://arxiv.org/abs/2407.16680	Poster 2024
A Recipe for Unbounded Data Augmentation in Visual Reinforcement Learning Reinforcement Learning Conference (RLC) Abdulaziz Almuzairee, Nicklas Hansen, Henrik I. Christensen https://arxiv.org/abs/2405.17416	Poster 2024

TD-MPC2: Scalable, Robust World Models for Continuous Control International Conference on Learning Representations (ICLR) Nicklas Hansen, Hao Su*, Xiaolong Wang* https://arxiv.org/abs/2310.16828	Spotlight 2024
Open X-Embodiment: Robotic Learning Datasets and RT-X Models International Conference on Robotics and Automation (ICRA) Open X-Embodiment Collaboration, [], Nicklas Hansen , [] (173 authors) https://arxiv.org/abs/2310.08864	Best Conference Paper 2024
MoDem-V2: Visuo-Motor World Models for Real-World Robot Learning International Conference on Robotics and Automation (ICRA) Patrick Lancaster, Nicklas Hansen, Aravind Rajeswaran, Vikash Kumar https://arxiv.org/abs/2309.14236	Poster 2024
Finetuning Offline World Models in the Real World Conference on Robot Learning (CoRL) Yunhai Feng*, Nicklas Hansen* , Ziyan Xiong*, Chandramouli Rajagopalan, Xiaolong Wang https://arxiv.org/abs/2310.16029	Oral 2023
Multi-Task Real Robot Learning with Generalizable Neural Feature Fields Conference on Robot Learning (CoRL) Yanjie Ze, Ge Yan, Yueh-Hua Wu, Annabella Macaluso, Yuying Ge, Jianglong Ye, Nicklas Har Li Erran Li, Xiaolong Wang https://arxiv.org/abs/2308.16891	<mark>Oral</mark> 2023 nsen ,
On Pre-Training for Visuo-Motor Control: Revisiting a Learning-from-Scratch Baseline International Conference on Machine Learning (ICML) Nicklas Hansen*, Zhechen Yuan*, Yanjie Ze*, Tongzhou Mu*, Aravind Rajeswaran^, Hao Su Huazhe Xu^, Xiaolong Wang^ https://arxiv.org/abs/2212.05749	Poster 2023 ^,
MoDem: Accelerating Visual Model-Based Manipulation with Demonstrations International Conference on Learning Representations (ICLR) Nicklas Hansen, Yixin Lin, Hao Su, Xiaolong Wang, Vikash Kumar, Aravind Rajeswaran https://arxiv.org/abs/2212.05698	Poster 2023
On the Feasibility of Cross-Task Transfer with Model-Based Reinforcement Learning International Conference on Learning Representations (ICLR) Yifan Xu*, Nicklas Hansen*, Zirui Wang, Yung-Chieh Chan, Hao Su, Zhouwen Tu https://arxiv.org/abs/2210.10763	Poster 2023
Visual Reinforcement Learning with Self-Supervised 3D Representations IEEE Robotics and Automation Letters (RA-L) International Conference on Intelligent Robots and Systems (IROS) Yanjie Ze*, Nicklas Hansen*, Yinbo Chen, Mohit Jain, Xiaolong Wang https://arxiv.org/abs/2210.07241	Journal & Poster 2023
Graph Inverse Reinforcement Learning from Diverse Videos Conference on Robot Learning (CoRL) Sateesh Kumar, Jonathan Zamora*, Nicklas Hansen*, Rishabh Jangir, Xiaolong Wang https://arxiv.org/abs/2207.14299	Oral 2022
Temporal Difference Learning for Model Predictive Control International Conference on Machine Learning (ICML) Nicklas Hansen, Xiaolong Wang*, Hao Su* https://arxiv.org/abs/2203.04955	Short Presentation 2022

