

CURRICULUM VITAE
PROF. DR. HELLE HVID HANSEN

PERSONAL INFORMATION

Name : Helle Hvid Hansen
Affiliation : Fundamental Computing group,
Bernoulli Institute for Maths, CS and AI,
Faculty of Science and Engineering (FSE),
University of Groningen.
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ACADEMIC POSITIONS

June 2020 – present: *Associate Professor in Logic and Semantics of Computation (Adjuncthoogleraar, tenured with ius promovendi)*,
Bernoulli Institute for Maths, CS and AI,
University of Groningen, The Netherlands.
Nov 2014 – May 2020: *Assistant Professor (tenure track)*,
Faculty of Technology, Policy and Management (TPM),
Delft University of Technology, The Netherlands.
Dec 2011 – Oct 2014: *Postdoctoral researcher and Veni research fellow*,
Institute for Computing and Information Sciences (ICIS),
Radboud Universiteit Nijmegen, The Netherlands.
Jan 2009 – Nov 2011: *Postdoctoral researcher*
Dept. of Mathematics and Computer Science,
Eindhoven University of Technology, The Netherlands.

QUALIFICATIONS

Ph.D. in Computer Science, Vrije Universiteit Amsterdam, 14 May 2009.
Dissertation *Coalgebraic Modelling: Applications in Automata Theory and Modal Logic*.
Supervisors: Jan Rutten, Yde Venema, Clemens Kupke.
Assessment committee: Johan van Benthem, Marcello Bonsangue, Mai Gehrke, H. Peter Gumm,
Bart Jacobs, Jan Willem Klop and Erik de Vink
M.Sc. Computer Science, University of Amsterdam, 6 Aug 2004.
Master's thesis *Tableau Games for Coalition Logic and Alternating-time Temporal Logic*.
Supervisors: Marc Pauly and Breannán Ó'Nualláin.
M.Sc. Mathematics, University of Amsterdam, 16 Sep 2003.
Master's thesis *Monotonic Modal Logics*. Supervisor: Yde Venema.

EDUCATION

- 2004 – 2008 : *Vrije Universiteit Amsterdam* and *Centrum Wiskunde & Informatica*.
PhD candidate.
- 1996 – 2004 : *University of Amsterdam, The Netherlands*.
Double Master in Mathematics and Computer Science.
- 2000 : *McGill University, Montréal (Québec), Canada*.
Exchange student (spring and summer terms). Courses taken in Computer Science, English and Anthropology departments.
- 1993 – 1994 : *Århus University, Denmark*.
First year successfully completed of 5-yr *Kandidat* programme in Mathematics and Computer Science.

GRANTS, RECOGNITION AND AWARDS

- 2025: Invited speaker at *Gothenburg Cyclothon (Trends in cyclic and ill-founded proofs)*, Gothenburg, 24–26 Sep 2025.
- 2024: NWO-XL grant “Cyclic Structures in Programs and Proofs”, co-PI, one PhD position (310k€) and one shared Postdoc position (300k€) as part of consortium grant of total 3mill€, Dutch Research Council (NWO).
- 2024: Invited speaker at the *15th International Conference on Advances in Modal Logic (AiML 2024)*, Prague, 19–23 Aug 2024. [Cancelled due to illness]
- 2024: Invited speaker at the *30th Workshop on Logic, Language, Information and Computation (WoLLIC 2024)*, Bern, 10–13 Jun 2024. [Cancelled due to illness]
- 2022: Teaching award for being the Most Organized Course Coordinator, academic year 2021-2022, selected by the students of BSc Computing Science, University of Groningen.
- 2022: Aspasia grant, PI, 200,000€, Dutch Research Council (NWO). (Awarded based on 2016 Vidi application.)
- 2021: Invited speaker at the *2021 Workshop on Polynomial Functors*, Topos Institute, Berkeley, 15–19 Mar 2021 (online).
- 2019: Invited speaker at *Circularity in Syntax and Semantics*, University of Gothenburg, 20–22 Nov 2019.
- 2017: Invited speaker at *Algebra and Coalgebra Meet Proof Theory (ALCOP VIII)*, Univ. of Strathclyde, 10–12 Apr 2017.
- 2015: Invited speaker at the *11th International Tbilisi Symposium on Language, Logic and Computation (TbiLLC 2015)*, Tbilisi, 21–26 Sep 2015.
- 2015: ICTAC’15 paper “Newton series, coinductively” (with Basold, Pin and Rutten) [35] was selected as one of the best papers of the conference and invited for the special journal issue in *Mathematical Structures in Computer Science* [8].
- 2015: Best Paper award for the RTA’15 paper “A coinductive treatment of infinitary term rewriting and equational reasoning” (with Endrullis, Hendriks, Polonsky and Silva) [37], and invited for the special journal issue of *Logical Methods in Computer Science* for the best papers of RTA’15 and TCLA’15 [9].
- 2014: Delft Technology Fellowship, 70% of my salary for 6 years plus a 100,000€ start-up package, College van Bestuur, TU Delft.
- 2014: KNAW Congresssubsidie, 2,295€ from the Koninklijke Nederlandse Akademie voor de Wetenschappen (KNAW) as funding for the organisation of the workshop *ALCOP 2015*.
- 2013: Funding for workshop *Representing Streams II (Jan 2014)*, 14,000€ from Lorentz Center Leiden, 5,000€ from STAR cluster, 3,000€ from DIAMANT cluster, 2013.
- 2013: CALCO’13 paper “Presenting distributive laws ” (with Bonsangue, Kurz and Rot) [39] was selected as one of the best papers of the conference and invited for the special journal issue in *Logical Methods in Computer Science* [11].

- 2012: Veni grant, PI, 249,200€, Dutch Research Council (NWO).
- 2008: CMCS'08 paper “Coalgebraising subsequential transducers” [41] was selected as one of the best papers of the conference and invited for the special journal issue in [Information and Computation](#) [15].
- 2007: CALCO'07 paper “Bisimulation for neighbourhood structures ” (with Kupke and Pacuit) [42] was selected as one of the best papers of the conference and invited for the special journal issue in [Logical Methods in Computer Science](#) [17].
- 2004–2009: Various travel grants from conferences (450€), Promovendifonds VUA (1,700€), STUNTS-beurs UvA (360€).
- 2000: Exchange student grant from the University of Amsterdam for 6 months at McGill University, Montréal, Canada. Tuition waiver estimated value 10,000 CAD.

