JOHANNES KRUSE, PhD

■+1 (858) 241-1684 | ■ johanneskruse@outlook.com | ♠ johanneskruse.github.io | ♠ johanneskruse | ➡ @johanneskruse | ➡ johanneskruse | ↑ San Diego, CA Summary: As a PhD candidate, I specialize in machine learning (ML), natural language processing (NLP), and recommender systems (RS). My expertise includes extensive work in sequential modeling using transformers, recurrent neural networks (RNNs), and convolutional neural networks (CNNs), as well as theoretical studies in reinforcement learning (RL) and multi-armed bandits. I have applied my skills to solve real-world problems, delivering solutions that serve millions of users. I am a dedicated learner who thrives on challenges and is committed to continuous growth in my field.

PUBLICATIONS & PREPRINTS (8)

- Ryotaro Shimizu, Takashi Wada, Yu Wang, Johannes Kruse, Sean O'Brien, Sai Htaung Kham, Linxin Song, Yuya Yoshikawa, Yuki Saito, Fugee Tsung, Masayuki Goto, Julian McAuley. *Disentangling Likes and Dislikes in Personalized Generative Explainable Recommendation*. In Proceedings of the ACM Web Conference 2025 (WWW '25). https://arxiv.org/abs/2410.13248 (preprint)
- Johannes Kruse, Kasper Lindskow, Saikishore Kalloori, Marco Polignano, Claudio Pomo, Abhishek Srivastava, Anshuk Uppal, Michael Riis Andersen, Jes Frellsen. 2024. RecSys Challenge 2024: Balancing Accuracy and Editorial Values in News Recommendations. In Proceedings of the 18th ACM Conference on Recommender Systems (RecSys '24). https://doi.org/10.1145/3640457.3687164
- Johannes Kruse, Kasper Lindskow, Saikishore Kalloori, Marco Polignano, Claudio Pomo, Abhishek Srivastava, Anshuk Uppal, Michael Riis Andersen, Jes Frellsen. 2024. EB-NeRD a large-scale dataset for news recommendation. In Proceedings of the Recommender Systems Challenge 2024 (RecSysChallenge '24). https://doi.org/10.1145/3687151.3687152
- Árni Már Einarsson, Elisabetta Petrucci, Jannie Møller Hartley, **Johannes Kruse**. 2024. "I must have clicked on something": Users' Experiences and Evaluations of Personalized News Recommender Systems. Journalism Practice. (Accepted/In press)
- Alain Starke, Sanne Vrijenhoek, Lien Michiels, Johannes Kruse, Nava Tintarev. 2024. Report on NORMalize: The Second Workshop on the Normative Design and Evaluation of Recommender Systems. In Proceedings of CEUR Workshop Proceedings (CEUR-WS.org). https://ceur-ws.org/vol-3898/
- Johannes Kruse, Kasper Lindskow, Michael Riis Andersen, Jes Frellsen. 2023. *Creating the next generation of news experience on ekstrabladet.dk with recommender systems*. In Proceedings of the 17th ACM Conference on Recommender Systems (**RecSys** '23). https://doi.org/10.1145/3604915.3610248
- Sanne Vrijenhoek, Lien Michiels, Johannes Kruse, Alain Starke, Jordi Viader Guerrero, Nava Tintarev. 2023. Report on NORMalize: The First Workshop on the Normative Design and Evaluation of Recommender Systems. In Proceedings of CEUR Workshop Proceedings (CEUR-WS.org). https://ceur-ws.org/Vol-3639/
- **Johannes Kruse** and Lars Kai Hansen. 2019. *Det Etiske Råd Redegørelse om sundhedswearables og big data*. pp. 116–141. https://www.ft.dk/samling/20191/almdel/UER/bilag/2/2095890/index.html

WORKSHOPS, TUTORIALS, DEMOS & OTHERS (5)

