

# Dr. Kai Sauerwald

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## *Profile Summary*

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### General

<b>Career</b>	M.Sc. Computer Science 2017 (TU Dortmund) PhD (Dr. rer. nat.) 2022 (FernUniversität in Hagen) PostDoc 2022 (Artificial Intelligence Group, FernUniversität in Hagen) Tenured Researcher 2025 (FernUniversität in Hagen)
<b>Website</b>	<a href="https://www.kai-sauerwald.de">https://www.kai-sauerwald.de</a>

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### Research

<b>Research focus</b>	Formal Semantics
<b>Specific topics</b>	Change, Reasoning, Forgetting, Cognition
<b>Publications</b>	61 (DBLP, 2026/01/15)
<b>Citations</b>	299 (Google scholar, 2026/01/15)
<b>H-Index</b>	10 (Google scholar, 2026/01/15)
<b>Conferences</b>	IJCAI, KR, ECAI, JELIA, CogSci, FoIKS, ECSQARU, RuleML+RR, ...
<b>Journals</b>	AIJ, IJAR, AMAI, KI, TOCL
<b>Awards</b>	ECAI 2020 Distinguished Paper Award, Best Scientific Work 2021, RuleML+RR 2022 Best Paper, Best PhD Thesis 2023
<b>Scientific network</b>	Tanya Braun (U Münster), Eduardo Fermé (U Madeira), Gabriele Kern-Isberner (TU Dortmund), Juha Kontinen (U Helsinki), Oliver Kutz (U Bozen), Arne Meyer (U Hannover), Tommie Meyer (U Cape Town), Ralf Möller (U Hamburg), Sebastian Rudolph (TU Dresden)

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### Services

<b>PC chair</b>	ECSQARU 2025, FCR-2025, Deduktionstreffen 2025, UR@FLAIRS'24, ICCS 2023, NMR 2023, UR@FLAIRS'23, FCR-2023, FCR-2022
<b>Other scientific services</b>	KR 2025 (doctoral consortium chair), ECSQARU 2025 (local chair), RuleML+RR 2025 (publicity chair), AMAI 2025 (journal guest editor), COMMA 2024 (workshop contact), IJAR 2024 (journal guest editor), ...
<b>Steering/Memberships</b>	Speaker: SIG Knowledge Representation and Reasoning (FB WR) in the German Informatics Society (GI), Steering committee: International Workshops on Nonmonotonic Reasoning (NMR)
<b>PC member</b>	All major AI conferences, e.g., IJCAI, AAI, KR, JELIA, ...
<b>Local services</b>	faculty council, PhD committee, habilitation committee, appointment committees

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### Teaching

<b>Experience</b>	14 years. Since 2017 with 4 hours/week (independent since 2022)
<b>Study programs</b>	B.Sc. computer science, M.Sc. computer science, M.Sc. applied computer science, M.Sc. data science
<b>Courses</b>	Knowledge Representation and Reasoning, Logical and Functional Programming, Deduction and Inference Systems, Machine Learning, Logic, Tutorials, Seminars
<b>Theses</b>	More than 20 B.Sc. theses and M.Sc. theses

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## Curriculum Vitæ

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### Personal Info

Date of Birth 13th December 1987 in Dortmund, Germany  
Private Address Plauener Straße 18, 44139 Dortmund, Germany  
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Website <https://www.kai-sauerwald.de>

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### Academic Education

2022 **Dr. rer. nat.**, FernUniversität in Hagen  
*Thesis:* Semantics of Belief Change Operators for Intelligent Agents:  
Iteration, Postulates and Realizability [19]  
*Grade:* **summa cum laude**  
*Reviewers:* Prof. Dr. Christoph Beierle, Prof. Dr. Gabriele Kern-Isberner

10/2014 – 01/2017 **Master of Science in Computer Science**, TU Dortmund University  
*Thesis:* Analyse und Synthese Regulärer Ausdrücke: Algorithmen und Komplexität  
*Advisors:* Prof. Dr. Thomas Schwentick, Prof. Dr. Thomas Zeume

10/2010 – 09/2014 **Bachelor of Science in Computer Science**, TU Dortmund University  
*Thesis:* Visibly Pushdown Automata: VPA mit Ausgabe  
*Advisor:* Prof. Dr. Thomas Schwentick

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### Occupations

From 2025 (August) Scientific staff member, FernUniversität in Hagen, Faculty of Mathematics and Computer Science  
Full-time position with teaching duties (tenured)

2022 – 2025 (July) Scientific staff member, Artificial Intelligence Group (chair: Prof. Dr. Matthias Thimm), FernUniversität in Hagen, Faculty of Mathematics and Computer Science  
Full-time position with teaching duties (non-tenured)

