

Ralf Möller  
Direktor\*in  
Institut für Informationssysteme  
**E-Mail:** moeller@ifis.uni-luebeck.de  
**Telefon:** +49 451 3101-5704  
**Web-Adresse:** <http://www.ifis.uni-luebeck.de>

## Forschungsinteresse

Human-Compatible AI, Intellektik  
Dynamische Probabilistische Relationale Modelle, Maschinelles Lernen  
Datenbanken und Informationssysteme, Data Mining, Data Management  
Algorithmen und Datenstrukturen  
Anwendungen in Medizin, Geistes- und Naturwissenschaften sowie Technik

## Organisationszugehörigkeiten

**Direktor\*in**  
Institut für Informationssysteme  
Universität zu Lübeck  
Lübeck, Deutschland  
01.02.2024 → 31.12.2024

### **Sprecher der Research Unit Data Linking im DFG-Exzellenzcluster Understanding Written Artefacts**

Universität Hamburg  
Hamburg, Deutschland  
01.01.2018 → 01.01.2025

## Publikationen

### **Unsupervised Estimation of Subjective Content Descriptions.**

Bender, M., Braun, T., Möller, R. & Gehrke, M., 2023, S. 266-273. 8 S.

### **Variables are a Curse in Software Vulnerability Prediction.**

Groppe, J., Groppe, S. & Möller, R., 2023, *DEXA (1)*. S. 516-521 6 S. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Band 14146 LNCS).

### **Using decPOMDPcoms to Holistically Model and Program Nanodevices and Emergent Nanonetworks**

Lau, F.-L., Braun, T., Möller, R. & Fischer, S., 03.10.2022, *9th ACM International Conference on Nanoscale Computing and Communication 2022 (ACM NanoCom'22)*. Jornet, J. M. & Pierobon, M. (Hrsg.). Barcelona Catalunya Spain: Association for Computing Machinery, S. 1-7 7 S. 2

### **Deep Learning-Based Classification of Customer Communications of a German Utility Company**

Groppe, J., Schlichting, R., Groppe, S. & Möller, R., 2022, *Semantic Intelligence: Select Proceedings of ISIC 2022*. Groppe, S., Jain, S. & Bhargava, B. (Hrsg.). Springer Singapore, Band 1. (Lecture Notes in Electrical Engineering; Band 964).

### **Embodiment of an Agent by a Pepper Robot for Explaining Retrieval Results.**

Schiff, S., Bender, M. & Möller, R., 2022, S. 29-37.

### **Estimating Context-Specific Subjective Content Descriptions using BERT.**

Bender, M., Kuhr, F., Braun, T. & Möller, R., 2022, S. 171-172.

### **Lifting in Multi-agent Systems under Uncertainty**

Braun, T., Gehrke, M., Lau, F. & Möller, R., 2022, *38th Conference on Uncertainty in Artificial Intelligence (UAI 2022)*, Eindhoven, Netherlands, August 1-5, 2022. S. 233-243 11 S. (PMLR: Proceedings of Machine Learning Research).

### **Identifying and Translating Subjective Content Descriptions among Texts**

Bender, M., Braun, T., Gehrke, M., Kuhr, F., Möller, R. & Schiff, S., 01.12.2021, in: *International Journal of Semantic Computing*. 15, 4, S. 461-485 25 S.

### **Lifting DecPOMDPs for Nanoscale Systems – A Work in Progress**

Braun, T., Fischer, S., Lau, F. & Möller, R., 18.10.2021.

### **A First Step Towards Even More Sparse Encodings of Probability Distributions.**

Marwitz, F. A., Braun, T. & Möller, R., 2021, *ILP*. S. 183-192 10 S.

### **A Hybrid Factor Graph Model for Biomedical Activity Detection.**

Stender, M., Graßhoff, J., Braun, T., Möller, R. & Rostalski, P., 2021, *BHI*. S. 1-4 4 S.

### **Complementary Document Representations for Information Retrieval**

Melzer, S., Schiff, S. & Möller, R., 2021, *Proceedings of FLAIRS-34*.

### **Concept Drift Detection in Dynamic Probabilistic Relational Models.**

Finke, N., Braun, T., Gehrke, M. & Möller, R., 2021, *FLAIRS Conference*.

### **Context-specific Adaptation of Subjective Content Descriptions.**

Kuhr, F., Bender, M., Braun, T. & Möller, R., 2021, *ICSC*. S. 134-139 6 S.