- **Johannes Kruse**, Kasper Lindskow, Anshuk Uppal, Michael Riis Andersen, Jes Frellsen. 2024. *RecSys Challenge 2024: Balancing Accuracy and Editorial Values in News Recommendations*. (RecSys '24). https://recsys.eb.dk/
- Alain Starke, Sanne Vrijenhoek, Lien Michiels, Johannes Kruse, Nava Tintarev. 2024. NORMalize 2024: The Second Workshop on Normative Design and Evaluation of Recommender Systems. In Proceedings of the 18th ACM Conference on Recommender Systems (RecSys '24). https://doi.org/10.1145/3640457.3687103
- Alan Said, Toine Bogers, Christoph Trattner, Simen Eide, Benjamin Kille, Bruce Ferwerda, **Johannes Kruse**. 2024. *Nordic Personalization Workshop*. https://personalizationday.github.io/2024/
- Johannes Kruse, Lien Michiels, Alain Starke, Nava Tintarev, Sanne Vrijenhoek. 2024. NORMalize: A Tutorial on the Normative Design and Evaluation of Information Access Systems. In Proceedings of the 2024 Conference on Human Information Interaction and Retrieval (CHIIR '24). https://doi.org/10.1145/3627508.3638319
- Sanne Vrijenhoek, Lien Michiels, **Johannes Kruse**, Alain Starke, Nava Tintarev, Jordi Viader Guerrero. 2023. *NORMalize: The First Workshop on Normative Design and Evaluation of Recommender Systems*. In Proceedings of the 17th ACM Conference on Recommender Systems (RecSys '23). https://doi.org/10.1145/3604915.3608757

EDUCATION

03/2024 – 06/2025 University of California San Diego Research Scholar San Diego, California, USA

• Conducting research in Prof. Julian McAuley's lab on innovative recommender system architectures and responsible AI.

12/2021 – 06/2025 Technical University of Denmark | Industrial PhD Student Kgs. Lyngby & Copenhagen, DK

- Project: Responsible Recommender Systems for Danish News Publishing (RRS-DK).
- The project is a collaboration between JP/Politiken Media Group and the Technical University of Denmark.
- Built and deployed the first large-scale recommender system for eb.dk, increasing subscription sales by more than 38%.

09/		Technical University of Denmark	ı	MSc Applied Mathematics	Kgs. Lyngby, Di
•		rning for Natural Language Process ching word embeddings. Grade: 12 (A		LP). Exploring the use of Knowledge Graph tech	hnologies with the
•	Key Courses: Mad	chine Learning, Advanced Modeling,	Time S	eries Analysis, and Constrained Optimization.	
•		anish research project <i>WriteReader</i> b al Neural Networks.	y evalu	uating machine-generated captions using Recurre	nt Neural Networks
09/	2019 – 01/2020	Barcelona School of Informatics		MSc Exchange Student	Barcelona, E
•	Key courses: Dee	p Learning, Kernel-based Machine Le	arning	; and Multivariate Modelling, and Human Languag	ge Engineering.
09/	2015 – 06/2018	Technical University of Denmark		BSc Biomedical Engineering	Kgs. Lyngby, DI
•	•	tional Neuroimaging. Investigation calysis using Python programming. Gra		scranial magnetic stimulation variability in defin 2 (A+).	ed brain states by
•	Courses: Advance	ed Engineering Mathematics, Physics,	, Gene	ral Chemistry, Human Biology, Medical Imaging.	
08/	2017 – 12/2017	-	•	BSc Exchange Student	New York, US
•	Key courses: Bior	mechanics, Biomedical Product Devel	opmer	nt, Skilled Performance & Training.	
νo	RK EXPERIENCE				
04/	2021 – 12/2021	Ekstra Bladet		Machine Learning Engineer	Copenhagen, DK
•	Facilitated works	hops with stakeholders to ensure alig	gnmen	t on complex mathematical algorithms and project	ct goals.
•	Part of the team	that built and implemented the core	recom	mendation system infrastructure for EkstraBlade	t.dk.
07/	2020 – 09/2020	Infosys Limited		InStep Intern	Bangalore, IND
•	Developed a scal	able framework for a conversational	search	component integrated into an enterprise search	engine.
•	Built Al-driven m	odules for question answering and ge	enerati	ion using state-of-the-art machine learning techni	ques.
01/	2020 – 09/2020	Implement Consultant Group		Junior Consultant	Copenhagen, DK
•	Contributed to th	ne Data & Analytics team by optimizir	ng valu	e chains through advanced machine learning solu	tions.
•	Code contributor	to multiple text mining projects, ext	racting	g and visualizing topics for document classifcation	
09/	2018 – 09/2019	AudienceProject		Data Analyst	Copenhagen, DK
•				ecognition, enhancing document categorization w	
•	Collaborated with	h cross-functional teams to implemer	nt solu	tions tailored to the needs of major departments.	
03/	2018 – 09/2018	The Danish Ethics Committee	1	External Consultant	Copenhagen, DK
•	•		-	ing technical solutions such as differential privacy	, k-anonymity, and
_				trol of their personal data in public spaces.	
•	Facilitated discus '2016 – 06/2018	Technical University of Denmark	er es an	d summarized findings for the Ethics Committee.	Vac Lucabu DV
U8/	•		4iceuce 	Teaching Assistant ions on Calculus and Algebra courses.	Kgs. Lyngby, DK
•	Ciai illeu leal Illing	objectives and rostered productive t	aiocuo5	ions on calculus and Aigenra courses.	

