

# NILS JANSEN

## CURRICULUM VITAE

### CONTACT AND PERSONAL DETAILS

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### PERSONAL DETAILS

**Nationality** German  
**Born In** Simmerath, Germany  
**Marital Status** Married

### PROFESSIONAL EXPERIENCE

**Since July 2022** Associate Professor, Radboud University, Nijmegen, The Netherlands  
Career track towards full professor

**Feb 2021–June 2022** Assistant Professor, Radboud University, Nijmegen, The Netherlands  
**Tenured.** Career track towards associate professor

**June 2017–Jan 2021** Assistant Professor, Radboud University, Nijmegen, The Netherlands  
**Tenure track position**

**Jan 2017–May 2017** Research Associate, University of Texas at Austin, United States  
**Tenured.** Leading researcher in the Autonomous Systems group headed by Prof. Dr. Ufuk Topcu

**2016–2017** Postdoctoral Research Fellow, University of Texas at Austin, United States  
Research in the Autonomous Systems group headed by Prof. Dr. Ufuk Topcu

**2015–2016** Postdoctoral Researcher, RWTH Aachen University, Germany  
Research and Teaching Assistance at the *Software Modeling and Verification Group*  
headed by Prof. Dr. Ir. Dr. h.c. Joost-Pieter Katoen

### EDUCATION

**March 2015** Dr. rer. nat. in Computer Science, RWTH Aachen, Germany  
Title of Dissertation: *Counterexamples in Probabilistic Verification*  
**Final grade: summa cum laude (with distinction)**  
Supervised by Prof. Dr. Erika Ábrahám and Prof. Dr. Ir. Dr. h.c. Joost-Pieter Katoen

**March 2009** Diploma in Computer Science, RWTH Aachen, Germany  
Title of Diploma Thesis: *Automaton-definable Tree Relations with Cardinality Constraints*  
**Final grade: 1.4 (very good)**  
Supervised by Prof. Dr. Dr. h.c. Wolfgang Thomas

## AWARDS

- 2022 AAAI Distinguished Paper Award  
Title: *Sampling-Based Robust Control of Autonomous Systems with Non-Gaussian Noise*
- 2022 ICAART Best Student Paper Award, With Master Student D. Kerckamp  
Title: *Grouping of Maintenance Actions with Deep Reinforcement Learning and Graph Convolutional Networks*
- 2015 Borchers Badge of RWTH Aachen University for PhD examination with distinction  
Awarded to the top 10% of the PhD students

## SUPERVISION OF PHD STUDENTS AND POSTDOCTORAL RESEARCHERS

- Since 2021 Supervisor of Postdoctoral Researcher Thiago Simao
- 2020–2021 Supervisor of Postdoctoral Researcher Dr. Zaharah A. Bukhsh  
Now assistant professor at TU Eindhoven
- Since 2020 Supervisor of PhD students Thom Badings, Christoph Schmidl, and Marnix Suilen
- Since 2019 Supervisor of PhD student Dennis Gross
- Since 2017 Co-supervisor of PhD student Leonore Winterer  
University of Freiburg
- 2016–2022 Co-supervisor of PhD student Steven Carr  
graduated July 2022, UT Austin
- 2016–2021 Co-supervisor of PhD student Murat Cubuktepe  
graduated August 2021, UT Austin
- 2016–2020 Co-supervisor of PhD student Sebastian Junges  
graduated February 2020, RWTH Aachen, now assistant professor at Radboud University

## ORGANIZATION OF SCIENTIFIC EVENTS

- 2022 Lorentz Center Workshop: Rigorous Automated Planning
- 2021 Flavors of Uncertainty in Verification, Planning, and Optimization (FUNCTION)  
Co-located with ICALP 2021
- 2021 National Symposium for Dutch researchers in the field of Software Engineering (SEN)
- 2018 Dagstuhl Seminar 18121: Machine Learning and Model Checking Join Forces
- 2018 Robots, Morality, and Trust through the Verification Lens  
Co-located with CAV 2018
- 2017 Formal approaches to Explainable VERification (FEVER)  
Co-located with CAV 2017

