

CHRISTIAN ANDERSSON NAESETTH

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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>	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

Best Reviewer Award	2017
Neural Information Processing Systems (NeurIPS)	
Best Paper Award	2017
International Conference on Artificial Intelligence and Statistics (AISTATS)	
<i>Reparameterization Gradients through Acceptance-Rejection Algorithms</i>	
Fulbright Scholarship	2016
Fulbright Commission	
Research Scholarships	2016
Ericsson Research Foundation, Gålöstiftelsen, Bernt Järmarks stiftelse	
Best Poster Award	2014
Summer School on Deep Learning for Image Analysis	
<i>Sequential Monte Carlo for Graphical Models</i>	

RESEARCH FUNDING

Generative models and uncertainty quantification in machine learning	2025 – 2026
Gift funding for 1 postdoc (~EUR 200k) from Bosch (80%) & Scyfer (20%).	
UvA-Bosch Delta Lab	2021 – 2026
Gift funding for 10 PhD students from the Bosch Group.	
Role: Lab manager, PhD co-supervisor.	
Co-PIs: Theo Gevers, Jan-Willem van de Meent.	

ACADEMIC SUPERVISION

PHD CANDIDATES

Rajeev Verma (with Eric Nalisnick, Volker Fischer)	2023 –
University of Amsterdam	
Alexander Timans (with Eric Nalisnick, Kaspar Sakmann, Christoph-Nikolas Straehle)	2022 –
University of Amsterdam	
Metod Jazbec (with Eric Nalisnick, Dan Zhang, Stephan Mandt)	2022 –
University of Amsterdam	
Grigory Bartosh	2022 –
University of Amsterdam	
Mona Schirmer (with Eric Nalisnick, Dan Zhang)	2022 –
University of Amsterdam	
Heiko Zimmermann (with Jan-Willem van de Meent)	2021 – 2025
University of Amsterdam	
<i>Simulation Intelligence Scientist, Pasteur Labs & ISI</i>	

POSTDOCS

Hany Abdulsamad	2025 –
University of Amsterdam	

VISITING PHD STUDENTS

UNIVERSITY OF AMSTERDAM: Markus Müller (2025-2026), Fabian Denoodt (2025), Bahrul Nasution (2025), Raghuram D R (2024), François Cornet (2024).

MASTER STUDENTS

UNIVERSITY OF AMSTERDAM: Maria Marchenko (2026), Odysseas Boufalas (2026), Rohith Prabakaran (2025), Aditya Patra (2025), Nesta Midavaine (2025), Doris Wezenberg (2024).

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

INVITED TALKS

Scalable Variational Inference for SDEs	2025
Workshop on industrial applications of numerical analysis and machine learning	CWI
Generative Modeling and Inverse Problems in Molecule Generation	2025
ChemAI: AI-powered chemical and material innovations	ChemAI
SDE Matching: Scalable Variational Inference for SDEs	2025
The Royal Swedish Academy Of Sciences, AI4Science Symposium	KVA
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
 School of Electrical Engineering and Computer Science (seminar)

2014
 University of Newcastle

TEACHING

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

PROFESSIONAL SERVICE

ORGANISATION

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

SENIOR PROGRAM COMMITTEE

International Conference on Artificial Intelligence and Statistics	2024 – 2026
Senior Area Chair	AISTATS
International Conference on Machine Learning	2026
Area Chair	ICML
Conference on Neural Information Processing Systems	2025
Area Chair	NeurIPS
Conference on Uncertainty in Artificial Intelligence	2024
Area Chair	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, EurIPS)	2017 – 2020, 2025
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 From weather radars to bird migration fluxes: Process-guided machine learning for spatio-temporal forecasting and inference	2025 University of Amsterdam
Gabriel Bénédict A Machine Learning Personalization Flow	2024 University of Amsterdam
Salem Lahlou Advances in uncertainty modelling: from epistemic uncertainty estimation to generalized generative flow networks	2023 Université de Montréal, MILA

PROFESSIONAL DEVELOPMENT

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

PUBLICATIONS

- G. Kerrigan, C. A. Naesseth, and T. Rainforth. A geometric approach to optimal experimental design. *arXiv:2510.2510.14848*, 2025.
- L. Wu, Y. Han, C. A. Naesseth, and J. P. Cunningham. Reverse diffusion sequential Monte Carlo samplers. In *Advances in Neural Information Processing Systems (NeurIPS) 38*, 2025.
- M. Schirmer*, M. Jazbec*, C. A. Naesseth, and E. Nalisnick. Monitoring risks in test-time adaptation. In *Advances in Neural Information Processing Systems (NeurIPS) 38*, 2025. * equal contribution.
- A. Timans*, R. Verma*, E. Nalisnick, and C. A. Naesseth. 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. Naesseth. 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 Workshop Paper Award at AABI 2025)**.
- F. Eijkelboom, H. Zimmermann, S. Vadgama, E. J. Bekkers, M. Welling, C. A. Naesseth*, 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. Naesseth, 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. Naesseth, 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. Naesseth. Equivariant neural diffusion for molecule generation. In *Advances in Neural Information Processing Systems (NeurIPS) 37*, 2024.
- F. Eijkelboom*, G. Bartosh*, C. A. Naesseth, 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. Naesseth, 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. Naesseth, 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. Naesseth. 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. Naesseth, 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. Naesseth. Neural diffusion models. In *Proceedings of the 41st International Conference on Machine Learning (ICML)*, Vienna, Austria, Jul 2024b.
- T. Pandeva, T. Bakker, C. A. Naesseth, and P. Forré. E-evaluating classifier two-sample tests. *Transactions on Machine Learning Research*, 2024.
- L. Wu, B. L. Trippe, C. A. Naesseth, 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.