

Nikolaj Thams

Phone no. +45 25 15 06 29 | E-mail: nikolajthams@gmail.com
Nationality/Citizenship: Danish



Education

University of Copenhagen

PhD in Statistics, with Prof. Jonas Peters
Title: Using causality for distributional robustness

Copenhagen, Denmark

Sep. 2019 – Aug 2022

University of Copenhagen

Master of Science, Statistics (GPA 11.6 out of 12.0)
Thesis: Causal structure learning in multivariate point processes, with *Prof. Niels Richard Hansen*
Spent semester at ETH Zürich (2017)
Interests: *Machine Learning, Stochastic Processes, Graphical Models*

Copenhagen, Denmark

Sep. 2017 – Aug 2019

University of Copenhagen

Bachelor of Science, Mathematical Economics (GPA 12.0 out of 12.0)
Thesis: Weak convergence in abstract spaces, with *Prof. Thomas Mikosch*
Interests: *Micro-/Macroeconomy, Numerical Analysis, Game Theory, Statistics, Financial Models*

Copenhagen, Denmark

Aug. 2016 – March 2017

University of Copenhagen

Bachelor of Science, Mathematics (GPA 11.7 out of 12.0)
Thesis: The lower K-groups of a ring with *Henrik Holm*
Spent semesters at University of Aarhus (2013-2014) and University of Hong Kong (2016)
Interests: *Probability Theory, Analysis, Topology, Algebra*

Copenhagen, Denmark

Aug. 2013 – July 2016

Haderslev Katedralskole

Math A, Physics A, Chemistry A (GPA 11.7 out of 12.0)
SRP: *The Laplace transform and its applications to regularized harmonic fluctuations*

Haderslev, Denmark

Aug. 2009 – July 2012

Work experience (non-teaching)

McKinsey & Co.

Intern
Participated in a program of optimizing the client processes.

Copenhagen, Denmark

May 2018 – Jun 2018

Swiss Re

Student Actuary in Structured Solutions
Priced complex structures on insurance portfolios using Monte Carlo methods (in Java).

Copenhagen, Denmark and Zurich, Switzerland

Aug. 2016 – Feb. 2018

Danish Agency for Culture

Student in the Danmarks Elektroniske Fag- og Forskningsbibliotek
Collected and analyzed data on usage of scientific publications by Danish universities.

Copenhagen, Denmark

Jan. 2015 – Dec. 2015

Teaching experience

University of Copenhagen,

Teaching assistant
Taught courses Analysis 2 (2016, 2018), Measure- and Integration Theory (2016, 2018), Analysis I (2018, 2019), Optimization in Data Science (2019), Statistics A (2020), Models for Complex Systems (2021)

Copenhagen, Denmark

Aug. 2016 – current

Competitions and awards

Causality 4 Climate, NeurIPS competition

Winner
Winner of the NeurIPS 2019 competition on using causal structure learning for earth system science time series data.
Joint work with Lasse Petersen, Martin Jakobsen, Sebastian Weichwald, Phillip Mogensen and Gherardo Varando.

Copenhagen, Denmark

Nov 2019

International Physics Olympiad

Honourable mentions
Participated in national finales, training with top 12, was selected for the top 5 team, representing Denmark at the International Physics Olympiad.

Talinn, Estonia

Jul 2012

Nordic Mathematics Olympiad

Participant

Copenhagen, Denmark

Mar 2012

Participated in national finales, training for top 20 and Nordic finale. Withdrew voluntarily after Nordic finale due to '1-competition-only' rule.

Danish Chemistry Olympiad

Participant

Copenhagen, Denmark

Mar 2012

Participated in national finales, and was selected for training with top 12, but withdrew due to '1-competition-only'-rule.

Academic work

Invariant Policy Learning: A Causal Perspective

2021

Under review

Sorawit Saengkyongam, [Nikolaj Thams](#), Jonas Peters and Niklas Pfister

Testing under Distributional Shifts

2021

Under review

[Nikolaj Thams](#), Sorawit Saengkyongam, Niklas Pfister and Jonas Peters

Regularizing towards Causal Invariance

2021

ICML 2021

Michael Oberst, [Nikolaj Thams](#), Jonas Peters and David Sontag

Causal structure learning from time series: Large regression coefficients may predict causal links better in practice than small p-values

2020

NeurIPS 2019 Competition and Demonstration Track. PMLR, 2020

Sebastian Weichwald, Martin Jakobsen, Phillip Mogensen, Lasse Petersen, [Nikolaj Thams](#) and Gherardo Varando

Local independence testing for Hawkes processes

2020

Under review

[Nikolaj Thams](#) and Niels Richard Hansen

Current research projects

Causal discovery for heterogeneous time series data

With Rikke Nielsen, Sebastian Weichwald and Jonas Peters

Ancestral Search: Learning causal regressors from few environments

With Phillip Mogensen and Jonas Peters

Academic service

- Reviewing duties for UAI (2021), AISTATS (2021), Journal of Mathematical Psychology, CLear (1st Conference on Causal Learning and Reasoning)
- Workflow Chair for UAI (2020). Organize webpage and perform practical duties.
- SCIENCE PhD committee, University of Copenhagen (2019-). On the committee of the PhD school, which has the responsibility regulate and assure the quality of the education of the ~1100 PhD students at the science faculty.
- Head of Student's Council at MATH, University of Copenhagen (2017-2019). In charge of career day, 'course videos', exchange events and several other tasks.
- Founder and organizer of Statistical Study Trip to London and Oxford (2018). Applied for funding, made all arrangements with universities and companies.

Other skills

Language skills

Fluent in Danish and English, proficient in German.

Programming skills

Coding skills in Python, Java, VBA and R.