

CHRISTIAN ANDERSSON NÆSSETH

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CV Updated: June, 2025

EMPLOYMENT

Assistant Professor (tenured) Amsterdam Machine Learning Lab	University of Amsterdam 2022 Jan – Present
Postdoctoral Research Scientist Data Science Institute Advisor: David M. Blei	Columbia University 2019 Aug – 2021 Dec
Postdoctoral Researcher Department of Computer and Information Science Advisor: Fredrik Lindsten	Linköping University 2019 Jan – 2019 Jul
Research Intern Machine Intelligence & Perception Supervisor: Sebastian Nowozin	Microsoft Research Ltd 2018 Apr – 2018 Jul
Fulbright Visiting Student Researcher Data Science Institute Advisor: David M. Blei	Columbia University 2016 Jun – 2017 Jul
Teaching Assistant Department of Electrical Engineering	Linköping University 2011 Aug – 2018 Dec

EDUCATION

Ph.D. Electrical Engineering with Specialization in Automatic Control Linköping University Dissertation: <i>Machine learning using approximate inference: Variational and SMC methods</i> Advisors: Thomas B. Schön, Fredrik Lindsten	2019
M.Sc. Applied Physics and Electrical Engineering Linköping University Thesis: <i>Vision and Radar Sensor Fusion for Advanced Driver Assistance Systems</i>	2013
B.Sc. Mathematics Linköping University Thesis: <i>Nowcasting using Microblog Data</i> Exchange visit: Beijing Institute of Technology (2011/2012)	2012

HONORS AND AWARDS

Best Paper Award Symposium on Advances in Approximate Bayesian Inference (AABI) <i>SDE Matching: Scalable and Simulation-Free Training of Latent Stochastic Differential Equations</i>	2025
Savage Award International Society for Bayesian Analysis (ISBA) Outstanding dissertation in Theory and Methods: <i>Machine learning using approximate inference: Variational and sequential Monte Carlo methods</i>	2019

UNIVERSITY OF AMSTERDAM: Fabian Denoodt (2025), Bahrul Nasution (2025), Raghuram D R (2024), François Cornet (2024).

MASTER STUDENTS

UNIVERSITY OF AMSTERDAM: Aditya Patra (2025), Nesta Midavaine (2025), Doris Wezenberg (2024).

LINKÖPING UNIVERSITY: Elina Fantenberg (2018), Martin Lindfors (2014), Olle Noren (2014), Alfred Dahlin (2014).