## REVIEWING ACTIVITIES

### Program Committees:

2023	Quantitative Evaluation of Systems (QEST, co-chair)
2022	BNAIC/BeNeLearn, COMPSAC, IJCAI, ICML, NeurIPS, MOVEP, QEST
2021	AAAI, AAMAS, ADHS, FASE, ICLR, ICML, FM, NeurIPS, QEST, SPIN
2020	Formal Modeling and Analysis of Timed Systems (FORMATS, co-chair), ICML, IJCAI, NeurIPS, QAVS, SETTA
2019	ICANN, IJCAI, NeurIPS, QEST, SETTA
2018	ICT.OPEN, iFM, FORTE, SKILL, TACAS-AR

### PhD Reviewer or Committee Member:

*Steven Carr (UT Austin), Simon Jantsch (TU Dresden), Dario Guidotti (University of Genoa), Ivan Gavran (MPI), Leonore Winterer (University of Freiburg), Dr. Alexis Linard (Radboud University), and Dr. Rick Smetsers (Radboud University)*

### Grant Applications:

*ERC Consolidator, French National Research Agency (ANR)*

### Journal Reviewer:

*ACM Transactions on Modeling and Computer Simulation, ACM Transactions on Computational Logic, Acta Informatica, Journal of Artificial Intelligence Research, International Journal of Robotics Research, Science of Computer Programming, IEEE Control Systems Letter, IEEE Transactions of Reliability, IEEE Transactions on Automatic Control, Journal of Automated Reasoning, Theoretical Computer Science*

### External reviewer:

*ACC, ATVA, CAV, CDC, CONCUR, FACS, FM, FMOODS-FORTE, FORMATS, FOSSACS, FSEN, FSTTCS, FTSCS, HSCC, IFM, Petri Nets, QEST, SIMULTECH, TACAS, TASE, VMCAI*

## INSTITUTIONAL RESPONSIBILITIES

2022	Appointment committee for a full professorship in Data Science at Radboud University
2022	Chair of Appointment committee for a professorship in Machine Learning at Radboud University
2020	Appointment committee for several professorships in Digital Security at Radboud University
Since 2019	Organization of the internal seminars at the Software Science Institute at Radboud University
Since 2018	Member of the Program Committee for teaching (Opleidingscommissie) at Radboud University
2014–2016	Member of the examination board in Computer Science at RWTH Aachen University
2014–2016	Member of the commission for teaching in Computer Science at RWTH Aachen University
2010–2011	Steering committee member of the graduate school AlgoSyn at RWTH Aachen University

## SELECTED RESEARCH STAYS AND WORKSHOPS

2022	UT Austin, USA, with Prof. Dr. Ufuk Topcu
2021	Lorentz Center Workshop on Robust AI (virtual)
2020	TU Delft, NL, with Dr. Matthijs Spaan RWTH University, Germany, with Prof. Dr. Ir. Katoen
2019	UT Austin, USA, with Prof. Dr. Ufuk Topcu Dagstuhl Seminar on Logic and Learning Lorentz Workshop on Formal Methods in the Netherlands Dagstuhl Seminar on Verification and Synthesis of Human-Robot Interaction
2018	KTH Stockholm, SE, with Dr. Jana Tumova TU Graz, Austria, with Prof. Dr. Roderick Bloem TU Delft, NL, with Dr. Neil Yorke-Smith and Dr. Matthijs Spaan Lorentz Workshop on Safety of Future Systems: Science meets Industry
2017	University of Oxford, UK, with Prof. Dr. Marta Kwiatkowska RWTH University, Germany, with Prof. Dr. Ir. Katoen Stony Brook University, NY, USA, with Prof. Dr. Scott Smolka Dagstuhl Seminar on Computer-Assisted Engineering for Robotics and Autonomous Systems
2015	University of Pennsylvania, USA, with Prof. Dr. Ufuk Topcu
2013–2014	Three one-month stays at Universidad Nacional de Cordoba, Argentina, with Prof. Dr. Pedro R. d'Argenio
2010–2015	Frequent stays at University of Freiburg, Germany, with Prof. Dr. Bernd Becker and Dr. Ralf Wimmer

## MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

since 2020	ELLIS European Laboratory for Learning and Intelligent Systems
since 2019	VERSEN Dutch National Association for Software Engineering
since 2016	ETAPS European Joint Conferences on Theory and Practice of Software

## LANGUAGE SKILLS

German	native
English	fluent (C2)
Dutch	basic (A1)
Latin	qualification in Latin

## MEDIA

- 2022 AIhub: Developing safe controllers for autonomous systems under uncertainty authored by Thom Badings and Nils Jansen, published by the Association for the Understanding of Artificial Intelligence
- 2021 Innovation Origins: A new model reduces uncertainty in AI authored by Cindy Cloin
- 2021 Communications of the ACM: Approach to AI Offers More Certainty in the Face of Uncertainty
- 2021 Computable: Radboud maakt kunstmatige intelligentie slimmer Alfred Monterie
- 2021 Bits&Chips: Radboud and TUE help improve AI decision-making Nieke Roos
- 2021 Executive-People: Nieuwe AI benadering biedt meer zekerheid bij onzekerheit

## SELECTED TALKS 2017–2022

- Upcoming in 2022: Invited talk at RL-CONFORM Workshop (co-located with IROS 2022)
- Safe RL: A Collection of Flavors. Invited Talk, 1st Workshop on Safe RL (co-located with IJCAI 2022).
- Safe Planning under Epistemic Uncertainty and Partial Information. Invited Talk, SNR, 2021 (virtual).
- Dependable Artificial Intelligence and Control. Invited Industry Talk, Alliander, 2021, Nijmegen, NL (virtual).
- Towards Dependable and Robust Planning: Learning and Verification. Invited Talk, Lorentz Center Workshop on Robust AI, 2021, NL (virtual).
- Towards Dependable Artificial Intelligence: Learning and Verification. Invited Talk, IST, 2020, Austria (virtual).
- Planning under Uncertainty - AI Safety via Formal Verification. Invited Talk, NASA Formal Methods AI-SAFETY, 2020, Mountain View, USA (virtual).
- Planning under Partial Observability: Performance versus Formal Guarantees. Invited Talk, Eindhoven University, 2020, NL.
- Prognostics and Optimization for Robust Predictive Maintenance (How to Combine Data and Models). Invited Industry Talk, Nexperia, 2020, Nijmegen, NL.
- Planning under Partial Observability: A Betrothal of Artificial Intelligence and Formal Verification. Invited Talk, Freiburg University, 2019, DE.
- Counterexample-Guided Policy Improvement for POMDPs Using Recurrent Neural Networks. Dagstuhl Seminar on Logic and Learning 2019, DE.
- Planning under Partial Observability: A Betrothal of Formal Verification and Machine Learning. Invited Talk, LearnAut 2019, Vancouver, CA.
- Convex Optimization meets Parameter Synthesis for MDPs. Invited Talk, SynCop 2019, Prague, CZ.
- Automation and Planning under Uncertainty and Partial Observability. Invited Industry Talk, cm-labs, 2019, Montreal, CA.
- Correct-by-Construction Policies for POMDPs. Invited Talk, SNR 2019, Montreal, CA.
- Motion Planning under Uncertainty and Partial Observability. Invited Talk, Graz University, 2018, AU.