### **Dynamic Domain Sizes in Temporal Probabilistic Relational Models.**

Finke, N., Braun, T., Gehrke, M. & Möller, R., 2021, *FLAIRS Conference*.

### **Enhancing Relational Topic Models with Named Entity Induced Links.**

Kuhr, F., Lichtenberger, M., Braun, T. & Möller, R., 2021, *ICSC*. S. 314-317 4 S.

### **Handling Overlaps When Lifting Gaussian Bayesian Networks.**

Hartwig, M., Braun, T. & Möller, R., 2021, *IJCAI*. S. 4228-4234 7 S.

### **Humanities-Centered AI: From Machine Learning to Machine Training**

Möller, R., 2021, *Humanities-Centred Artificial Intelligence, CHAI 2021: CEUR Workshop Proceedings*. Band 3093. S. 40-44

### **Identifying Subjective Content Descriptions among Texts.**

Bender, M., Braun, T., Gehrke, M., Kuhr, F., Möller, R. & Schiff, S., 2021, *ICSC*. S. 9-16 8 S.

### **KI 2021: Advances in Artificial Intelligence - 44th German Conference on AI, Virtual Event, September 27 - October 1, 2021, Proceedings**

Edelkamp, S. (Herausgeber\*in), Möller, R. (Herausgeber\*in) & Rueckert, E. (Herausgeber\*in), 2021, Springer. (Lecture Notes in Computer Science)(KI)

### **Modeling and Simulating Federated Databases for early Validation of Federated Searches using the Broker-based SysML Toolbox.**

Melzer, S., Thiemann, S. & Möller, R., 2021, *SysCon*. S. 1-6 6 S.

### **On Human-Aware Information Seeking**

Schiff, S. & Möller, R., 2021, *Humanities-Centred Artificial Intelligence, CHAI 2021: CEUR Workshop Proceedings*. S. 31-39

**On the Behaviour of Weighted Permutation Entropy on Fractional Brownian Motion in the Univariate and Multivariate Setting.**

Mohr, M., Wilhelm, F. & Möller, R., 2021, *FLAIRS Conference*.

**Ordering Principal Components of Multivariate Fractional Brownian Motion for Solving Inverse Problems.**

Mohr, M. & Möller, R., 2021, *APSIPA ASC*. S. 240-247 8 S.

**Recommendations for Data-Driven Degradation Estimation with Case Studies from Manufacturing and Dry-Bulk Shipping.**

Finke, N., Mohr, M., Lontke, A., Züfle, M., Kounev, S. & Möller, R., 2021, *RCIS*. S. 189-204 16 S.

**How to Encode Dynamic Gaussian Bayesian Networks as Gaussian Processes?**

Hartwig, M. & Möller, R., 27.11.2020, *AI 2020: AI 2020: Advances in Artificial Intelligence*. Gallagher, M., Moustafa, N. & Lakshika, E. (Hrsg.). Springer, Cham, Band 12576 LNAI. S. 371-382 12 S. (Lecture Notes in Computer Science; Band 12576 LNAI).

**Lifting Queries for Lifted Inference**

Braun, T. & Möller, R., 24.08.2020, *Frontiers in Artificial Intelligence and Applications*. De Giacomo, G., Catala, A., Dilkina, B., Milano, M., Barro, S., Bugarin, A. & Lang, J. (Hrsg.). IOS Press, Band 325. S. 2891 - 2892 22 S. (Frontiers in Artificial Intelligence and Applications).

**Augmenting and Automating Corpus Enrichment**

Kuhr, F., Braun, T., Bender, M. & Möller, R., 01.06.2020, in: *International Journal of Semantic Computing*. 14, 2, S. 173-197 25 S.

**New Approaches in Ordinal Pattern Representations for Multivariate Time Series**

Mohr, M., Wilhelm, F., Hartwig, M., Möller, R. & Keller, K., 01.05.2020, S. 124-129. 6 S.

**Maintaining Topic Models for Growing Corpora**

Kuhr, F., Bender, M., Braun, T. & Moller, R., 02.2020, *2020 IEEE 14th International Conference on Semantic Computing (ICSC)*. IEEE, S. 451-458 8 S. 9031467. (IEEE International Conference on Semantic Computing).

**AI-based Companion Services for Humanities**

Schiff, S., Kuhr, F., Melzer, S. & Möller, R., 2020.