PUBLICATIONS

- A. Timans*, R. Verma*, E. Nalisnick, and C. A. Naeseth. On continuous monitoring of risk violations under unknown shift. In *Uncertainty in Artificial Intelligence (UAI)*, 2025. * equal contribution.
- G. Bartosh, D. Vetrov, and C. A. Naeseth. SDE Matching: Scalable and simulation-free training of latent stochastic differential equations. In *Proceedings of the 42nd International Conference on Machine Learning (ICML)*, Vancouver, Canada, Jul 2025. **(Best Paper Award at AABI 2025)**.
- F. Eijkelboom, H. Zimmermann, S. Vadgama, E. J. Bekkers, M. Welling, C. A. Naeseth*, and J-W. van de Meent*. Controlled generation with equivariant variational flow matching. In *Proceedings of the 42nd International Conference on Machine Learning (ICML)*, Vancouver, Canada, Jul 2025. * equal contribution.
- A. Timans, C.-N. Straehle, K. Sakmann, C. A. Naeseth, and E. Nalisnick. Max-rank: Efficient multiple testing for conformal prediction. In *Proceedings of the 28th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2025.
- A. Chen, P. Chlenski, K. Munyuza, A. K. Moretti, C. A. Naeseth, and I. Pe'er. Variational combinatorial sequential Monte Carlo for Bayesian phylogenetics in hyperbolic space. In *Proceedings of the 28th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2025.
- F. Cornet, G. Bartosh, M. Schmidt, and C. A. Naeseth. Equivariant neural diffusion for molecule generation. In *Advances in Neural Information Processing Systems (NeurIPS)* 37, 2024.
- F. Eijkelboom*, G. Bartosh*, C. A. Naeseth, M. Welling, and J-W. van de Meent. Variational flow matching for graph generation. In *Advances in Neural Information Processing Systems (NeurIPS)* 37, 2024. * equal contribution.
- H. Yang, A. K. Moretti, S. Macaluso, P. Chlenski, C. A. Naeseth, and I. Pe'er. Variational pseudo marginal methods for jet reconstruction in particle physics. *Transactions on Machine Learning Research*, 2024.
- M. Jazbec*, A. Timans*, T. H. Veljković, K. Sakmann, D. Zhang, C. A. Naeseth, and E. Nalisnick. Fast yet safe: Early-exiting with risk control. In *Advances in Neural Information Processing Systems (NeurIPS)* 37, 2024. * equal contribution.
- G. Bartosh, D. Vetrov, and C. A. Naeseth. Neural flow diffusion models: Learnable forward process for improved diffusion modelling. In *Advances in Neural Information Processing Systems (NeurIPS)* 37, 2024a.
- H. Zimmermann, C. A. Naeseth, and J-W. van de Meent. VISA: Variational inference with sequential sample-average approximations. In *Advances in Neural Information Processing Systems (NeurIPS)* 37, 2024.
- G. Bartosh, D. Vetrov, and C. A. Naeseth. Neural diffusion models. In *Proceedings of the 41st International Conference on Machine Learning (ICML)*, Vienna, Austria, Jul 2024b.
- T. Pandeva, T. Bakker, C. A. Naeseth, and P. Forré. E-evaluating classifier two-sample tests. *Transactions on Machine Learning Research*, 2024.
- L. Wu, B. L. Trippe, C. A. Naeseth, D. M. Blei, and J. P. Cunningham. Practical and asymptotically exact conditional sampling in diffusion models. In *Advances in Neural Information Processing Systems (NeurIPS)* 36, 2023.

- L. Zhang, D. Blei, and C. A. Naesseth. Transport score climbing: Variational inference using forward KL and adaptive neural transport. *Transactions on Machine Learning Research*, 2023.
- H. Zimmermann, F. Lindsten, J-W. van de Meent, and C. A. Naesseth. A variational perspective on generative flow networks. *Transactions on Machine Learning Research*, 2023.
- A. K. Moretti, L. Zhang, C. A. Naesseth, H. Venner, D. Blei, and I. Pe'er. Variational combinatorial sequential Monte Carlo methods for Bayesian phylogenetic inference. In *Uncertainty in Artificial Intelligence (UAI)*, 2021.
- C. A. Naesseth, F. Lindsten, and D. Blei. Markovian score climbing: Variational inference with $\text{KL}(p||q)$. In *Advances in Neural Information Processing Systems (NeurIPS) 33*, Vancouver, Canada, 2020.
- D. Biderman, C. A. Naesseth, L. Wu, T. Abe, A. C. Mosberger, L. J. Sibener, R. M. Costa, J. Murray, and J. Cunningham. Inverse articulated-body dynamics from video via variational sequential Monte Carlo. In *First workshop on differentiable computer vision, graphics, and physics in machine learning (NeurIPS)*, Vancouver, Canada, 2020.
- M. Lindfors, T. Chen, and C. A. Naesseth. Robust Gaussian process regression with G-confluent likelihood. In *21th IFAC World Congress*, Germany, 2020.
- C. A. Naesseth, F. Lindsten, and T. B. Schön. Elements of sequential Monte Carlo. *Foundations and Trends® in Machine Learning*, 12(3):307–392, November 2019a. Now Publishers, Inc.
- C. A. Naesseth, F. Lindsten, and T. B. Schön. High-dimensional filtering using nested sequential Monte Carlo. *IEEE Transactions on Signal Processing*, 67(16):4177–4188, August 2019b.
- C. A. Naesseth. *Machine learning using approximate inference: Variational and sequential Monte Carlo methods*. PhD thesis, Linköping University, 2018. **(Savage Award for outstanding dissertation in Theory and Methods)**.
- D. Lawson, G. Tucker, C. A. Naesseth, C. J. Maddison, R. P. Adams, and Y. W. Teh. Twisted variational sequential Monte Carlo. In *Third workshop on Bayesian Deep Learning (NeurIPS)*, Montreal, Canada, 2018.
- C. A. Naesseth, S. W. Linderman, R. Ranganath, and D. M. Blei. Variational sequential Monte Carlo. In *Proceedings of the 21st International Conference on Artificial Intelligence and Statistics (AISTATS)*, Lanzarote, Spain, Apr 2018.
- C. A. Naesseth, F. J. R. Ruiz, S. W. Linderman, and D. M. Blei. Reparameterization gradients through acceptance–rejection algorithms. In *Proceedings of the 20th International Conference on Artificial Intelligence and Statistics (AISTATS)*, Fort Lauderdale, USA, Apr 2017. **(Best Paper Award)**.
- F. Lindsten, A. M. Johansen, C. A. Naesseth, B. Kirkpatrick, T. B. Schön, J. Aston, and A. Bouchard-Côté. Divide-and-conquer with sequential Monte Carlo. *Journal of Computational and Graphical Statistics*, 2016.
- T. Rainforth*, C. A. Naesseth*, F. Lindsten, B. Paige, J-W. van de Meent, A. Doucet, and F. Wood. Interacting particle Markov chain Monte Carlo. In *Proceedings of the 33rd International Conference on Machine Learning (ICML)*, New York, USA, Jun 2016. * equal contribution.
- C. A. Naesseth, F. Lindsten, and T. B. Schön. Towards automated sequential Monte Carlo methods for probabilistic graphical models. In *NIPS Workshop on Black Box Learning and Inference*, Montreal, Canada, 2015a.
- T. B. Schön, F. Lindsten, J. Dahlin, J. Wågberg, C. A. Naesseth, A. Svensson, and L. Dai. Sequential Monte Carlo Methods for System Identification. In *Proceedings of the 17th IFAC Symposium on System Identification (SYSID)*, Beijing, China, 2015.
- C. A. Naesseth, F. Lindsten, and T. B. Schön. Nested Sequential Monte Carlo Methods. In *Proceedings of the 32nd International Conference on Machine Learning (ICML)*, Lille, France, Jul 2015b.