RESEARCH TEAM

Current PhD students

- Anton Chernev (UG). Sep 2022 – present. Thesis topic: Logic, coalgebra and semantics of computing. (Supervised with: Clemens Kupke (U Strathclyde)).
- Vitor Rodrigues Greati (UG). June 2022 – present. Thesis topic: Non-classical logics through proof theory. (Main supervisor: Revantha Ramanayake (UG)).
- Valentina Trucco Dalmas (UG). March 2022 – present. Thesis topic: Proof theory of modal logics. (Supervised with: Revantha Ramanayake (UG)).

Graduated PhD students

- Aloïs Rosset (VU Amsterdam). Graduation date: 28 April 2025. Thesis title: *Uniform Monad Presentations and Graph Quasitoposes*. Supervised with: Jörg Endrullis (VUA), Wan Fokkink (VUA).
- Fatemeh Seifan (University of Amsterdam). Graduation date: 5 June 2024. Thesis title: *Coalgebraic Fixpoint Logic: Expressivity and Completeness results*. Supervised with: Yde Venema (UvA) and Sebastian Enqvist (U Stockholm).
- Graciela Nava Guerrero (TU Delft). Graduation date: 25 March 2022. Thesis title: *An Agent-Based Exploration of Complex Heat Transitions in the Netherlands*. Supervised with: Zofia Lukszo (TUD) and Gijsbert Korevaar (TUD).
- Henning Basold (Radboud University). Graduation date: 19 April 2018. Thesis title: *Mixed Inductive-Coinductive Reasoning: Types, Programs and Logic*. Supervised with: Jan Rutten (RU, CWI) and Herman Geuvers (RU).
- Zeinab Bakhtiari (LORIA Nancy, France). Graduation date: 6 Dec 2017. Thesis title: *The Dynamics of Incomplete and Inconsistent Information: Applications of Logic, Algebra and Coalgebra*. Supervised with: Hans van Ditmarsch (LORIA).

Postdocs

- Wolfgang Poiger (UG). Sep 2024 – Feb 2025.

ACADEMIC ACTIVITIES

Invited Speaker at International Events

1. [Gothenburg Cyclothon \(Trends in cyclic and ill-founded proofs\)](#), Gothenburg, 24–26 Sep 2025.
2. [15th International Conference on Advances in Modal Logic \(AiML 2024\)](#), Prague, 19–23 Aug 2024. [Cancelled due to illness]
3. [30th Workshop on Logic, Language, Information and Computation \(WoLLIC 2024\)](#), Bern, 10–13 Jun 2024. [Cancelled due to illness]
4. [2021 Workshop on Polynomial Functors](#), Topos Institute, Berkeley, 15–19 Mar 2021 (online).
5. [Logic and Structure in Computer Science and Beyond](#), Lorentz Center, Leiden, 9–13 Dec 2019.

6. [Circularity in Syntax and Semantics](#), University of Gothenburg, 20–22 Nov 2019.
7. [Second Workshop on Open Games](#), University of Oxford, 4–6 Jul 2018.
8. [Algebra and Coalgebra Meet Proof Theory \(ALCOP VIII\)](#), Univ. of Strathclyde, 10–12 Apr 2017.
9. [11th International Tbilisi Symposium on Language, Logic and Computation \(TbiLLC 2015\)](#), Tbilisi, 21–26 Sep 2015.

Invited Speaker at Events in the Netherlands:

1. [Alice & Eve 2022](#), Delft University of Technology, 18 Nov 2022. [Cancelled due to illness]
2. [Workshop Dynamics in Logic](#), Delft University of Technology, 29 Oct 2016.
3. [COIN \(Coalgebra in the Netherlands\)](#), Radboud University Nijmegen, 9 Nov 2015.
4. [Kaleidoskoopdag, Wiskunde in de Digitale Wereld](#), symposium by and for Math students, Radboud University Nijmegen, 17 May 2013.
5. [COIN \(Coalgebra in the Netherlands\)](#), CWI Amsterdam, 3 Jun 2013.
6. [COIN \(Coalgebra in the Netherlands\)](#), CWI Amsterdam, 4 Oct 2012.
7. [CeDICT Day on Dependable Systems](#), Utrecht, The Netherlands, 24 April 2009.
8. [Coalgebra Day](#), Radboud University Nijmegen, 30 October 2006.
9. [Forth and Back for 40 Years](#) (symposium on the occasion of the 40th anniversary of the p-morphism), ILLC, University of Amsterdam, 27 June 2006.

Invitations to Scientific Meetings

1. [Categories for Automata and Language Theory](#), 30 Mar-4 Apr 2025, Dagstuhl, Germany.
2. [Behavioural Metrics and Quantitative Logics](#), 20-25 Oct 2024, Dagstuhl, Germany.
3. [IFIP Working Group 2.1 Algorithmic Languages and Calculi](#), 6-10 Jan 2020, Otterlo, the Netherlands.
4. [Open Problems in Concurrency \(OPCT 2019\)](#), 14-15 Jan 2019, Cascais/Lisbon, Portugal.
5. [Algebraic Proof Theory for Social Behaviour](#), 2-6 July 2018, TU Delft, Netherlands.
6. [Applied Category Theory 30](#) April-4 May 2018, Lorentz Center, Leiden, The Netherlands.
7. [Applied Category Theory: Bridging Theory and Practice](#), 15-16 March 2018, NIST, USA.
8. [Workshop at the Occasion of the PhD defence of Zeinab Bakhtiari](#), 4 Dec 2017, LORIA, Nancy, France.
9. [Shonan Workshop on Enhanced Coinduction](#), 13-17 Nov 2017, Shonan Village Center, Japan.
10. [Workshop on Open Games](#), 10-12 Jul 2017, University of Strathclyde, UK.
11. [Logics, Decisions, and Interaction](#), 24-28 Oct 2016, Lorentz Center, Leiden, The Netherlands.
12. [Emerging Institutions: Design or Evolution?](#), 5-9 Sep 2016, Lorentz Center, Leiden, The Netherlands.
13. [Unified Correspondence](#), 15-19 Feb 2016, Lorentz Center, Leiden, The Netherlands.
14. [Samson@60](#), Workshop on the Occasion of the 60th Birthday of Samson Abramsky, 28-30 May 2013, University of Oxford, UK.
15. [Coalgebraic Semantics of Reflexive Economics](#), 18-21 Jan 2015, Dagstuhl, Germany.
16. [Logics for Social Behaviours](#), 10-14 Nov 2014, Lorentz Center, Leiden, The Netherlands.
17. [Coalgebras in Computation, Logic, Probability and Quantum Physics](#), 18-21 March 2013, Bellairs Research Institute, Barbados.
18. [Representing Streams](#), Dec 2012, Lorentz Center, Leiden.
19. [Second Dagstuhl Seminar on Coalgebraic Logics](#), 7-12 Oct 2012, Dagstuhl, Germany.
20. [Railway Safety Technology Research Centre \(RSTRC\) Workshop](#), Sep 2011, University of York, UK.
21. [Categorical Flow of Information in Quantum Physics and Linguistics](#), Oct 2010, University of Oxford, UK.
22. [Coalgebraic Logics](#), Dec 2009, Dagstuhl, Germany.
23. [Workshop on Modal Logic, Stone Duality and Coalgebras](#), Jun 2006, University of Leicester, UK.
24. [Logic in Games and Multi Agent Systems Workshop](#), Dec 2002, University of Liverpool, UK.