Look Closer: Bridging Egocentric and Third-Person Views with Transformers for Robotic Manipu	lation
IEEE Robotics and Automation Letters (RA-L)	Journal & Poster
International Conference on Robotics and Automation (ICRA)	2022
Rishabh Jangir*, Nicklas Hansen* , Sambaran Ghosal, Mohit Jain, Xiaolong Wang	
https://arxiv.org/abs/2201.07779	
Learning Vision-Guided Quadrunedal Locomotion with Cross-Modal Transformers	Spotlight
International Conference on Learning Representations (ICLR)	2022
Ruihan Yang* Minghao Zhang* Nicklas Hansen Hauzhe Xu, Xiaolong Wang	2022
https://arxiv.org/abs/2107.03996	
Stabilizing Deep Q-Learning with ConvNets and Vision Transformers under Data Augmentation	Poster
Conference on Neural Information Processing Systems (NeurIPS)	2021
Nicklas Hansen, Hao Su, Xiaolong Wang	
https://arxiv.org/abs/2107.00644	
Generalization in Reinforcement Learning by Soft Data Augmentation	Poster
International Conference on Robotics and Automation (ICRA)	2021
Nicklas Hansen Xiaolong Wang	2021
https://arxiv.org/abs/2011.13389	
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	
Chart Tarm Bland Chunges Drediction Based on Continuous Chunges Manitaring Data	Dester
Short Term Blood Glucose Prediction Based on Continuous Glucose Monitoring Data	Poster
Ali Mehebbi, Alevander D., Johanson, Nieklas Hansen , Deter E. Christenson, Joha M. Tarn	2020
All Monebul, Alexanuel R. Johansen, Nickids Hallsen , Peter E. Christensen, Jens IVI. Talp, Morton L. Jonson, Honrik Ponatoson, Morton Marun	
https://arxiv.org/abs/2002.02805	
https://arxiv.org/abs/2002.02005	
Teaching	
University of California, San Diego	eaching Assistant
ECE285 Introduction to Visual Learning	Spring 2024
· Held office hours, graded assignments.	
Technical University of Denmark	Coorganizar
Deinforcement Learning	Lop 2021
· Special course that I co-organized w/ Prof. Ole Winther for a group of students. Three weeks of fu	Ill_time_study
special course that i co-organized w/ i for. One winther for a group of students. Three weeks of to	m-time study.
Technical University of Denmark	eaching Assistant
02456 Deep Learning Fa	all 2019, Fall 2020
\cdot Significant course material contributions, supervised 100+ students' projects on reinforcement let	earning.
02454 Introduction to Cognitive Science	Fall 2019
· Assisted tutorial sessions, graded assignments.	
Current and Former Montoos	
Current and Former Mentees	

Rishabh Jangir (MS, UCSD -> ML Engineer, Skild AI)	2020 - 2022
Mohit Jain (MS, UCSD -> ML Engineer, Pinterest)	2020 - 2022
Xinyue Chen (BS, NYU Shanghai -> PhD, UC Berkeley)	2021 - 2022
Sateesh Kumar (MS, UCSD -> Research Engineer, ByteDance)	2021 - 2023
Jonathan Zamora-Anaya (BS, UCSD -> MS, USC)	2021 - 2023

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Invited Talks

World Models @ ICLR	"World Models on a Budget"	Apr 2025
UIUC CSLSC	"Learning World Models for Robots"	Feb 2025
KEA Copenhagen	"Data-Driven Algorithms for Robotics"	Dec 2024
USC	"Data-Driven World Models for Robots"	Oct 2024
HuggingFace	"TD-MPC, TD-MPC2, and beyond"	Jun 2024
BeNeRL Seminar	"Data-Driven World Models for Robots"	Jun 2024
TILOS Institute	"Large Datasets and Models for Robots in the Real World"	May 2024
Univ. Michigan	"Robot Learning with (Generalist) World Models"	Jan 2024
Georgia Tech	"Building Generalist World Models"	Jan 2024
Tech. Univ. Denmark	"Data-Driven World Models at Scale: Why, What, and How?"	Dec 2023
Tsinghua IIIS	"The Next Generation of World Models"	Mar 2023
MILA/ServiceNow	"World Models with Behavioral Priors"	Feb 2023
Georgia Tech	"Towards Sample-Efficient Robot Learning with World Models"	Jan 2023
Meta AI (FAIR)	"Pretraining for Control: Current Challenges and Solutions"	Jan 2023
TU Delft	"Model-Based Reinforcement Learning: A Path Towards Generalist Agents?"	Oct 2022
UCSD RoboGrads	"Model-Based Reinforcement Learning: A Path Towards Generalist Agents?"	Oct 2022
Generally Intelligent	Podcast: https://generallyintelligent.com/podcast/2022-12-16-podcast-episode-25-nicklas-hansen/	Sep 2022
Intel AI	"Temporal Difference Learning for Model Predictive Control"	Apr 2022
Intel AI	"Robots that Generalize"	Aug 2021
G-Research	"Agents that Generalize and Adapt"	Feb 2021
Neural Al	"An Introduction to Reinforcement Learning"	Jun 2019

Academic Service

Journal reviewer	
IEEE Transactions on Robotics (T-RO)	2024
Transactions on Pattern Analysis and Machine Intelligence (TPAMI)	2024
Journal of Machine Learning Research (JMLR)	2023
International Journal of Computer Vision (IJCV)	2023
Conference reviewer	
Conference on Neural Information Processing Systems (NeurIPS)	2022, 2023, 2024, 2025
International Conference on Machine Learning (ICML)	2022, 2023, 2025
International Conference on Learning Representations (ICLR)	2024, 2025
Conference on Computer Vision and Pattern Recognition (CVPR)	2022, 2023
European Conference on Computer Vision (ECCV)	2022
International Conference on Computer Vision (ICCV)	2023
IEEE Robotics and Automation Letters (RA-L)	2021, 2022, 2023, 2024
IEEE International Conference on Robotics & Automation (ICRA)	2023, 2024
Annual Conference on Robot Learning (CoRL)	2025
International Conference on Intelligent Robots and Systems (IROS)	2023, 2025
Association for the Advancement of Artificial Intelligence (AAAI)	2021