- C. A. Naesseth, F. Lindsten, and T. B. Schön. Sequential Monte Carlo for Graphical Models. In *Advances in Neural Information Processing Systems (NIPS) 27*, pages 1862–1870, Montreal, Canada, 2014a.
- C. A. Naesseth, F. Lindsten, and T. B. Schön. Capacity estimation of two-dimensional channels using sequential Monte Carlo. In *Proceedings of the 2014 IEEE Information Theory Workshop (ITW)*, pages 431–435, Hobart, Australia, Nov 2014b.

INVITED TALKS

SDE Matching	2025
BIRS Workshop: Efficient Approximate Bayesian Inference	BIRS
Neural Flow Diffusion Models and SDE Matching	2025
MFO Mini-Workshop on Statistical Challenges for Deep Generative Models	MFO
Diffusions, flows, and other stories	2024
NeurIPS Fest (keynote)	University of Amsterdam
There And Back Again: A Forward Diffusion Tale	2024
Generative models and uncertainty quantification	GenU
Generative Models and Approximate Bayesian Inference	2024
Special Invited Session: Bayesian computational methods	COMPSTAT
There And Back Again: A Diffusion's Tale	2024
Industry-on-Campus Lab (seminar)	Bosch Center for AI and University of Tübingen
Twisted Diffusion Sampling for Accurate Conditional Generation	2023
Plenary talk	ELLIS unConference
Monte Carlo and Variational Methods: Bridging the Gap	2022
Special Invited Session: Grand challenges and advances in Bayesian computation	CMStatistics
Monte Carlo and Variational Methods: Bridging the Gap	2022
Workshop on Monte Carlo and Approximate Dynamic Programming Methods	ESSEC Paris
Variational Bayes Goes to Monte Carlo	2021
Amsterdam Machine Learning lab (seminar)	University of Amsterdam
Machine learning using approximate inference	2020
Savage Award session (contributed talk)	Joint Statistical Meeting
Machine learning using approximate inference	2020
Junior Bayes Beyond the Borders (webinar)	Bocconi University
Variational and Monte Carlo methods	2019
Center for Industrial and Applied Mathematics (seminar)	KTH
Variational and Monte Carlo methods	2019
Department of Mathematical Sciences (seminar)	Chalmers
Variational inference	2018
Department of Information Technology (tutorial)	Uppsala University
Approximate Bayesian inference: Variational and MC methods	2017
Department of Computer Science (seminar)	Linköping University
Monte Carlo methods and proper weighting	2015
Department of Engineering Science (tutorial)	The University of Oxford
Nested Sequential Monte Carlo Methods	2015
SMC Workshop	ENSAE Paris
Sequential Monte Carlo for Probabilistic Graphical Models	2014
School of Mathematics and Statistics (seminar)	University of NSW
Sequential Monte Carlo for Probabilistic Graphical Models	2014
School of Electrical Engineering and Computer Science (seminar)	University of Newcastle