**Branch-and-Bound Ranked Search by Minimizing Parabolic Polynomials.**

Poensgen, P. & Möller, R., 2020, in: *Open J. Databases*. 7, 1, S. 12-20 9 S., 1.

**Constructing Gaussian Processes for Probabilistic Graphical Models.**

Hartwig, M., Mohr, M. & Möller, R., 2020, *FLAIRS Conference*. S. 57-62 6 S.

**Investigating Maturity of Probabilistic Graphical Models for Dry-Bulk Shipping.**

Finke, N., Gehrke, M., Braun, T., Potten, T. & Möller, R., 2020, *PGM*. S. 197-208 12 S.

**Lifted Marginal Filtering for Asymmetric Models by Clustering-Based Merging.**

Lüdtke, S., Gehrke, M., Braun, T., Möller, R. & Kirste, T., 2020, *ECAI*. S. 2608-2615 8 S.

**Lifted Query Answering in Gaussian Bayesian Networks.**

Hartwig, M. & Möller, R., 2020, *PGM*. S. 233-244 12 S.

**On the Behaviour of Permutation Entropy on Fractional Brownian Motion in a Multivariate Setting.**

Mohr, M., Finke, N. & Möller, R., 2020, *APSIPA*. S. 189-196 8 S.

### **Quasi-Convex Scoring Functions in Branch-and-Bound Ranked Search.**

Poensgen, P. & Möller, R., 2020, in: *Open J. Databases*. 7, 1, S. 1-11 11 S., 1.

### **Taming Reasoning in Temporal Probabilistic Relational Models.**

Gehrke, M., Möller, R. & Braun, T., 2020, *ECAI*. S. 2592-2599 8 S.

### **Towards Collaborative Predictive Maintenance Leveraging Private Cross-Company Data.**

Mohr, M., Becker, C., Möller, R. & Richter, M., 2020, *GI-Jahrestagung*. S. 427-432 6 S.

### **Efficient Multiple Query Answering in Switched Probabilistic Relational Models**

Gehrke, M., Braun, T. & Möller, R., 25.11.2019, *AI 2019: Advances in Artificial Intelligence*. Liu, J. & Bailey, J. (Hrsg.). Springer, Cham, Band 11919 LNAI. S. 104-116 13 S. (Lecture Notes in Computer Science; Band 11919 LNAI).

### **Exploring Unknown Universes in Probabilistic Relational Models**

Braun, T. & Möller, R., 25.11.2019, *AI 2019: Advances in Artificial Intelligence*. Liu, J. & Bailey, J. (Hrsg.). Springer, Cham, Band 11919 LNAI. S. 91-103 13 S. (Lecture Notes in Computer Science; Band 11919 LNAI).

### **To Extend or Not to Extend? Context-Specific Corpus Enrichment**

Kuhr, F., Braun, T., Bender, M. & Möller, R., 25.11.2019, *AI 2019: Advances in Artificial Intelligence*. Liu, J. & Bailey, J. (Hrsg.). Springer, Cham, Band 11919 LNAI. S. 357-368 12 S. (Lecture Notes in Computer Science).

### **Approximate Query Answering in Complex Gaussian Mixture Models**

Hartwig, M., Gehrke, M. & Möller, R., 11.2019, *2019 IEEE International Conference on Big Knowledge (ICBK)*. IEEE, S. 81-86 6 S. 8944433. (IEEE International Conference on Big Knowledge).

### **Which Patient to Treat Next? Probabilistic Stream-Based Reasoning for Decision Support and Monitoring**

Gehrke, M., Schiff, S., Braun, T. & Möller, R., 11.2019, *2019 IEEE International Conference on Big Knowledge (ICBK)*. IEEE, S. 73-80 8 S. 8944691. (IEEE International Conference on Big Knowledge).

### **Lifted Temporal Most Probable Explanation**

Gehrke, M., Braun, T. & Möller, R., 19.06.2019, *ICCS 2019: Graph-Based Representation and Reasoning*. Endres, D., Alam, M. & Şotropa, D. (Hrsg.). Springer, Cham, Band 11530 LNAI. S. 72-85 14 S. (Lecture Notes in Computer Science; Band 11530 LNAI).

### **On Bounded-Memory Stream Data Processing with Description Logics**

Özçep, Ö. L. & Möller, R., 01.06.2019, *Description Logic, Theory Combination, and All That*. Springer Verlag, S. 639-660 22 S. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Band 11560 LNCS).