- Convex Optimization for Parametric Markov Models: A Tale of 1001 Parameters. Invited Talk, Freiburg University, 2018, DE.
- Verified Safety in Machine Learning. Invited Talk, Freiburg University, DE, 2018.
- Planning under Uncertainty and Partial Observability: Machine Learning and Formal Methods (And Humans) Join Forces? Invited Talk, TU Delft, 2018, NL.
- Motion Planning under Uncertainty and Partial Observability. Invited Talk, University of Oxford, 2017, UK.
- Motion Planning under Uncertainty and Partial Observability. Invited Talk, UnRAVEL Research Training School, RWTH Aachen University, 2017, DE.
- Probabilistic Verification for Cognitive Models. Invited Talk, RWTH Aachen University, 2017, DE.
- Sequential Convex Programming for the Efficient Verification of Parametric MDPs. Invited Talk, Stony Brook University, 2017, USA.
- Shared Control. Dagstuhl Seminar on Computer-Assisted Engineering for Robotics and Autonomous Systems 2017, DE.

So far, I published over 70 peer-reviewed articles in conference proceedings or journals. Aside from the number of papers published, a relevant output indicator is the number of citations and correspondingly an author's H-index and i10-index. According to Google Scholar, I have over 1 700 citations, H-index 26, and i10-index 43 (see Google Scholar Page)

#### BOOK CHAPTERS, EDITED VOLUMES, AND PHD THESIS

- [1] Murat Cubuktepe, **Nils Jansen**, and Ufuk Topcu. "Shared Control with Human Trust and Workload Models". In: *Cyber-Physical-Human Systems: Fundamentals and Applications*. John Wiley & Sons, 2022, pp. 337–373.
- [2] Nils Jansen, Mariëlle Stoelinga, and Petra van den Bos, eds. *A Journey from Process Algebra via Timed Automata to Model Learning - Essays Dedicated to Frits Vaandrager on the Occasion of His 60th Birthday*. Vol. 13560. Lecture Notes in Computer Science. Springer, 2022.
- [3] Nathalie Bertrand and **Nils Jansen**, eds. *Formal Modeling and Analysis of Timed Systems - 18th International Conference, FORMATS 2020, Vienna, Austria, September 1-3, 2020, Proceedings*. Vol. 12288. Lecture Notes in Computer Science. Springer, 2020.
- [4] Radu Calinescu, Marco Autili, Javier Cámara, Antinisca Di Marco, Simos Gerasimou, Paola Inverardi, Alexander Perucci, **Nils Jansen**, Joost-Pieter Katoen, Marta Kwiatkowska, et al. "Synthesis and Verification of Self-aware Computing Systems". In: *Self-Aware Computing Systems*. Springer International Publishing, 2017, pp. 337–373.
- [5] **Nils Jansen**. "Counterexamples in Probabilistic Verification". **Dissertation**. RWTH Aachen University, 2015.

#### JOURNAL PUBLICATIONS

- [6] Thom S. Badings, Licio Romao, Alessandro Abate, David Parker, Hasan A. Poonawala, Mariëlle Stoelinga, and Nils Jansen. "Robust Control for Dynamical Systems with Non-Gaussian Noise via Formal Abstractions". In: *J. Artif. Intell. Res.* (2022).
- [7] Thom Badings, Murat Cubuktepe, **Nils Jansen**, Sebastian Junges, Joost-Pieter Katoen, and Ufuk Topcu. "Scenario-Based Verification of Uncertain Parametric MDPs". In: *Int. J. Softw. Tools Technol. Transf. (STTT)* (2022). to appear.
- [8] Murat Cubuktepe, **Nils Jansen**, Sebastian Junges, Joost-Pieter Katoen, and Ufuk Topcu. "Convex Optimization for Parameter Synthesis in MDPs". In: *IEEE Trans. Autom. Control.* (2022). to appear.
- [9] Mohamadreza Ahmadi, **Nils Jansen**, Bo Wu, and Ufuk Topcu. "Control Theory Meets POMDPs: A Hybrid Systems Approach". In: *IEEE Trans. Autom. Control.* 66.11 (2021), pp. 5191–5204.
- [10] Zaharah Allah Bukhsh, **Nils Jansen**, and Aaqib Saeed. "Damage detection using in-domain and cross-domain transfer learning". In: *Neural Comput. Appl.* 33.24 (2021), pp. 16921–16936.