ACADEMIC SERVICE

Editor

1. Special Issue of Mathematical Structures in Computer Science for selected papers of WoLLIC 2023.
2. Founding editor of open access journal *Compositionality*.
3. Chair of the editor team for the post-proceeding of the 11th Tbilisi Symposium on Logic, Language and Computation (TbiLLC 2015). Published in Springer LNCS series.

Steering Committees, Boards and Working Groups

1. SC Coalgebraic Methods in Computer Science (CMCS) and Conference on Algebra and Coalgebra in Computer Science (CALCO) (2022 –)
2. SC Workshop on Logic, Language, Information and Computation (WoLLIC) (2024 –)
3. Board member Nederlandse Vereniging voor Logica & Wijsbegeerte der Exacte Wetenschappen (Dutch Association for Logic and Philosophy of Exact Sciences) (Jan 2021 –)
4. IFIP Working Group 2.1 Algorithmic Languages and Calculi, Observer (Jan 2020 -)

Conference Program Committee Chair

1. 14th Int. Tbilisi Symposium on Language, Logic and Computation (TbiLLC 2023), co-chair: Berit Gehrke (Humboldt U).
2. 29th Workshop on Logic, Language, Information and Computation (WoLLIC 2023), co-chair: Andre Scedrov (U. Pennsylvania).
3. 16th IFIP WG 1.3 International Coalgebraic Methods in Computer Science (CMCS 2022), co-chair: Fabio Zanasi (UCL).
4. 7th Dutch National Symposium on Software Engineering (SEN Symposium 2021), co-chairs: Nils Janssen (Radboud U.) and Ilias Gerastathopoulos (VU Amsterdam).

Conference Program Committee Member

1. 43rd International Conference on Formal Techniques for Distributed Objects, Components, and Systems (FORTE 2023).
2. Logic and the Foundations of Game and Decision Theory (LOFT 2022).
3. 27th Workshop on Logic, Language, Information and Computation (WoLLIC 2021).
4. Indian Conference on Logic and its Applications (ICLA 2021).
5. Women in Logic (WiL 2021).
6. Applied Category Theory (ACT 2021).
7. Mathematical Foundations of Program Semantics (MFPS 2021).
8. Workshop on Logic, Language, information and Computation (WoLLIC 2021).
9. Semantic Spaces at the Intersection of NLP, Physics and Cognitive Science (SEMSPACE 2020).
10. Advances in Modal Logic (AiML 2020).
11. 26th Workshop on Logic, Language, Information and Computation (WoLLIC 2020).
12. Coalgebraic Methods in Computer Science (CMCS 2020).
13. Applied Category Theory (ACT 2019).
14. Algebra and Coalgebra in Computer Science (CALCO 2019).
15. Semantic Spaces at the Intersection of NLP, Physics, and Cognitive Science (SEMSPACE 2019).
16. Third Symposium on Compositional Structures (SYCO3), 2019.
17. PhDs in Logic XI, 2019.
18. Compositional Approaches in Physics, NLP and Social Sciences, 2018.
19. Advances in Modal Logic (AiML 2018).
20. Coalgebraic Methods in Computer Science (CMCS 2018).
21. Algebra and Coalgebra in Computer Science (CALCO 2017).
22. Tbilisi Symposium on Language, Logic and Computation (TbiLLC 2017).
23. European Conference on Artificial Intelligence (ECAI 2016).

24. International Workshop on Logic and Cognition (WOCL 2016).
25. Mathematically Structured Functional Programming (MSFP 2016).
26. Mathematical Foundations of Program Semantics (MFPS 2016).
27. Algebra and Coalgebra in Computer Science (CALCO 2015).
28. Trends in Logic XV: Logics for Social Behaviour, 2015.
29. Proof, Structure and Computation (LICS-CSL Satellite workshop), 2014.

External Refereeing for Conferences

1. Foundations of Software Science and Computation Structures (FoSSaCS) 2008, 2012, 2013, 2023.
2. Logic in Computer Science (LICS) 2006, 2011, 2017.
3. Int. Colloquium on Automata, Languages and Programming (ICALP) 2012, 2017, 2020.
4. Coalgebraic Methods in Computer Science (CMCS) 2008, 2016.
5. EXPRESS/SOS 2014.
6. Algebra and Coalgebra in Computer Science (CALCO) 2011, 2013.
7. Tbilisi Symposium on Logic, Language and Computation (TbiLLC) 2013.
8. Advances in Modal Logic (AiML) 2012.
9. Theoretical Computer Science (IFIP-TCS) 2012.
10. Communicating Processes Architectures (CPA) 2012.
11. Formal Methods (FM) 2011.
12. Fundamentals of Software Engineering (FSEN) 2011.
13. Concurrency Theory (CONCUR) 2011.
14. Computer Science Logic (CSL) 2011.
15. Fundamentals of Computation Theory (FCT) 2011.
16. Coordination Models and Languages (COORDINATION) 2010.
17. Algebra and Coalgebra in Computer Science Young Researchers Workshop (CALCO-jnr) 2009.
18. International Conference on Order, Algebra and Logics (OAL) 2007.
19. Student Sessions at the European Summer School in Logic, Language and Information (ESSLLI) 2002.

