Stephan Bongers

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PhD Candidate, Amsterdam Machine Learning Lab
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Current Position

2015–present | **Ph.D. Candidate in Artificial Intelligence**
University of Amsterdam (NL)
Research topic: Research the connection between dynamical systems and causal models including cycles and latent confounders
Advisors: Joris M. Mooij and Max Welling

Education

2011–2014 | **M.Sc. in Mathematics** (GPA 3.97/4.00)
Utrecht University (NL)
Thesis: Geometric quantization of symplectic and Poisson manifolds
Advisor: Urs Schreiber (Radboud University Nijmegen, NL)

2005–2011 | **B.Sc. Mathematics, B.Sc. Physics and Astronomy** (both GPA 3.29/4.00)
Utrecht University (NL)
Thesis: The Impact of Relative ITS-TPC Alignment and Calibration on High-Pt Physics in the ALICE Experiment
Advisor: Raimond Snellings (National Institute for Subatomic Physics, NL)

Professional Experience

2014–2015 | **Data scientist at Accenture** (NL)
Topics: Statistical analysis of web and app clickstream data and developed and designed an end-to-end reporting solution

Publications and Preprints

Preprints/In preparation:

2020 | S. Bongers, J. Peters, B. Schölkopf and J.M. Mooij
Theoretical Aspects of Cyclic Structural Causal Models
arXiv:1611.06221 (preprint). *Manuscript in preparation.*

2020 | S. Bongers and J.M. Mooij
From Random Differential Equations to Structural Causal Models: the stochastic case
arXiv:1803.08784 (preprint). *Manuscript in preparation.*

Peer-reviewed conference papers:

2019 | T. Blom, S. Bongers and J.M. Mooij
Beyond Structural Causal Models: Causal Constraints Models
UAI 2019. *Plenary Talk.*

2018 | S. Magliacane, T. van Ommen, T. Claassen, S. Bongers, P. Versteeg and J.M. Mooij
Domain Adaptation by Using Causal Inference to Predict Invariant Conditional Distributions
NeurIPS 2018.

2018 | P.K. Rubenstein, S. Bongers, J.M. Mooij and B. Schölkopf
From Deterministic ODEs to Dynamic Structural Causal Models
UAI 2018.

2017 | P.K. Rubenstein*, S. Weichwald*, S. Bongers, J.M. Mooij, D. Janzing, M. Grosse-Wentrup and B. Schölkopf, *equal contribution
Causal Consistency of Structural Equation Models
UAI 2017. *Plenary Talk.*

For a full list of my publications see my google scholar 🎓.

Presentations and Invited Talks

2018 | **7th Causal Inference Workshop (UAI 2018)**, *Bridging the Gap between Random Differential Equations and Structural Causal Models (Poster)*

2016 | **What if? Workshop (NIPS 2016)**, *Curing the Curse of Non-Recursiveness in Structural Causal Models (Poster)*

2016 | **CMStatistics 2016 (ERCIM 2016)**, *Marginalization and Reduction of Structural Causal Models (Talk)*

Workshops and Summer Schools

2018 | **Deep Learning and Reinforcement Learning Summer School (CIFAR)**, Toronto, CA

2017 | **Machine Learning Summer School**, Tübingen, DE, *Poster Presentation*

2015 | **Bioinformatics and Systems Biology Research School**, *Quantitative and Predictive Modelling*, Wageningen, NL

2011 | **Villa de Leyva Summer School**, *Geometric, algebraic and topological methods for quantum field theory*, Villa de Leyva, CO

2010 | **CERN Summer School**, Geneva, CH
Project: Integration and testing of next to leading order (NLO) Monte Carlo generators in the ALICE offline framework AliRoot
Advisor: Andreas Morsch (CERN, CH)

Scholarships, Grants and Awards

2015 | First prize with UvA team in the CRM Causal Inference Challenge

2011 | International Center for Pure and Applied Mathematics (CIMPA) grant

2011 | A.F. Monnafonds grant

2010 | CERN Summer Student scholarship

Teaching Activities

Teaching assistant (TA):

2017–2018	Machine Learning 2 (Master AI, University of Amsterdam)
2016	Mathematical Principles of Pattern Recognition (Bachelor AI, University of Amsterdam)
2015	Machine Learning 1 (Master AI, University of Amsterdam)
2013	Advanced Mechanics (Bachelor Physics, Utrecht University)
2011–2013	Molecular Modelling and Mathematics (Bachelor Chemistry, Utrecht University)

Thesis supervision:

2016	David Woudenberg (Master thesis, University of Amsterdam)

Event co-organization

2015	31st Conference on Uncertainty in Artificial Intelligence (UAI 2015, Amsterdam)

Skills

Programming/scripting languages: Python, C++, bash
Deep learning frameworks: PyTorch
Favorite tools: Vim, tmux, zsh, git and neovim