- [11] Steven Carr, **Nils Jansen**, and Ufuk Topcu. “Task-Aware Verifiable RNN-Based Policies for Partially Observable Markov Decision Processes”. In: *Journal of Artificial Intelligence Research* 72 (2021), pp. 819–847.
- [12] Murat Cubuktepe, **Nils Jansen**, Mohammed Alshiekh, and Ufuk Topcu. “Synthesis of Provably Correct Autonomy Protocols for Shared Control”. In: *IEEE Trans. Autom. Control.* 66.7 (2021), pp. 3251–3258.
- [13] Hadas Kress-Gazit, Kerstin Eder, Guy Hoffman, Henny Admoni, Brenna Argall, Rüdiger Ehlers, Christoffer Heckman, **Nils Jansen**, Ross A. Knepper, Jan Kretínský, Shelly Levy-Tzedek, Jamy Li, Todd D. Murphey, Laurel D. Riek, and Dorsa Sadigh. “Formalizing and guaranteeing human-robot interaction”. In: *Communications of the ACM* 64.9 (2021), pp. 78–84.
- [14] Leonore Winterer, Sebastian Junges, Ralf Wimmer, **Nils Jansen**, Ufuk Topcu, Joost-Pieter Katoen, and Bernd Becker. “Strategy Synthesis for POMDPs in Robot Planning via Game-Based Abstractions”. In: *IEEE Trans. Autom. Control.* 66.3 (2021), pp. 1040–1054.
- [15] Ralf Wimmer, **Nils Jansen**, Erika Abraham, and Joost-Pieter Katoen. “High-level Counterexamples for Probabilistic Automata”. In: *Logical Methods in Computer Science* 11.1:15 (2015).
- [16] **Nils Jansen**, Ralf Wimmer, Erika Ábrahám, Barna Zajzon, Joost-Pieter Katoen, Bernd Becker, and Johann Schuster. “Symbolic counterexample generation for large discrete-time Markov chains”. In: *Science of Computer Programming* 91 (2014), pp. 90–114.
- [17] Ralf Wimmer, **Nils Jansen**, Erika Ábrahám, Joost-Pieter Katoen, and Bernd Becker. “Minimal counterexamples for linear-time probabilistic verification”. In: *Theoretical Computer Science* 549 (2014), pp. 61–100.
- [18] Federico Olmedo, Friedrich Gretz, **Nils Jansen**, Benjamin Lucien Kaminski, Joost-Pieter Katoen, and Annabelle McIver. “Conditioning in Probabilistic Programming”. In: *ACM Trans. Program. Lang. Syst.* 40.1 ( ), 4:1–4:5.