Refereeing for Journals

1. ACM Transactions on Computational Logic
2. Logical Methods in Computer Science
3. Journal of Logic and Computation
4. Studia Logica,
5. Journal of Philosophical Logic
6. Journal of Applied Logic
7. Review of Symbolic Logic,
8. Ethics and Information Technology
9. Journal of Functional Programming
10. Journal of Logic and Algebraic Methods in Programming
11. Journal of Multiple-Valued Logic and Soft Computing
12. Journal of Logic and Algebraic Programming
13. Journal of Computer and System Sciences
14. Notre Dame Journal of Formal Logic
15. Theoretical Informatics and Applications (RAIRO ITA)
16. Logic Journal of the IGPL

Expert Referee for Grant Proposals

1. Engineering and Physical Science Council (EPSRC), United Kingdom

Organising Committees

1. 19th International Federated Conference on Distributed Computing Techniques (DisCoTec 2024), June 17-21 2024, University of Groningen. Accommodations coordinator.
2. VvL Annual Lecture and Master Thesis Awards, 8 Dec 2022, University of Groningen.
3. VvL Logic at Large, 28 May 2021, online seminar and panel discussion.
4. Coalgebra, now, Pre-FLoC workshop, 8 July 2018, University of Oxford.
5. European Conference on Artificial Intelligence (ECAI 2016), The Hague, 29 Aug - 2 Sep 2016. Co-chair of logistics.
6. Workshop on Logics for Social Behaviour, North American Summer School on Logic, Language and Information (NASSLLI), 11 - 15 July 2016, Rutgers University, USA.
7. Workshop Logics for Social Behaviour III, ETH Zürich, 8-11 Feb 2016.
8. Workshop on Automata and Coalgebra at TbiLLC 2015, Tbilisi, Georgia.
9. Workshop Algebra and Coalgebra Meet Proof Theory (ALCOP 2015), Delft University of Technology, 6-8 May 2015.
10. Workshop Coalgebras in Quantum Physics, Bellairs Research Institute Barbados, 15-19 March 2015.
11. Workshop Representing Streams II, Lorentz Center, Leiden, The Netherlands, 20-31 January 2014.

Hiring committees

1. Assistant Professor Tenure Track with Education Profile, Theoretical Computer Science, UG, Jan 2023.
2. Assistant Professor Tenure Track with Education Profile, Embedded Systems, UG, Jan 2023.
3. Rosalind Franklin Fellowships (3 positions), UG, Oct-Dec 2022.
4. Assistant Professor Tenure Track with Education Profile, Programming Languages and Systems, UG, May-June 2021.
5. Delft Technology Fellowships, TPM, TU Delft, Dec 2019 - Feb 2020.
6. Assistant Professor Tenure Track, System Dynamics, TPM, TU Delft, July 2019.
7. Postdoc position in Vidi project *Reasoning about quantum interaction* held by dr. Sonja Smets, ILLC, University of Amsterdam, June 2012.

Administration/Other

1. Co-organiser of the CS Colloquium, UG (since 2020).
2. Co-organiser of the GroLog Seminar, the Groningen seminar on Logic, UG (since 2021).
3. Member of the Board of Examiners for Computing Science, Bernoulli Institute, UG, Jun 2020–Jan 2024.
4. External member of the Board of Examiners for the Master of Logic, ILLC, University of Amsterdam, Jan 2021–Jun 2024.
5. Graduation coordinator for the Energy & Industry group, Sep 2017–May 2020, TU Delft.
6. Member of curriculum renewal committee for the Master programme Engineering Policy Analysis (EPA), TPM, Nov 2015–Jun 2016, TU Delft.

PhD Examiner

1. Joseph Paulus, thesis: *On the Expressivity of Typed Concurrent Calculi*, supervised by J. Pérez, G. Renardel, University of Groningen, 20 September 2024. (Doctoral assessment committee and examination board.)
2. Alen Arslanagic, thesis: *Minimal Structures for Program Analysis and Verification*, supervised by J. Pérez, G. Renardel, University of Groningen, 12 September 2023. (Doctoral examination board.)
3. Jana Wagemaker, thesis: *Extensions of (Concurrent) Kleene Algebra*, supervised by H. Geuvers, A. Silva, J. Rot, Radboud University, 24 October 2022. (Doctoral examination board.)
4. Atefeh Keshavarzi Zafarghandi, thesis: *Abstract Dialectical Frameworks*, supervised by B. Verheij, R. Verbrugge, University of Groningen, 19 April 2022. (Doctoral assessment committee and examination board.)
5. Stipe Pandzic, thesis: *Reasoning with Defeasible Reasons*, supervised by B. Kooi, R. Verbrugge, A. Tamminga, University of Groningen, 29 Oct 2020. (Doctoral examination board.)

6. Qin Lin, thesis: *Intelligent Control Systems: Learning, interpreting, verification*, supervised by J. van den Berg, S. Verwer, TU Delft, 5 Sep 2019. (Doctoral assessment committee and examination board.)
7. Julian Salamanca, thesis: *Coequations and Eilenberg-type Correspondences*, supervised by J. Rutten, M. Bonsangue, Radboud University, Apr 2018. (Doctoral examination board.)
8. Jurriaan Rot, thesis: *Enhanced Coinduction*, supervised by J. Rutten, M. Bonsangue, Leiden University, Oct 2015. (Doctoral assessment committee and examination board.)
9. Georgiana Caltais, thesis: *Coalgebraic Tools for Bisimilarity and Decorated Trace Semantics*, supervised by J. Rutten, M. Bonsangue, A. Silva, Radboud University, Dec 2013. (Doctoral examination board.)