### **Lifted Temporal Maximum Expected Utility**

Gehrke, M., Braun, T. & Möller, R., 24.04.2019, *Canadian AI 2019: Advances in Artificial Intelligence*. Meurs, M.-J. & Rudzicz, F. (Hrsg.). Springer, Cham, Band 11489 LNAI. S. 380-386 7 S. (Lecture Notes in Computer Science; Band 11489 LNAI).

### **Uncertain Evidence for Probabilistic Relational Models**

Gehrke, M., Braun, T. & Möller, R., 24.04.2019, *Canadian AI 2019: Advances in Artificial Intelligence*. Meurs, M.-J. & Rudzicz, F. (Hrsg.). Springer, Cham, Band 11489 LNAI. S. 80-93 14 S. (Lecture Notes in Computer Science ; Band 11489 LNAI).

### **Constructing and Maintaining Corpus-Driven Annotations**

Kuhr, F. & Möller, R., 11.03.2019, *2019 IEEE 13th International Conference on Semantic Computing (ICSC)*. IEEE, S. 462-467 6 S. 8665672. (IEEE International Conference on Semantic Computing).

**2019 IEEE International Conference on Big Knowledge, ICBK 2019, Beijing, China, November 10-11, 2019**

Gao, Y. (Herausgeber\*in), Möller, R. (Herausgeber\*in), Wu, X. (Herausgeber\*in) & Kotagiri, R. (Herausgeber\*in), 2019, IEEE. (ICBK)

**Corpus-Driven Annotation Enrichment.**

Kuhr, F., Witten, B. & Möller, R., 2019, *ICSC*. S. 138-141 4 S.

**Influence-based independence**

Ozcep, O. L., Kuhr, F. & Moller, R., 2019, S. 26 - 31. 6 S.

**Lifted Maximum Expected Utility**

Gehrke, M., Braun, T., Möller, R., Waschkau, A., Strumann, C. & Steinhäuser, J., 2019, *Artificial Intelligence in Health*. Koch, F., Koster, A., Riaño, D., Montagna, S., Schumacher, M., ten Teije, A., Guttmann, C., Reichert, M., Bichindaritz, I., Herrero, P., Lenz, R., López, B., Marling, C., Martin, C., Montani, S. & Wiratunga, N. (Hrsg.). Cham: Springer International Publishing, S. 131-141 11 S.

**Relational Forward Backward Algorithm for Multiple Queries.**

Gehrke, M., Braun, T. & Möller, R., 2019, *FLAIRS Conference*. S. 464-469 6 S.

**Taming Reasoning in Temporal Probabilistic Relational Models.**

Gehrke, M., Möller, R. & Braun, T., 2019.

**Adaptive Inference on Probabilistic Relational Models**

Braun, T. & Möller, R., 10.11.2018, *AI 2018: Advances in Artificial Intelligence*. Mitrovic, T., Xue, B. & Li, X. (Hrsg.). Cham: Springer International Publishing, Band 11320. S. 487-500 14 S. (Lecture Notes in Computer Science; Band 11320).

**Answering Multiple Conjunctive Queries with the Lifted Dynamic Junction Tree Algorithm**

Gehrke, M., Braun, T. & Möller, R., 10.11.2018, *AI 2018: Advances in Artificial Intelligence*. Mitrovic, T., Xue, B. & Li, X. (Hrsg.). Cham: Springer International Publishing, Band 11320. S. 543-555 13 S. (Lecture Notes in Computer Science; Band 11320).

**An Ontology-mediated Analytics-aware Approach to Support Monitoring and Diagnostics of Static and Streaming Data**

Kharlamov, E., Kotidis, Y., Mailis, T., Neuenstadt, C., Nikolaou, C., Özçep, Ö. L., Svingos, C., Zheleznyakov, D., Ioannidis, Y., Lamparter, S. & Möller, R., 22.10.2018, in: *Journal of Web Semantics*. 32 S.

**Fusing First-Order Knowledge Compilation and the Lifted Junction Tree Algorithm**

Braun, T. & Möller, R., 30.08.2018, *KI 2018: Advances in Artificial Intelligence*. Trollmann, F. & Turhan, A.-Y. (Hrsg.). Cham: Springer International Publishing, Band 11117. S. 24-37 14 S. (Lecture Notes in Computer Science; Band 11117).