2017 – 2022 Research assistant, Knowledge Based Systems (chair: Prof. Dr. Christoph Beierle), FernUniversität in Hagen, Faculty of Mathematics and Computer Science  
Full-time position with teaching duties and contributions to projects funded by *German Research Foundation* (DFG):  
FADE : Intentional forgetting through cognitive-computational methods of prioritization, knowledge compression and contraction  
FADEp: Intentional Forgetting and Changes in Work Processes: A Process-Conditional Approach in the Administrative and IT Context

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## Honors and awards

- Best PhD thesis **Best PhD thesis of the Faculty of Mathematics and Computer Science**  
Awarded by the FernUniversität in Hagen as part of the DIES ACADEMICUS 2023
- RuleML+RR 2022 **Best Student Paper Award**  
6th International Joint Conference on Rules and Reasoning  
For the paper *Semantic Characterizations of AGM Revision for Arbitrary Tarskain Logics* [18]  
Together with Faiq Miftakhul Falakh and Sebastian Rudolph
- Best scientific work **Best Scientific Work of the Year 2021**  
For the paper *A Conditional Perspective for Iterated Belief Contraction* [31]  
Awarded by the Faculty of Mathematics and Computer Science, FernUniversität in Hagen
- ECAI 2020 **Distinguished Paper Award**  
24th European Conference on Artificial Intelligence  
For the publication *A Conditional Perspective for Iterated Belief Contraction* [31]  
Together with Gabriele Kern-Isberner und Christoph Beierle

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## PC Chair

- ECSQARU 2025 The 18th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty
- FCAI 2025 Foundations and Future of Change in Artificial Intelligence
- FCR 2025 The 11th Workshop on Formal and Cognitive Reasoning
- Deduktionstreffen 2025 Annual meeting of the German automated reasoning community
- UR@FLAIRS 2024 Uncertain Reasoning Special Track at the 37th International FLAIRS Conference
- FCR 2024 The 10th Workshop on Formal and Cognitive Reasoning
- FCR 2023 The 9th Workshop on Formal and Cognitive Reasoning
- ICCS 2023 The 28th International Conference on Conceptual Structures
- NMR 2023 The 21st International Workshop on Nonmonotonic Reasoning
- UR@FLAIRS 2023 Uncertain Reasoning Special Track at the 36th International FLAIRS Conference
- FCR 2022 The 8th Workshop on Formal and Cognitive Reasoning

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## Further Academic Event Organization

- KR 2025 The 22nd International Conference on Principles of Knowledge Representation and Reasoning (Doctoral Consortium Chair)
- ECSQARU 2025 The 18th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (Chair)
- Declarative AI 2025 Rules, Reasoning, Decisions, and Explanations 2025 (Publicity Chair)
- COMMA 2024 The 10th International Conference on Computational Models of Argument (Workshop Contact)

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## Academic Activities

- Chair SIG KRR @ GI **Chair of the special interest group Knowledge Representation and Reasoning** (Fachgruppe Wissensrepräsentation und Schließen) of the technical committee Artificial Intelligence (Fachbereich Künstliche Intelligenz) of the German Computer Science Association (GI, Gesellschaft für Informatik), since 2024
- Guest editor International Journal of Approximate Reasoning (**IJAR**)  
Annals of Mathematics and Artificial Intelligence (**AMAI**)
- Journal reviewer Artificial Intelligence (**AIJ**)  
Applied Artificial Intelligence (**AAP**)  
International Journal of Approximate Reasoning (**IJAR**)  
Journal of Artificial Intelligence Research (**JAIR**)  
Künstliche Intelligenz (**KUIN**)  
Journal of Philosophical Logic (**JPL**)  
Transactions on Computational Logic (**TOCL**)  
**Synthese**  
**Studia Logica**
- Program committee International Conference of Principles of Knowledge Representation and Reasoning (**KR**), since 2022  
Annual Meeting of the Cognitive Science Society (**CogSci**), 2017 to 2022  
AAAI Conference on Artificial Intelligence (**AAAI**), since 2022  
International Joint Conference on Artificial Intelligence (**IJCAI**), since 2023  
European Conference on Logics in Artificial Intelligence (**JELIA**), since 2023  
Cognition And OntologieS (**CAOS**), since 2024  
International Conference on Scalable Uncertainty Management (**SUM**), since 2024  
International Workshop on Nonmonotonic Reasoning (**NMR**), since 2024

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## Research Visits/Invited Academic Activities