Master Thesis Examiner

1. Rover Samwel (Master of Logic). Thesis title: *Explorations in Coalgebraic Predicate Logic: With a Focus on Interpolation*, supervised by Y. Venema, ILLC, University of Amsterdam, Oct 2022.
2. Andrew Keys (Master of Sustainable Energy Technology). Thesis title: *2050 Decarbonisation of the Dutch steelmaking industry: The potential of flexibility in renewable electricity-based steelmaking technology*, supervised by A. Ramirez Ramirez and W. de Jong, TPM, Delft University of Technology, Oct 2019.
3. Chase Ford (Master of Logic). Thesis title: *Investigations into the Expressiveness of First-order Logic and Weak Path Automata on Infinite Trees*, supervised by Y. Venema and S. van Gool, ILLC, University of Amsterdam, Sep 2019.
4. Olim Tuyt (Master of Logic). Thesis title: *Canonical Rules on Neighbourhood Frames*, supervised by N. Bezhanishvili and S. Enqvist, ILLC, University of Amsterdam, Dec 2016.
5. Sander in 't Veld (Master of Logic). Thesis title: *Temporal Logics, Automata and the Modal μ -Calculus*, supervised by Y. Venema and S. Enqvist, ILLC, University of Amsterdam, July 2016.
6. Fabio Zanasi (Master of Logic). Thesis title: *Expressiveness of Monadic Second-Order Logics on Infinite Trees of Arbitrary Branching Degree*, supervised by Y. Venema and A. Facchini, ILLC, University of Amsterdam, Aug 2012.

Mentoring

1. Adjoint School 2021: Mentor at graduate research school associated with the *Applied Category Theory (ACT 2021)* conference.
2. Graduate School TPM, TU Delft: Mentor for PhD students in the TPM Graduate School mentoring programme, TU Delft:
 - Indushree Banerjee (Dec 2016 - May 2020).
 - Maria Galeano Galvan (June 2017 - May 2020).
 - Elsa Turcios Rodriguez (March 2019 - May 2020).

TEACHING

I hold a University Teaching Qualification (UTQ/BKO) since Dec 2016 issued by the Radboud University Nijmegen. Portfolio can be made available on request.

Teaching Activities at the University of Groningen

- Introduction to Logic (CS)* (5ec), 2020–2025. 1st yr BSc Computing Science. Role: course manager and co-lecturer.
- Discrete Structures* (5ec), 2020–2025. 1st yr BSc Computing Science. Role: course manager (2020-2022), lecturer (2020-2024), second examiner (2024-2025)
- Modal Logic and Proof Theory* (5ec), 2022–2025. 1st yr MSc Computing Science. Role: course manager and co-lecturer.
- Formal Modelling of Communicating Systems* (5ec), 2021–2022. 1st yr MSc Computing Science. Role: co-lecturer and second examiner.

Functional Programming (5ec), 2021–2025. 2nd yr BSc Computing Science. Role: second examiner.
Research Skills in Computing Science (5ec), 2020–2023. 3rd yr BSc Computing Science. Role: supervisor.

Past teaching

Agent-Based Modelling (5ec), 2018-2019, 2019-2020.

1st yr BSc Technische Bestuurskunde, TU Delft. Role: course manager and co-teacher.

Design in Networked Systems (5ec), 2016-2017, 2017-2018, 2018-2019, 2019-2020.

1st yr MSc Complex Systems Engineering & Management, TU Delft. Role: co-teacher.

Renewable Energy Systems (6ec), 2015-2016, 2016-2017, 2017-2018, 2018-2019, 2019-2020.

1st yr MSc Industrial Ecology, U. Leiden & TU Delft (joint programme). Role: course manager with a colleague.

CoSEM Master Thesis Preparation (5ec), 2017-2018, 2018-2019.

2nd yr MSc Complex Systems Engineering & Management, TU Delft. Role: co-teacher.

CoSEM Thesis Project Definition (6ec), 2015-2016, 2016-2017.

2nd yr MSc Complex Systems Engineering & Management, TU Delft. Role: co-teacher.

Research Methods and Data Analysis (5ec), 2014-2015, 2015-2016, 2016-2017, 2nd yr BSc Technische Bestuurskunde, TU Delft. Role: project group supervisor.

Formal Languages, Grammars and Automata (3ec), 2013-2014, 2nd yr BSc Science, RU Nijmegen. Role: course manager and lecturer.

Coalgebra (6ec), 2012-2013, Master Foundations of Computer Science, RU Nijmegen. Role: course manager and lecturer.

Master student supervision

1. Chris Worthington (Computing Science, UG, 30ec), Jan–Aug 2023.
Thesis title: *Automated Proof Search in a Cyclic Proof System for Game Logic*.
2. Eline Hoexum (Mathematics, UG, 30ec), Aug 2021–July 2022.
Thesis title: *Completeness over Kripke Models of a Cyclic Proof System for Game Logic*.
3. Nick van Berkel (Engineering Policy Analysis, TU Delft, 30ec), Feb–Nov 2019.
Thesis title: *Agent-based modelling of the effects of taxation on the financialization of non-financial firms*.
4. Ralf Bendermacher (Management of Technology, TU Delft, 30ec, 2nd supervisor), May–Aug 2019.
Thesis title: *The effects of industrial robots on offshoring intensity*.
5. Raphael Hannaert (Management of Technology, TU Delft, 30ec, 2nd supervisor), Mar–Aug 2018.
Thesis title: *Decentralized data market places*.
6. Abel Planting (Mathematics, RU Nijmegen, 40ec), Sep 2012–Aug 2013.
Thesis title: *From automata to monoids and back again*.

Bachelor student supervision

1. Andrei Girjoaba (Computing Science, UG, 10ec). Project: *Eunomia: Natural Deduction Proof Evaluator for Fitch Style Proofs*, September 2023. Honours College Project.
2. Eelke Landsaat (Computing Science, UG, 15ec), BSc Thesis title: *A Model Checker for Game Logic via Parity Games*, July 2022
3. Han Meerholz (Computing Science, UG, 15ec), BSc Thesis title: *Towards Automated Theorem Proving in the CloG Proof System*, July 2022.
4. Steven van Schagen (Computing Science, UG, 15ec), BSc Thesis title: *Game Logic: A Proof Transformation from Gentzen to Hilbert*, July 2022.
5. Chris Ausema (Computing Science, UG, 15ec), BSc Thesis title: *From Accepting Computation to Satisfying Kripke Model*, Sep 2021.
6. Chris Worthington (Computing Science, UG, 15ec), BSc Thesis title: *Proof Transformations for Game Logic*, August 2021.