**Towards Preventing Unnecessary Groundings in the Lifted Dynamic Junction Tree Algorithm**

Gehrke, M., Braun, T. & Möller, R., 30.08.2018, *KI 2018: Advances in Artificial Intelligence*. Trollmann, F. & Turhan, A.-Y. (Hrsg.). Cham: Springer International Publishing, Band 11117. S. 38-45 8 S. (Lecture Notes in Computer Science; Band 11117).

**Answering Hindsight Queries with Lifted Dynamic Junction Trees**

Gehrke, M., Braun, T. & Möller, R., 02.07.2018. 8 S.

**Parameterised Queries and Lifted Query Answering**

Braun, T. & Möller, R., 01.07.2018, *Proceedings of the Twenty-Seventh International Joint Conference on Artificial Intelligence, IJCAI-18*. International Joint Conferences on Artificial Intelligence Organization, Band 2018-July. S. 4980-4986 7 S. (IJCAI International Joint Conference on Artificial Intelligence).

### **Towards lifted maximum expected utility**

Gehrke, M., Braun, T., Möller, R., Waschkau, A., Strumann, C. & Steinhäuser, J., 01.07.2018, *1st Joint Workshop on AI in Health*. CEUR-WS.org, Band 2142. S. 93-96 4 S. (CEUR Workshop Proceedings; Band 2142).

### **Lifted Dynamic Junction Tree Algorithm**

Gehrke, M., Braun, T. & Möller, R., 20.05.2018, *Graph-Based Representation and Reasoning*. Chapman, P., Endres, D. & Pernelle, N. (Hrsg.). Cham: Springer International Publishing, Band 10872. S. 55-69 15 S. (Lecture Notes in Computer Science; Band 10872).

### **Towards Foundations of Agents Reasoning on Streams of Percepts**

Özçep, Ö. L. & Möller, R., 10.05.2018, S. 80-85. 6 S.

### **Counting and Conjunctive Queries in the Lifted Junction Tree Algorithm**

Braun, T. & Möller, R., 21.03.2018, *Graph Structures for Knowledge Representation and Reasoning*. Croitoru, M., Marquis, P., Rudolph, S. & Stapleton, G. (Hrsg.). Cham: Springer International Publishing, Band 10775. S. 54-72 19 S. (Lecture Notes in Computer Science; Band 10775).

### **Efficient Enriching of Synthesized Relational Patient Data with Time Series Data**

Schiff, S., Gehrke, M. & Möller, R., 2018, in: *Procedia Computer Science*. 141, S. 531 - 538 8 S.

### **Lifted Most Probable Explanation**

Braun, T. & Möller, R., 2018, *Lecture Note in Artificial Intelligence*. Band 10872.

### **Ontology-based Data Access to Big Data**

Schiff, S., Özçep, Ö. L. & Möller, R., 2018, in: *Open Journal of Databases (OJDB)*. 11 S.

### **Preventing Unnecessary Groundings in the Lifted Dynamic Junction Tree Algorithm.**

Gehrke, M., Braun, T. & Möller, R., 2018, *AI 2018: Advances in Artificial Intelligence*. S. 556-562

### **Preventing Unnecessary Groundings in the Lifted Dynamic Junction Tree Algorithm.**

Gehrke, M., Braun, T. & Möller, R., 2018.

### **Towards lifted maximum expected utility.**

Gehrke, M., Braun, T., Möller, R., Waschkau, A., Strumann, C. & Steinhäuser, J., 2018, *AIH@IJCAI*. S. 93-96 4 S.

### **Towards Lifted Maximum Expected Utility. Proceedings of the Joint Workshop on AI in Health in Conjunction with the 27th IJCAI, the 23rd ECAI, the 17th AAMAS, and the 35th ICML**

Gehrke, M., Braun, T., Möller, R., Waschkau, A., Strumann, C. & Steinhäuser, J., 2018, *Towards Lifted Maximum Expected Utility. Proceedings of the Joint Workshop on AI in Health in Conjunction with the 27th IJCAI, the 23rd ECAI, the 17th AAMAS, and the 35th ICML*. Springer

### **Selection of Pareto-efficient response plans based on financial and operational assessments**

Motzek, A., Gonzalez-Granadillo, G., Debar, H., Garcia-Alfaro, J. & Möller, R., 01.12.2017, in: *Eurasip Journal on Information Security*. 2017, 1, 12.