#### CONFERENCE AND WORKSHOP PROCEEDINGS

- [19] Thom S. Badings, Licio Romano, Alessandro Abate, and Nils Jansen. “Probabilities Are Not Enough: Formal Controller Synthesis for Stochastic Dynamical Models with Epistemic Uncertainty”. In: *AAAI*. 2023.
- [20] Steven Carr, Nils Jansen, Sebastian Junges, and Ufuk Topcu. “Safe Reinforcement Learning via Shielding under Partial Observability”. In: *AAAI*. 2023.
- [21] Thiago D. Simão, Marnix Suilen, and Nils Jansen. “Safe Policy Improvement for POMDPs via Finite-State Controllers”. In: *AAAI*. 2023.
- [22] Thom S. Badings, Alessandro Abate, Nils Jansen, David Parker, Hasan A. Poonawala, and Mariëlle Stoelinga. “Sampling-Based Robust Control of Autonomous Systems with Non-Gaussian Noise”. In: *AAAI*. AAAI Press, 2022, pp. 9669–9678.
- [23] Thom S. Badings, Alessandro Abate, **Nils Jansen**, David Parker, Hasan A. Poonawala, and Mariëlle Stoelinga. “Sampling-Based Robust Control of Autonomous Systems with Non-Gaussian Noise”. In: *AAAI*. *Distinguished Paper Award*. AAAI Press, 2022, pp. 9669–9678.
- [24] David Kerckamp, Zaharah Allah Bukhsh, Yingqian Zhang, and **Nils Jansen**. “Grouping of Maintenance Actions with Deep Reinforcement Learning and Graph Convolutional Networks”. In: *ICAART* (2). *Best Student Paper Award*. SCITEPRESS, 2022, pp. 574–585.
- [25] Marnix Suilen, Thiago D. Simão, David Parker, and Nils Jansen. “Robust Anytime Learning of Markov Decision Processes”. In: *NeurIPS*. 2022.
- [26] Thom S. Badings, Arnd Hartmanns, **Nils Jansen**, and Marnix Suilen. “Balancing Wind and Batteries: Towards Predictive Verification of Smart Grids”. In: *NFM*. Vol. 12673. Lecture Notes in Computer Science. Springer, 2021, pp. 1–18.
- [27] Steven Carr, **Nils Jansen**, Sudarshanan Bharadwaj, Matthijs T. J. Spaan, and Ufuk Topcu. “Safe Policies for Factored Partially Observable Stochastic Games”. In: *Robotics: Science and Systems*. 2021.
- [28] Murat Cubuktepe, **Nils Jansen**, Sebastian Junges, Ahmadreza Marandi, Marnix Suilen, and Ufuk Topcu. “Robust Finite-State Controllers for Uncertain POMDPs”. In: *AAAI*. AAAI Press, 2021, pp. 11792–11800.