TEACHING

Machine Learning (Undergraduate) Lecturer	2025 – Present University of Amsterdam
Reinforcement Learning (Graduate) Lecturer	2024 – Present University of Amsterdam
Introduction to Machine Learning (Undergraduate) Lecturer	2022 – 2024 University of Amsterdam
Digital Expertise: Introduction to ML (Undergraduate) Guest lecturer	2024 University of Amsterdam
Foundations of Graphical Models (Graduate) Guest lecturer	2019 Columbia University
Sensor Fusion (Graduate) Recitation instructor, teaching and lab assistant	2015 – 2016 Linköping University
Digital Signal Processing (Graduate) Lab assistant	2014 Linköping University
Industrial Control Systems (Graduate) Recitation instructor, teaching and lab assistant	2014 Linköping University
Control Project Laboratory (Graduate) Project supervisor	2014 – 2018 Linköping University
Modeling and Simulation (Graduate) Recitation instructor, teaching and lab assistant	2013 – 2015 Linköping University
Engineering Project (Undergraduate) Project supervisor	2013 Linköping University
Automatic Control (Undergraduate) Recitation instructor, teaching and lab assistant	2012 – 2014 Linköping University
Foundation Course in Mathematics (Undergraduate) Recitation instructor and teaching assistant	2011 Linköping University

PROFESSIONAL SERVICE

ORGANISATION

Symposium on Advances in Approximate Bayesian Inference Co-organizer, Program Chair, Sponsorship Chair	2023 – 2025 AABI
International Conference on Artificial Intelligence and Statistics Workflow Chair	2023 AISTATS

SENIOR PROGRAM COMMITTEE

International Conference on Artificial Intelligence and Statistics Senior Area Chair	2024 – 2025 AISTATS
Conference on Neural Information Processing Systems Area Chair	2025 NeurIPS
Conference on Uncertainty in Artificial Intelligence Area Chair	2024 UAI
International Conference on Artificial Intelligence and Statistics Area Chair	2022 AISTATS

REVIEWING

Dutch Research Council (NWO)	2024
Journal of Machine Learning Research (JMLR)	2020 – 2021
Neural Information Processing Systems (NeurIPS)	2017 – 2020
International Conference on Machine Learning (ICML)	2017 – 2018
International Conference on Learning Representations (ICLR)	2017
International Conference on Artificial Intelligence and Statistics (AISTATS)	2017 – 2018

DOCTORAL COMMITTEES

Fiona Lippert	2025
From weather radars to bird migration fluxes: Process-guided machine learning for spatio-temporal forecasting and inference	University of Amsterdam
Gabriel Bénédict	2024
A Machine Learning Personalization Flow	University of Amsterdam
Salem Lahlou	2023
Advances in uncertainty modelling: from epistemic uncertainty estimation to generalized generative flow networks	Université de Montréal, MILA

PROFESSIONAL DEVELOPMENT

Superb Supervision	2025
Mennen Training & Consultancy	University of Amsterdam
University Teaching Qualification (BKO)	2024
	University of Amsterdam
Leadership Course for Tenure Trackers	2022
Center for Academic Leadership	University of Amsterdam
Learning and Knowledge	2016
Advanced course in higher education pedagogy	Linköping University