### **Time Series Data Mining for Network Service Dependency Analysis**

Lange, M. & Möller, R., 01.10.2017, *International Joint Conference SOCO'16-CISIS'16-ICEUTE'16*. Graña, M., López-Guede, J. M., Etxaniz, O., Herrero, Á., Quintián, H. & Corchado, E. (Hrsg.). Cham: Springer International Publishing, Band 527. S. 584-594 11 S. (Advances in Intelligent Systems and Computing; Band 527).

### **Preventing Groundings and Handling Evidence in the Lifted Junction Tree Algorithm**

Braun, T. & Möller, R., 19.09.2017, *KI 2017: Advances in Artificial Intelligence*. Kern-Isberner, G., Fürnkranz, J. & Thimm, M. (Hrsg.). Cham: Springer International Publishing, Band 10505. S. 85-98 14 S. (Lecture Notes in Computer Science; Band 10505).

### **Unsupervised Text Annotations**

Braun, T., Kuhr, F. & Möller, R., 01.09.2017, *Proceedings of the 6th Workshop on Dynamics of Knowledge and Belief (DKB-2017) and the 5th Workshop KI Kognition (KIK-2017) co-located with 40th German Conference on Artificial Intelligence (KI 2017)*. CEUR-WS.org, Band 1928. S. 23-30 8 S. (CEUR Workshop Proceedings; Band 1928).

### **Indirect Causes in Dynamic Bayesian Networks Revisited**

Motzek, A. & Möller, R., 27.05.2017, in: *Journal of Artificial Intelligence Research (JAIR)*. 59, S. 1-58 58 S.

### **Semantic access to streaming and static data at Siemens**

Kharlamov, E., Mailis, T., Mehdi, G., Neuenstadt, C., Özçep, Ö., Roshchin, M., Solomakhina, N., Soylyu, A., Svingos, C., Brandt, S., Giese, M., Ioannidis, Y., Lamparter, S., Möller, R., Kotidis, Y. & Waaler, A., 01.05.2017, in: *Journal of Web Semantics*. 44, S. 54-74 21 S.

### **Context- and bias-free probabilistic mission impact assessment**

Motzek, A. & Möller, R., 01.03.2017, in: *Computers and Security*. 65, S. 166-186 21 S.

### **Unsupervised Text Annotation.**

Braun, T., Kuhr, F. & Möller, R., 2017, *DKB/KIK@KI*. S. 23-30 8 S.

### **Semantic Normalization and Merging of Business Dependency Models**

Motzek, A., Geick, C. & Möller, R., 12.12.2016, *CBI 2016: 18th IEEE Conference on Business Informatics, Paris, France, August 29 - September 1*. IEEE, S. 7-15 9 S. (IEEE Proceedings).

### **Abductive Conjunctive Query Answering w.r.t. Ontologies**

Möller, R., Özçep, Ö. L., Haarslev, V., Nafissi, A. & Wessel, M., 13.10.2016, in: *KI - Künstliche Intelligenz*. 30, 2, S. 177-182 6 S.

### **Reasoning about Imprecise Beliefs in Multi-Agent Systems with PDT Logic**

Martiny, K. & Möller, R., 13.10.2016, in: *KI - Künstliche Intelligenz*. 31, 1, S. 1-9 9 S.

### **Towards Analytics Aware Ontology Based Access to Static and Streaming Data**

Möller, R., Kharlamov, E., Kotidis, Y., Brandt, S., Mailis, T., Neuenstadt, C., Nikolaou, C., Özçep, Ö. L., Svingos, C., Zheleznyakov, D., Horrocks, I., Ioannidis, Y. & Lamparter, S., 23.09.2016, *The Semantic Web -- ISWC 2016*. Groth, P., Simperl, E., Gray, A., Sabou, M., Krötzsch, M., Lecue, F., Flöck, F. & Gil, Y. (Hrsg.). Cham: Springer International Publishing, Band 9982. S. 344-362 19 S. (Lecture Notes in Computer Science; Band 9982).

### **Lifted Junction Tree Algorithm**

Braun, T. & Möller, R., 08.09.2016, *KI 2016: Advances in Artificial Intelligence*. Friedrich, G., Helmert, M. & Wotawa, F. (Hrsg.). Cham: Springer International Publishing, Band 9904. S. 30-42 13 S. (Lecture Notes in Computer Science; Band 9904).

### **Using a Deep Understanding of Network Activities for Workflow Mining**

Lange, M., Kuhr, F. & Möller, R., 08.09.2016, *KI 2016: Advances in Artificial Intelligence*. Friedrich, G., Helmert, M. & Wotawa, F. (Hrsg.). Cham: Springer International Publishing, Band 9904. S. 177-184 8 S. (Lecture Notes in Computer Science; Band 9904).