- [29] Sebastian Junges, **Nils Jansen**, and Sanjit A. Seshia. "Enforcing Almost-Sure Reachability in POMDPs". In: *CAV (2)*. Vol. 12760. Lecture Notes in Computer Science. Springer, 2021, pp. 602–625.
- [30] Stefan Pranger, Bettina Könighofer, Martin Tappler, Martin Deixelberger, **Nils Jansen**, and Roderick Bloem. "Adaptive Shielding under Uncertainty". In: *ACC*. IEEE, 2021, pp. 3467–3474.
- [31] Thiago D. Simão, **Nils Jansen**, and Matthijs T. J. Spaan. "AlwaysSafe: Reinforcement Learning without Safety Constraint Violations during Training". In: *AAMAS*. ACM, 2021, pp. 1226–1235.
- [32] Steven Carr, **Nils Jansen**, and Ufuk Topcu. "Verifiable RNN-Based Policies for POMDPs Under Temporal Logic Constraints". In: *IJCAI*. ijcai.org, 2020, pp. 4121–4127.
- [33] Murat Cubuktepe, **Nils Jansen**, Sebastian Junges, Joost-Pieter Katoen, and Ufuk Topcu. "Scenario-Based Verification of Uncertain MDPs". In: *TACAS*. Vol. 12078. LNCS. Springer, 2020, pp. 287–305.
- [34] Dennis Gross, **Nils Jansen**, Guillermo A. Pérez, and Stephan Raaijmakers. "Robustness Verification for Classifier Ensembles". In: *ATVA*. Vol. 12302. Lecture Notes in Computer Science. Springer, 2020, pp. 271–287.
- [35] Richard den Hollander, Ajaya Adhikari, Ioannis Tolios, Michael van Bekkum, Anneloes Bal, Stijn Hendriks, Maarten Kruithof, Dennis Gross, **Nils Jansen**, Guillermo Perez, et al. "Adversarial patch camouflage against aerial detection". In: *Artificial Intelligence and Machine Learning in Defense Applications II*. Vol. 11543. International Society for Optics and Photonics. 2020, 115430F.
- [36] Bettina Könighofer, Florian Lorber, **Nils Jansen**, and Roderick Bloem. "Shield Synthesis for Reinforcement Learning". In: *ISoLA (1)*. Vol. 12476. Lecture Notes in Computer Science. Springer, 2020, pp. 290–306.
- [37] Dung T. Phan, Radu Grosu, **Nils Jansen**, Nicola Paoletti, Scott A. Smolka, and Scott D. Stoller. "Neural Simplex Architecture". In: *NFM*. Vol. 12229. Lecture Notes in Computer Science. Springer, 2020, pp. 97–114.
- [38] Marnix Suilen, **Nils Jansen**, Murat Cubuktepe, and Ufuk Topcu. "Robust Policy Synthesis for Uncertain POMDPs via Convex Optimization". In: *IJCAI*. ijcai.org, 2020, pp. 4113–4120.
- [39] **Nils Jansen**, Bettina Könighofer, Sebastian Junges, Alex Serban, and Roderick Bloem. "Safe Reinforcement Learning Using Probabilistic Shields (Invited Paper)". In: *CONCUR*. Vol. 171. LIPIcs. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2020, 3:1–3:16.
- [40] Leonore Winterer, Ralf Wimmer, **Nils Jansen**, and Bernd Becker. "Strengthening Deterministic Policies for POMDPs". In: *NFM*. Vol. 12229. Lecture Notes in Computer Science. Springer, 2020, pp. 115–132.
- [41] Steven Carr, **Nils Jansen**, Ralf Wimmer, Alexandru Constantin Serban, Bernd Becker, and Ufuk Topcu. "Counterexample-Guided Strategy Improvement for POMDPs Using Recurrent Neural Networks". In: *IJCAI*. ijcai.org, 2019, pp. 5532–5539.
- [42] Milan Ceska, Christian Dehnert, **Nils Jansen**, Sebastian Junges, and Joost-Pieter Katoen. "Model Repair Revamped - - On the Automated Synthesis of Markov Chains". In: *From Reactive Systems to Cyber-Physical Systems*. Vol. 11500. Lecture Notes in Computer Science. Springer, 2019, pp. 107–125.
- [43] Milan Ceska Jr., **Nils Jansen**, Sebastian Junges, and Joost-Pieter Katoen. "Shepherding Hordes of Markov Chains". In: *TACAS*. Vol. 11428. LNCS. Springer, 2019, pp. 172–190.
- [44] **Nils Jansen**, Laura R. Humphrey, Jana Tumova, and Ufuk Topcu. "Structured Synthesis for Probabilistic Systems". In: *NFM*. Vol. 11460. LNCS. Springer, 2019, pp. 237–254.
- [45] **Nils Jansen**, Sebastian Junges, Joost-Pieter Katoen, Tim Quatmann, Bernd Becker, Ralf Wimmer, and Leonore Winterer. "Correct-by-construction policies for POMDPs". In: *SNR*. ACM, 2019, pp. 6–8.
- [46] Mohamadreza Ahmadi, Murat Cubuktepe, **Nils Jansen**, and Ufuk Topcu. "Verification of Uncertain POMDPs Using Barrier Certificates". In: *Allerton*. IEEE, 2018, pp. 115–122.
- [47] Steven Carr, **Nils Jansen**, Ralf Wimmer, Jie Fu, and Ufuk Topcu. "Human-in-the-Loop Synthesis for Partially Observable Markov Decision Processes". In: *ACC*. IEEE, 2018, pp. 762–769.
- [48] Murat Cubuktepe, **Nils Jansen**, Sebastian Junges, Joost-Pieter Katoen, and Ufuk Topcu. "Synthesis in pMDPs: A Tale of 1001 Parameters". In: *ATVA*. Vol. 11138. LNCS. Springer, 2018, pp. 160–176.
- [49] Sebastian Junges, **Nils Jansen**, Joost-Pieter Katoen, Ufuk Topcu, Ruohan Zhang, and Mary M. Hayhoe. "Model Checking for Safe Navigation Among Humans". In: *QEST*. Vol. 11024. LNCS. Springer, 2018, pp. 207–222.