7. Bachelor project phase 1 (BSc Technische Bestuurskunde, TU Delft, 5ec, TB351B), 2016-17, 2017-18. Issue paper, 3rd yr. Seven students in total.
8. Bachelor project phase 2 (BSc Technische Bestuurskunde, TU Delft, 10ec, TB351B), 2016-17, 2017-18. Quantitative research, 3rd yr. Two students in total.
9. Sanne Boumans (Computer Science, Radboud University, Nijmegen), Sep 2014 - Apr 2015, BSc Thesis title: *Lost in Translation: Automatic Learning of Statistical Models for Language Translation*.

LANGUAGE QUALIFICATIONS

Proficiency level indicated according to the Common European Framework of Reference for Languages (CEFR) (A1: Breakthrough to C2: Mastery).

Danish	(native speaker),
English	fluent (certified C2), used daily 1991 - present,
Dutch	fluent (estimated C1), used daily 1995 - present,
German	intermediate (estimated B1).

PUBLICATIONS

Summary of peer-reviewed publications (April 2025): 3 edited volumes, 14 journal articles, 25 conference/workshop proceedings papers, 3 book chapters. A list is provided below. For further details, please see [DBLP](#) and [Google Scholar](#).

Edited Volumes:

- [1] H. H. Hansen, A. Scedrov and R. de Queiroz (editors). Logic, Language, Information and Computation, 29th International Workshop, WoLLIC 2023, Halifax, NS, Canada, July 11-14, 2023, Proceedings, volume 13293 of *Lecture Notes in Computer Science (LNCS)*, 2023, Springer.
- [2] H. H. Hansen and F. Zanasi (editors). 16th IFIP WG 1.3 International Workshop on Coalgebraic Methods in Computer Science: Proceedings, volume 13225 of *Lecture Notes in Computer Science*, 2022, Springer.
- [3] H. H. Hansen, S. E. Murray, M. Sadrzadeh, H. Zeevat (editors). Logic, Language and Computation, 11th International Tbilisi Symposium on Logic, Language, and Computation, TbiLLC 2015, Tbilisi, Georgia, September 21-26, 2015, Revised Selected Papers, volume 10148 of *Lecture Notes in Computer Science*, 2017, Springer.

Journal Articles (refereed):

- [4] G.D.C. Nava Guerrero, H. H. Hansen, G. Korevaar, Z. Lukszo. An agent-based exploration of the effect of multi-criteria decisions on complex socio-technical heat transitions. *Applied Energy* 306, Elsevier, 2022.
- [5] G.D.C. Nava Guerrero, H. H. Hansen, G. Korevaar, Z. Lukszo. The effect of group decisions in heat transitions: an agent-based approach. *Energy Policy* 156, Elsevier, 2021.
- [6] G.D.C. Nava Guerrero, H. H. Hansen, G. Korevaar, Z. Lukszo. Agent-Based Modeling of a Thermal Energy Transition in the Built Environment. *Energies* 12(5), 856, 2019. Special Issue 4th International Conference on Smart Energy Systems and 4th Generation District Heating.
- [7] H. Basold and H. H. Hansen. Well-definedness and Observational Equivalence for Inductive-Coinductive Programs. *Journal of Logic and Computation* 29(4), pages 419-468, 2019.
- [8] H. Basold, H. H. Hansen, J.E. Pin, and J. Rutten. Newton Series, Coinductively: A Comparative Study of Composition. *Mathematical Structures in Computer Science* 29(1), pages 38-66, 2019.

- [9] J. Endrullis, H. H. Hansen, D. Hendriks, A. Polonsky, A. Silva. Coinductive Foundations of Infinitary Rewriting and Infinitary Equational Logic. *Logical Methods in Computer Science* 14(1), paper 3, 2018.
- [10] H. H. Hansen, C. Kupke and J. J. M. M. Rutten. Stream Differential Equations: Specification Formats and Solution Methods. *Logical Methods in Computer Science* 13(1), paper 3, 2017.
- [11] M. M. Bonsangue, H. H. Hansen, A. Kurz, and J. Rot. Presenting Distributive Laws. *Logical Methods in Computer Science* 11(3), paper 2, 2015.
- [12] F. Bonchi, M. M. Bonsangue, H. H. Hansen, P. Panangaden, J. J. M. M. Rutten, and A. Silva. Algebra-coalgebra duality in Brzozowski’s minimization algorithm. *ACM Transactions on Computational Logic* 15(1), paper 3, 2014.
- [13] H. H. Hansen and B. Klin. Pointwise extensions of GSOS-defined operations. *Mathematical Structures in Computer Science* 21(2), pages 321–351, 2011.
- [14] H. H. Hansen and J. J. M. M. Rutten. Symbolic synthesis of Mealy machines from arithmetic bitstream functions. *Scientific Annals of Computer Science* 20, pages 97–130, 2010.
- [15] H. H. Hansen. Subsequential transducers: a coalgebraic perspective. *Information and Computation*, 208(12):1368–1397, 2010.
- [16] H. H. Hansen, J. Ketema, B. Luttik, M. Mousavi, and J. van der Pol. Towards model checking executable UML specifications in mCRL2. *Innovations in Systems and Software Engineering* 6(1-2), pages 83–90, 2010.
- [17] H. H. Hansen, C. Kupke, and E. Pacuit. Neighbourhood structures: Bisimilarity and basic model theory. *Logical Methods in Computer Science* 5(2), paper 2, 2009.

Book Chapters (refereed):

- [18] N. Bezhanishvili, M. M. Bonsangue, H. H. Hansen, D. Kozen, C. Kupke, P. Panangaden, and A. Silva. Minimisation in Logical Form. In *Samson Abramsky on Logic and Structure in Computer Science and Beyond*, p. 89-127, Outstanding Contributions in Logic, vol. 25. Springer, 2023.
- [19] H. Basold, M. M. Bonsangue, H. H. Hansen, J. Rutten. (Co)algebraic characterizations of signal flow graphs. In *Horizons of the Mind: A Tribute to Prakash Panangaden*, volume 8464 of Lecture Notes in Computer Science, pages 124–145. Springer, 2014.
- [20] H. H. Hansen, C. Kupke, J. Rutten, and J. Winter. A final coalgebra for k-regular sequences. In *Horizons of the Mind: A Tribute to Prakash Panangaden*, volume 8464 of Lecture Notes in Computer Science, pages 363–383. Springer, 2014.