### **PDT Logic: A probabilistic doxastic temporal logic for reasoning about beliefs in multi-Agent systems**

Martiny, K. & Möller, R., 01.09.2016, in: *Journal of Artificial Intelligence Research*. 57, S. 39-112 74 S.

### **Using a Deep Understanding of Network Activities for Network Vulnerability Assessment**

Lange, M., Kuhr, F. & Möller, R., 01.08.2016, *Proceedings of the 1st International Workshop on AI for Privacy and Security, PrAISe@ECAI 2016, The Hague, Netherlands, 29.08.-02.09.*. IOS Press, Band 285. S. 1583 - 1585 3 S. (Frontiers in Artificial Intelligence and Applications).

### **Ontology-Based Integration of Streaming and Static Relational Data with Optique**

Brandt, S., Neuenstadt, C., Özçep, Ö., Pinkel, C., Zheleznyakov, D., Horrocks, I., Möller, R., Kharlamov, E., Jiménez-Ruiz, E., Kotidis, Y., Lamparter, S., Mailis, T., Svingos, C. & Ioannidis, Y., 26.06.2016, *Proceedings of the 2016 International Conference on Management of Data*. New York, NY, USA: ACM, S. 2109-2112 4 S. (Proceedings of the ACM SIGMOD International Conference on Management of Data).

### **Enabling Semantic Access to Static and Streaming Distributed Data with Optique: Demo**

Brandt, S., Neuenstadt, C., Özçep, Ö., Pinkel, C., Zheleznyakov, D., Horrocks, I., Möller, R., Kharlamov, E., Jiménez-Ruiz, E., Kotidis, Y., Lamparter, S., Mailis, T., Soyulu, A., Svingos, C., Ioannidis, Y., Waaler, A. & Giese, M., 13.06.2016, *Proceedings of the 10th ACM International Conference on Distributed and Event-based Systems*. New York, NY, USA: ACM, S. 350-353 4 S. (International Conference on Distributed and Event-Based Systems).

### **A semantic approach to polystores**

Kharlamov, E., Mailis, T., Bereta, K., Bilidas, D., Brandt, S., Jimenez-Ruiz, E., Lamparter, S., Neuenstadt, C., Ozcep, O., Soyulu, A., Svingos, C., Xiao, G., Zheleznyakov, D., Calvanese, D., Horrocks, I., Giese, M., Ioannidis, Y., Kotidis, Y., Moller, R. & Waaler, A., 2016, *2016 IEEE International Conference on Big Data (Big Data)*. IEEE, S. 2565-2573 9 S. 7840898. (IEEE International Conference on Big Data Proceedings).

### **Probabilistic Mission Defense and Assurance**

Motzek, A. & Möller, R., 2016. 18 S.

### **Scalable semantic access to siemens static and streaming distributed data?**

Kharlamov, E., Brandt, S., Giese, M., Jiménez-Ruiz, E., Kotidis, Y., Lamparter, S., Mailis, T., Neuenstadt, C., Özçep, Pinkel, C., Soyulu, A., Svingos, C., Zheleznyakov, D., Horrocks, I., Ioannidis, Y., Möller, R. & Waaler, A., 2016. 4 S.

### **Towards Analytics Aware Ontology Based Access to Static and Streaming Data (Extended Version).**

Kharlamov, E., Kotidis, Y., Mailis, T., Neuenstadt, C., Nikolaou, C., Özçep, Ö. L., Svingos, C., Zheleznyakov, D., Lamparter, S., Horrocks, I., Ioannidis, Y. E. & Möller, R., 2016, in: CoRR. abs/1607.05351

### **Using a Deeper Understanding of Network Activities for Security Event Management**

Lange, M., Kuhr, F. & Möller, R., 2016, in: International Journal of Network Security & Its Applications (IJNSA). 21 S.

### **Event Prioritization and Correlation Based on Pattern Mining Techniques**

Lange, M., Möller, R., Lang, G. & Kuhr, F., 01.12.2015, *2015 IEEE 14th International Conference on Machine Learning and Applications (ICMLA)*. IEEE, S. 1234-1239 6 S. (IEEE Proceedings).

### **Abduction in PDT Logic**

Martiny, K. & Möller, R., 22.11.2015, *AI 2015: Advances in Artificial Intelligence*. Pfahringer, B. & Renz, J. (Hrsg.). Cham: Springer International Publishing, Band 9457. S. 398-410 13 S. (Lecture Notes in Computer Science; Band 9457).