- [50] Sebastian Junges, **Nils Jansen**, Ralf Wimmer, Tim Quatmann, Leonore Winterer, Joost-Pieter Katoen, and Bernd Becker. "Finite-State Controllers of POMDPs using Parameter Synthesis". In: *UAI*. AUAU Press, 2018, pp. 519–529.
- [51] **Nils Jansen**, Joost-Pieter Katoen, Pushmeet Kohli, and Jan Kretinsky. "**Machine Learning and Model Checking Join Forces (Dagstuhl Seminar 18121)**". In: *Dagstuhl Reports* 8.3 (2018), pp. 74–93.
- [52] Murat Cubuktepe, **Nils Jansen**, Sebastian Junges, Joost-Pieter Katoen, Ivan Papusha, Hasan A. Poonawala, and Ufuk Topcu. "Sequential Convex Programming for the Efficient Verification of Parametric MDPs". In: *TACAS*. Vol. 10206. LNCS. 2017, pp. 133–150.
- [53] **Nils Jansen**, Murat Cubuktepe, and Ufuk Topcu. "Synthesis of Shared Control Protocols with Provable Safety and Performance Guarantees". In: *ACC*. IEEE, 2017, pp. 1866–1873.
- [54] Leonore Winterer, Sebastian Junges, Ralf Wimmer, **Nils Jansen**, Ufuk Topcu, Joost-Pieter Katoen, and Bernd Becker. "Motion planning under partial observability using game-based abstraction". In: *CDC*. IEEE, 2017, pp. 2201–2208.
- [55] Sebastian Junges, **Nils Jansen**, Joost-Pieter Katoen, and Ufuk Topcu. "Probabilistic Verification for Cognitive Models". In: *CDCAS*. AAAI Technical Reports FS-16. AAAI Press, 2016.
- [56] Sebastian Junges, **Nils Jansen**, Christian Dehnert, Ufuk Topcu, and Joost-Pieter Katoen. "Safety-Constrained Reinforcement Learning for MDPs". In: *TACAS*. Vol. 9636. LNCS. Springer, 2016, pp. 130–146.
- [57] Francesco Leofante, Simone Vuotto, Erika Ábrahám, Armando Tacchella, and **Nils Jansen**. "Combining Static and Runtime Methods to Achieve Safe Standing-Up for Humanoid Robots". In: *ISOLA*. Vol. 9952. LNCS. 2016, pp. 496–514.
- [58] Tim Quatmann, Christian Dehnert, **Nils Jansen**, Sebastian Junges, and Joost-Pieter Katoen. "Parameter Synthesis for Markov Models: Faster Than Ever". In: *ATVA*. Vol. 9938. LNCS. 2016, pp. 50–67.
- [59] **Nils Jansen**, Christian Dehnert, Benjamin Lucien Kaminski, Joost-Pieter Katoen, and Lukas Westhofen. "Bounded Model Checking for Probabilistic Programs". In: *ATVA*. Vol. 9938. LNCS. 2016, pp. 68–85.
- [60] Christian Dehnert, Sebastian Junges, **Nils Jansen**, Florian Corzilius, Matthias Volk, Harold Brountjes, Joost-Pieter Katoen, and Erika Abraham. "PROPhESY: A PRObabilistic ParamETER SYnthesis Tool". In: *CAV*. Vol. 9206. 2015, pp. 214–231.
- [61] Joost-Pieter Katoen, Friedrich Gretz, **Nils Jansen**, Benjamin Lucien Kaminski, and Federico Olmedo. "Understanding Probabilistic Programs". In: *Correct System Design - Symposium in Honor of Ernst-Rüdiger Olderog on the Occasion of His 60th Birthday*. Vol. 9360. LNCS. Springer, 2015, pp. 15–32.
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