International Conference Publications (refereed):

- [21] A. Chernev, C. Cirstea, H. H. Hansen, and C. Kupke. Thin Coalgebraic Behaviours are Inductive. *Fortieth ACM/IEEE Symposium on Logic in Computer Science (LICS 2025)*, 23–26 June 2025, Singapore. To appear in IEEE, 2025.
- [22] A. Chernev, C. Cirstea, H. H. Hansen, and C. Kupke. Unambiguous Acceptance of Thin Coalgebras. *41st Conference on Mathematical Foundations of Programming Semantics (MFPS XLI)*, 18–20 June 2025, Glasgow, UK. To appear in Electronic Notes in Theoretical Informatics and Computer Science (ENTICS), 2025.
- [23] H. H. Hansen and W. Poiger. Safety and Strong Completeness via Reducibility for Many-Valued Coalgebraic Dynamic Logics. *11th Conference on Algebra and Coalgebra in Computer Science (CALCO 2025)*, 16–18 June 2025, Glasgow, UK. To appear in Leibniz International Proceedings in Informatics (LIPIcs). Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2025.

- [24] A. Rosset, H. H. Hansen, and J. Endrullis. Characterisation of Lawvere-Tierney Topologies on Simplicial Sets, Bicolored Graphs, and Fuzzy Sets. *14th International Tbilisi Symposium on Logic, Language and Computation (TbiLLC 2023)*. To appear in *Lecture Notes in Computer Science*. Springer.
- [25] A. Chernev, H. H. Hansen, and C. Kupke. Dual Adjunction Between Ω -Automata and Wilke Algebra Quotients. *Theoretical Aspects of Computing (ICTAC 2024), 21st International Colloquium*, volume 15373 of *Lecture Notes in Computer Science*, pages 96–113. Springer, 2025.
- [26] A. Rosset, M. Zwart, H. H. Hansen, and J. Endrullis. Correspondence between Composite Theories and Distributive Laws. *Coalgebraic Methods in Computer Science (CMCS 2024), 17th IFIP WG 1.3 International Workshop*, volume 14617 of *Lecture Notes in Computer Science*, pages 194–215. Springer, 2024.
- [27] A. Rosset, H. H. Hansen, and J. Endrullis. Algebraic Presentation of Semifree Monads. *Coalgebraic Methods in Computer Science (CMCS 2022), 16th IFIP WG 1.3 International Workshop*, volume 13225 of *Lecture Notes in Computer Science*, pages 110–132. Springer, 2022.
- [28] J. de Groot, H. H. Hansen, A. Kurz. Logic-Induced Bisimulations. *Advances in Modal Logic (AiML 2020)*, Helsinki, Finland, 24-28 August 2020. College Publications, 2020.
- [29] F. M. V. Feys, H. H. Hansen. Arrow’s Theorem Through a Fixpoint Argument. *Theoretical Aspects of Rationality and Knowledge (TARK 2019)*, Toulouse, France, 17-19 July 2019. Electronic Proceedings in Theoretical Computer Science, vol. 297, pp. 175–188. Open Publishing Association, 2019.
- [30] S. Enqvist, H. H. Hansen, C. Kupke, J. Marti, Y. Venema. Completeness for Game Logic. *Thirty-Fourth Annual ACM/IEEE Symposium on Logic in Computer Science (LICS 2019)*, Vancouver, Canada, 24-27 June 2019. IEEE, 2029.
- [31] F. M. V. Feys, H. H. Hansen, L. S. Moss. Long-term values in Markov decision processes, (co)algebraically. *Coalgebraic Methods in Computer Science (CMCS 2018)*, volume 11102 of *Lecture Notes in Computer Science*, pages 78–99. Springer, 2018.
- [32] H. H. Hansen, C. Kupke, J. Marti and Y. Venema. Parity games and automata for game logic. *Dali – Dynamic Logic: new trends and applications*, volume 10669 of *Lecture Notes in Computer Science*, pages 115–132. Springer, 2018.
- [33] Z. Bakhtiari and H. H. Hansen. Bisimulation for weakly expressive coalgebraic modal logics. *7th Conference on Algebra and Coalgebra in Computer Science (CALCO 2017)*, Leibniz International Proceedings in Informatics (LIPIcs), volume 72. Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2017.
- [34] Z. Bakhtiari, H. van Ditmarsch, H. H. Hansen. Neighbourhood contingency bisimulation. *7th Indian Conference on Logic and its Applications (ICLA 2017)*, volume 10119 of *Lecture Notes in Computer Science*, pages 48–63. Springer, 2017.
- [35] H. Basold, H. H. Hansen, J.E. Pin, and J. Rutten. Newton series, coinductively. *12th International Colloquium on Theoretical Aspects of Computing (ICTAC 2015)*, volume 9399 of *Lecture Notes in Computer Science*, pages 91–109. Springer, 2015.
- [36] H. H. Hansen and C. Kupke. Weak completeness of coalgebraic dynamic logics. *Fixed Points in Computer Science (FICS 2015)*, volume 191 of *Electronic Proceedings in Theoretical Computer Science*, pages 90–104. Open Publishing Association, 2015.
- [37] J. Endrullis, H. H. Hansen, D. Hendriks, A. Polonsky, A. Silva) A coinductive treatment of infinitary term rewriting and equational reasoning. *Rewriting Techniques and Applications (RTA 2015)*, **Best paper award**, Leibniz International Proceedings in Informatics *LIPIcs*, volume 36, pages 143–159, Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2015.
- [38] H. H. Hansen, C. Kupke, and R. A. Leal. Strong completeness for iteration-free coalgebraic dynamic logics. *Theoretical Computer Science – 8th IFIP Conference*, volume 8705 of *Lecture Notes in Computer Science*, pages 281–295. Springer, 2015.