Supported professors by evaluating and grading mathematical assignments to ensure academic standards.

02/2016 - 05/2018 Novozymes | Student Assistant

Calibrated and maintained laboratory equipment to ensure precise experimental results.

Enhanced calibration workflows in the Household Care division, boosting capacity from four to six washing machines.

08/2017 - 12/2017 Rensselaer Polytechnic Institute | Research Assistant New York, US

Conducted population studies for the Cognitive Science Department, adhering to rigorous scientific protocols.

VOLUNTEER

06/2018 - 08/2018 **Engineering World Health (EWH) Expatriate Volunteer** Dolakha District, NP

- Stationed as an engineer in a remote Himalayan hospital in Nepal for six weeks, providing technical support and maintenance.
- Collaborated with Nepal's Ministry of Health and local hospital staff to advance the UN's 2030 Sustainable Development Goals, ensuring access to universal health benefits.

SUPERVISION AND MENTORSHIP IN DEEP LEARNING PROJECTS

- Deep learning Course, News Recommendation Systems, Technical University of Denmark (2024). Supervised 26 groups involving more than 100 students working on the RecSys '24 challenge as part of the deep learning course at the Technical University of Denmark, providing guidance on advanced recommender systems techniques and strategies. Role: Co-Supervisor.
- Zhijian Feng, 2023, Technical University of Denmark & Ekstra Bladet. MSc thesis: Using Image Information in Deep Learning-Based Recommender Systems for News. Role: Main Supervisor.
- Magnus Waldemar Hoff Harder & Nikolaj Bach Meineche, 2023, Technical University of Denmark & Ekstra Bladet. BSc thesis: Transformer-based News Recommendations: Leveraging User Click-History with Deep Learning. Role: Main Supervisor.

Bagsvaerd, DK

INVITED TALKS

2025	Al at JP/Politikens Media Group	DN Media Group
2025	RecSys '24: Balancing Accuracy and Editorial Values in News Recommendations	Nordic Al Journalism
2024	Open-Sourcing Datasets and Designing Machine Learning Competitions	University of California San Diego
2023	Creating the Next Generation of News Experience with Recommender Systems	Nordic AI in Media Summit
2023	Creating the Next Generation of News Experience at Ekstra Bladet with Al	Nordic Personalization Day
2022	Do Recommendation Systems Generalize Across News Domains?	The University of Melbourne

AWARDS

2024	Best Use of AI in Revenue Strategy Digital Media Worldwide
2024	Best Use of AI in Revenue Strategy Digital Media Awards Europe
2023	Data and Al-driven Transformation Project of the Year Nordic DAIR Awards
2023	Best Product Iteration Global Media Awards

These awards reflect the combined efforts and accomplishments of our talented team at Platform Intellenge in News.

SCHOLARSHIPS

2024	\$26,000 in travel grants to support my research visit to the University of California San Diego.
2022	\$2,000 travel grant from DDSA to attent 16th ACM Conference on Recommender Systems, Seattle, WA, USA.
2019	\$11,000 in travel grants to support study abroad at Barcelona School of Informatics during master's studies.
2018	\$55,000 was collectively raised by 16 people to support our six-week volunteer work for EWH in Nepal.
2017	\$4,500 in travel grants to support study abroad at Rensselaer Polytechnic Institute during bachelor's studies.
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\$ = USD.

OTHER

Languages	Danish (native), English (fluent), Spanish (intermediate).
Coding	Python (expert), R (proficient), SQL (intermediate), HTML (familiar).
Frameworks	PyTorch, TensorFlow, Hugging Face, Scikit-learn, SciPy, Polars, Pandas, MLFlow, Matplotlib, NumPy.
Passions	Culture (lived abroad in the United States, Australia, Greenland, and Spain), Climbing (certified rock-climbing
	instructor), Freediving (completed a dive to a depth of 28 meters), Hiking (almost hugged a wild bear).