- Helsinki 2026 Research Visit at the University of Helsinki  
**Invited** by Prof. Juha Kontinen.  
Including an **Invited-Talk** with the title “*New Results on the Complexity of Preferential Reasoning*” at the Helsinki Logic Seminar
- BRAON 2024 The 6th Workshop On Belief Revision, Argumentation, Ontologies, and Norms  
**Invitation-only** event for scientific exchange on Madeira Island, Portugal
- Helsinki 2024 Research Visit at the University of Helsinki  
**Invited** by Prof. Juha Kontinen.  
Including an **Invited-Talk** with the title “*A Semantic Perspective of AGM Belief Revision in Tarskian Logics*” at the Helsinki Logic Seminar
- ICCS 2022 The 27th International Conference on Conceptual Structures  
**Tutorial** with title “*Forgetting in Knowledge Representation and Reasoning*”
- BRAON 2022 The 5th Workshop On Belief Revision, Argumentation, Ontologies, and Norms  
Invitation-only event for scientific exchange on Madeira Island, Portugal
- ECAI 2020 The 24th European Conference on Artificial Intelligence  
Title: “*Cognitive Logics: Mechanisms Predicting Human Inference Patterns*”  
**Tutorial** held at ECAI 2020 jointly with Marco Ragni and Gabriele Kern-Isberner
- BRAON 2019 The 4th Workshop On Belief Revision, Argumentation, Ontologies, and Norms  
Invitation-only event for scientific exchange on Madeira Island, Portugal
- KR Conventicle 2019 Knowledge Representation Conventicle 2019  
Co-located with the 16th Pacific Rim International Conference on Artificial Intelligence. **Invited-Talk** with the title “*Forgetting and Gradual Iterated Contraction*”.

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## Administrative Services

- since 2024 Faculty Council  
Faculty of Mathematics and Computer Science, FernUniversität in Hagen
- since 2024, Habilitation committee
- 2020 – 2022 Faculty of Mathematics and Computer Science, FernUniversität in Hagen
- 2020 Appointment committee for a new professor for databases and information systems  
Faculty of Mathematics and Computer Science, FernUniversität in Hagen
- 2015 – 2017 Appointment committee for a new professor for software engineering  
Department of Computer Science, TU Dortmund University
- 2015 – 2017 Doctoral committee  
Department of Computer Science, TU Dortmund University
- 2013 Appointment committee for a new professor for data mining  
Department of Computer Science, TU Dortmund University
- 2012 Appointment committee for a new professor for bioinformatics  
Faculty of Biology and Biotechnology, Ruhr University Bochum

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## Third-party funding

### Research grants:

- Co-authored Intentional Forgetting and Changes in Work Processes: A Process-Conditional Approach in the Administrative and IT Context (FADEp)  
Principal investigators: Christoph Beierle, Gabriele Kern-Isberner, Marco Ragni  
Successfully funded (*German Research Foundation, DFG, 730.000,00 €*)
- Co-authored Explainable Belief Merging (EBM)  
Principal investigator: Matthias Thimm  
Successfully funded (*German Research Foundation, DFG, 500.000,00 €*)
- Co-authored Argumentative Reasoning in Nonsensical Situations (ARNS)  
Principal investigator: Matthias Thimm, Viorica Sofronie-Stokkermans  
Successfully funded (*German Research Foundation, DFG, 360.000,00 €*)
- Under review Relational Theory Change (RTC)  
Principal investigator: **Kai Sauerwald**  
Submitted for reviewing (*German Research Foundation, DFG, 375.000,00 €*)
- Under review Machine Intelligence for the Dynamic Handling of Scientific Theories (MYST)  
Principal investigator: **Kai Sauerwald**  
Submitted for reviewing (*Vienna Science and Technology Fund, WWTF, 1.800.000 €*)

### Conference funding:

- Student grants The 21st International Workshop on Nonmonotonic Reasoning (NRM 2023)  
Successfully funded (*Artificial Intelligence Journal, 1.000,00€*)
- Student grants The 18th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU 2025)  
Successfully funded (*Artificial Intelligence Journal, 3.000,00€*)
- Best paper award The 18th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU 2025)  
Successfully funded (*Springer, 1.000,00€*)
- General funding The 18th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU 2025)  
Successfully funded (*German Research Foundation, DFG, 9.150,00€*)

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## References (co-authors)

**Prof. Dr. Juha Kontinen**

Professor of Mathematical Logic

Department of Mathematics and Statistics, University of Helsinki

Email: juha.kontinen@helsinki.fi

**Prof. Dr. Sebastian Rudolph**

Chair of the Computational Logics group

Faculty of Computer Science, TU Dresden

Email: sebastian.rudolph@tu-dresden.de

**Prof. Dr. Eduardo Fermé**

Head of the Department of Informatics Engineering and Interactive Media Design

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Dortmund, January 15, 2026



**Dr. Kai Sauerwald**