Workshop reviewer

Workshop on X-Embodiment Robot Learning @ CoRL	2024
Foundation Models for Decision-Making, Workshop @ NeurIPS	2023
Self-Supervised Learning - Theory and Practice, Workshop @ NeurIPS	2023
Learning Dexterous Manipulation, Workshop @ RSS	2023
Structural and Compositional Learning on 3D data, Workshop @ CVPR	2023
Self-Supervised Learning - Theory and Practice, Workshop @ NeurIPS	2022
Generalizable Policy Learning in the Physical World, Workshop @ ICLR	2022

Workshop Presentations

Musculoskeletal Control with TD-MPC2	Poster
MyoSuite Symposium @ NeurIPS (2nd place Locomotion track + Physiological Award)	2024
TD-MPC2: Scalable, Robust World Models for Continuous Control	Poster
Foundation Models for Decision-Making @ NeurIPS	2023
Robot Learning @ NeurIPS	2023
Pre-Training Robot Learning @ CoRL	2023
On Pre-Training for Visuo-Motor Control: Revisiting a Learning-from-Scratch Baseline	Poster
Pre-Training Robot Learning @ CoRL	2022
On the Feasibility of Cross-Task Transfer with Model-Based Reinforcement Learning	Poster
Pre-Training Robot Learning @ CoRL	2022
Foundation Models for Decision Making @ NeurIPS	2022
Deep RL Workshop @ NeurIPS	2022
MoDem: Accelerating Visual Model-Based Reinforcement Learning with Demonstrations	Poster
Pre-Training Robot Learning @ CoRL	2022
Deep RL Workshop @ NeurIPS	2022
Look Closer: Bridging Egocentric and Third-Person Views with Transformers for Robotic Manipulation	Poster
Workshop on Deployable Decision Making in Embodied Systems @ NeurIPS	2021
Deep RL Workshop @ NeurIPS	2021
Learning Vision-Guided Quadrupedal Locomotion End-to-End with Cross-Modal Transformers	Poster
Deep RL Workshop @ NeurIPS	2021
Visual Learning and Reasoning for Robotics Workshop @ RSS	2021
Stabilizing Deep Q-Learning with ConvNets and Vision Transformers under Data Augmentation	Poster
Unsupervised RL Workshop @ ICML	2021
Visual Learning and Reasoning for Robotics Workshop @ RSS	2021
Self-Supervised Policy Adaptation During Deployment	Poster
Microsoft Research RL Day	2021
Deep RL Workshop @ NeurIPS	2020
Workshop on Robot Learning @ NeurIPS	2020

Work Experience

NVIDIA Research
Research Intern
\cdot Robot Learning. Mentored by Yashraj Narang and Dieter Fox.

Meta AI (FAIR) Research Intern · Model-Based Reinforcement Learning. Mentored by Aravind Rajeswaran.	Menlo Park, CA, USA June 2022 - Dec 2022
raffle.ai Machine Learning Intern · I built and open-sourced a cross-domain text-to-SQL parser in PyTorch.	Copenhagen, Denmark Summer 2019
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 v	voice control.
Nordic Transition	Gentofte, Denmark
Student Software Developer	July 2016 - Dec 2019
· I developed and maintained a data management and analysis platform for the HR indus	stry.

Awards and Scholarships

Meta AI (FAIR)

2024	NVIDIA Graduate Fellowship	Fellowship
2023	• An award of \$60,000 to cover stipend and tuition for 1 year (10 recipients worldwide).	Award
2020	· Awarded free conference registration as a top peer reviewer for the conference.	, ward
2021	Robotics Summer School Scholarship	Scholarship
2020	• A scholarship to participate in a two-week summer program in Denmark.	
2020	• A scholarship to study a semester at UC Berkeley (5 recipients nation-wide).	Scholarship
2020	UC Berkeley's SCET Collider Cup Finalist	Award
	\cdot Biannual startup competition. Best student project from each class is nominated.	
2017	Otto Mønsted Fonds Legat • A grant for students with a GPA >= 8.0 who wish to study a semester abroad.	Scholarship

Volunteering

2024	Queer in AI, Graduate Application Financial Assistance	Organizing
2024	UC San Diego, Graduate Women in Computing Mentor	Mentorship
2023 2022	 Mentor for first-year PhD students that identify with a gender minority. UC San Diego, GradAMP Mentor (PhD Applications) Supported prospective students through weekly mentor-mentee meetings in Fall. 	Mentorship
Misc.	Open-Source Projects	
TD-M · Publ https://	PC2 Official Implementation (☆519) lic code release for "TD-MPC2: Scalable, Robust World Models for Continuous Control". /github.com/nicklashansen/tdmpc2	2024
TD-MPC Official Implementation (+430) · Public code release for "Temporal Difference Learning for Model Predictive Control". https://github.com/nicklashansen/tdmpc		2022
DMControl Generalization Benchmark (*168) • Benchmark for generalization in continuous control from pixels.		2020

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