- [39] M. M. Bonsangue, H. H. Hansen, A. Kurz, and J. Rot. Presenting distributive laws. In S. Milius and R. Heckel, editors, *Proceedings of the 5th Conference on Algebra and Coalgebra in Computer Science (CALCO 2013)*, volume 8089 of Lecture Notes in Computer Science, pages 95–109. Springer, 2013.
- [40] H. H. Hansen, J. Ketema, B. Luttik, M. Mousavi, J. van der Pol, and O. Marchi dos Santos. Automated verification of Executable UML models. In *Formal Methods for Components and Objects (FMCO 2010), 9th International Symposium*, volume 6957 of Lecture Notes in Computer Science, pages 225–250. Springer, 2012.
- [41] H. H. Hansen. Coalgebraising subsequential transducers. In J. Adámek and C. Kupke, editors, *Proceedings of the 9th Workshop on Coalgebraic Methods in Computer Science (CMCS 2008)*, volume 203 of Electronic Notes in Theoretical Computer Science, pages 109–129. Elsevier, 2008.
- [42] H. H. Hansen, C. Kupke, and E. Pacuit. Bisimulation for neighbourhood structures. In T. Mossakowski, M. Haveran, and U. Montanari, editors, *Proceedings of the 2nd Conference on Algebra and Coalgebra in Computer Science (CALCO 2007)*, Bergen, Norway, volume 4624 of Lecture Notes in Computer Science, pages 279–293. Springer, 2007.
- [43] H. H. Hansen, D. de Oliveira-Costa, and J. J. M. M. Rutten. Synthesis of Mealy machines using derivatives. In N. Ghani and J. Power, editors, *Proceedings of the 8th Workshop on Coalgebraic Methods in Computer Science (CMCS 2006)*, volume 162 (1) of Electronic Notes in Theoretical Computer Science, pages 27–45. Elsevier, 2006.
- [44] H. H. Hansen and C. Kupke. A coalgebraic perspective on monotone modal logic. In J. Adámek and S. Milius, editors, *Proceedings of the 7th Workshop on Coalgebraic Methods in Computer Science (CMCS 2004)*, volume 106 of Electronic Notes in Theoretical Computer Science, pages 121–143. Elsevier, 2004.
- [45] H. H. Hansen and M. Pauly. Axiomatising Nash-consistent Coalition Logic. In S. Flesca, S. Greco, N. Leone, and I. Giovambattista, editors, *Proceedings of the 8th European Conference on Logics in Artificial Intelligence (JELIA 2002)*, volume 2424 of Lecture Notes in Artificial Intelligence, pages 394–406. Springer, 2002.

Informal Conference Proceedings (refereed):

- [46] A. Chervnev, C. Cirstea, A. Goy, H. H. Hansen, and C. Kupke. A Categorical Representation of Thin Trees. *Topology, Algebra and Categories in Logic (TACL 2024)*, 1-5 July 2024, University of Barcelona, Spain.
- [47] F. M. V. Feys, H. H. Hansen, L. S. Moss. (Co)Algebraic Techniques for Markov Decision Processes. *Women in Logic, LICS 2019 Workshop*, 23 June 2019, Vancouver, Canada.
- [48] Z. Bakhtiari and H. H. Hansen. A (Co)algebraic Approach to Hennessy-Milner Theorems for Weakly Expressive Logics. *Syntax Meets Semantics (SYSMICS 2019)*, 21-25 January 2019, Amsterdam, The Netherlands.
- [49] F. M. V. Feys, H. H. Hansen, L. S. Moss. (Co)Algebraic Techniques for Markov Decision Processes. *Syntax Meets Semantics (SYSMICS 2019)*, 21-25 January 2019, Amsterdam, The Netherlands.
- [50] H. Basold and H. H. Hansen. A Note on Typed Behavioural Differential Equations. *Short Contribution, 12th Workshop on Coalgebraic Methods in Computer Science (CMCS 2014)*, 2014.
- [51] J. Endrullis, H. H. Hansen, D. Hendriks, A. Polonsky, and A. Silva. A coinductive treatment of infinitary rewriting. Extended abstract, *Workshop on Infinitary Rewriting (WIR 2013)*.
- [52] H. H. Hansen and R. A. Leal. Dynamic coalgebraic modalities. *Short Contribution, 10th Workshop on Coalgebraic Methods in Computer Science (CMCS 2010)*, 2010. In Research Report SEN-1004, Centrum Wiskunde & Informatica (CWI).

- [53] H. H. Hansen, J. Ketema, B. Luttik, M. Mousavi, and J. van der Pol. Towards model checking executable UML specifications in mCRL2. In *Proceedings of the Second IEEE International Workshop on UML and Formal Methods*, Rio de Janeiro, Brazil, 2009.
- [54] H. H. Hansen. A note on subsequential transducers and coalgebra. In *Proceedings of Automata: from Mathematics to Applications (AutoMathA)*, Mondello (Palermo), Italy, 2007.
- [55] H. H. Hansen and D. de Oliveira-Costa. Constructing sequential machines from coinductive specifications (abstract). In *Proceedings of CALCO Young Researchers Workshop (CALCO-jnr 2005)*, Swansea, Wales, 2005.

Theses:

- [56] H. H. Hansen. *Coalgebraic Modelling: Applications in Automata Theory and Modal Logic*. PhD thesis, Vrije Universiteit Amsterdam, May 2009.
- [57] H. H. Hansen. *Tableau Games for Coalition Logic and Alternating-time Temporal Logic*. Master's thesis, University of Amsterdam, 2004.
- [58] H. H. Hansen. *Monotonic Modal Logics*. Master's thesis, Research Report PP-2003-24, Institute for Logic, Language and Computation (ILLC), University of Amsterdam, 2003.

Other Publications:

- [59] H. H. Hansen. Mealy synthesis from arithmetic bitstream functions. NVTI Nieuwsbrief, 2010.

Software Developed:

- [60] H. H. Hansen, O. Marchi dos Santos, and L. Rose. INESS translator, 2011. Automated translation from Executable UML to mCRL2 developed for the INESS project.
- [61] H. H. Hansen and D. de Oliveira-Costa. DIFFCAL: Implementation of Mealy synthesis algorithm described in [43].

Under Submission:

- [62] M. Borzechowski, M. Gattinger, H. H. Hansen, R. Ramanayake, V. Trucco Dalmas, Y. Venema. Propositional Dynamic Logic has Craig Interpolation: A Tableau-based Proof (2025). [ArXiv. 2503.13276](https://arxiv.org/abs/2503.13276).