### **Stream-Query Compilation with Ontologies**

Özçep, Ö. L., Möller, R. & Neuenstadt, C., 22.11.2015, *AI 2015: Advances in Artificial Intelligence*. Pfahringer, B. & Renz, J. (Hrsg.). Cham: Springer International Publishing, Band 9457. S. 457-463 7 S. (Lecture Notes in Computer Scienc; Band 9457).

### **Dealing Efficiently with Ontology-Enhanced Linked Data for Multimedia**

Gries, O., Möller, R., Nafissi, A., Rosenfeld, M., Sokolski, K. & Wandelt, S., 01.09.2015, *Proceedings of the 1st Workshop on High-Level Declarative Stream Processing co-located with the 38th German AI conference (KI 2015), Dresden, Germany, September 22, 2015.* CEUR-WS.org, Band 1447. S. 28-41 14 S. (CEUR Workshop Proceedings; Band 1447).

### **OBDA for Temporal Querying and Streams with STARQL**

Neuenstadt, C., Möller, R. & Özçep, Ö. L., 01.09.2015, *HiDeSt '15---Proceedings of the First Workshop on High-Level Declarative Stream Processing (co-located with KI 2015)*. Nicklas, D. & Özçep, Ö. L. (Hrsg.). CEUR-WS.org, Band 1447. S. 70-75 6 S. (CEUR Workshop Proceedings; Band 1447).



### **Stream-temporal Querying with Ontologies**

Möller, R., Neuenstadt, C. & Özçep, Ö. L., 01.09.2015, *HiDeSt '15---Proceedings of the First Workshop on High-Level Declarative Stream Processing (co-located with KI 2015)*. Nicklas, D. & Özçep, Ö. L. (Hrsg.). CEUR-WS.org, Band 1447. S. 42-55 14 S. (CEUR Workshop Proceedings; Band 1447).

### **Mission Impact Assessment in Power Grids**

Lange, M., Krotofil, M. & Möller, R., 01.06.2015. 12 S.

### **Probabilistic Mission Impact Assessment based on Widespread Local Events**

Motzek, A., Möller, R., Lange, M. & Dubus, S., 01.06.2015. 13 S.

### **Formalizing Agents' Beliefs for Cyber-Security Defense Strategy Planning**

Martiny, K., Motzek, A. & Möller, R., 27.05.2015, *International Joint Conference*. Herrero, Á., Baruque, B., Sedano, J., Quintián, H. & Corchado, E. (Hrsg.). Cham: Springer International Publishing, Band 369. S. 15-25 11 S. (Advances in Intelligent Systems and Computing; Band 369).

### **A Probabilistic Doxastic Temporal Logic for Reasoning about Beliefs in Multi-agent Systems**

Martiny, K. & Möller, R., 01.01.2015, *Proceedings of the International Conference on Agents and Artificial Intelligence - Volume 2: ICAART*. SciTePress, Band 2. S. 277-284 8 S. (International Conference on Agents and Artificial Intelligence).

### **Exploiting Innocuousness in Bayesian Networks**

Motzek, A. & Möller, R., 2015, *AI 2015: Advances in Artificial Intelligence*. Pfahringer, B. & Renz, J. (Hrsg.). Cham: Springer International Publishing, Band 9457. S. 411-423 13 S. (Lecture Notes in Computer Science; Band 9457).

### **PDT Logic for Stream Reasoning in Multi-agent Systems**

Martiny, K. & Möller, R., 01.12.2014, S. 35-46. 12 S.

### **A Stream-Temporal Query Language for Ontology Based Data Access**

Özçep, Ö. L., Möller, R. & Neuenstadt, C., 01.10.2014, *KI 2014: Advances in Artificial Intelligence*. Lutz, C. & Thielscher, M. (Hrsg.). Cham: Springer International Publishing, Band 8736. S. 183-194 12 S. (Lecture Notes in Computer Science; Band 8736).

### **Ontology Based Data Access on Temporal and Streaming Data**

Özçep, Ö. L. & Möller, R., 01.09.2014, *Reasoning on the Web in the Big Data Era: 10th International Summer School 2014, Athens, Greece, September 8-13, 2014. Proceedings*. Koubarakis, M., Stamou, G., Stoilos, G., Horrocks, I., Kolaitis, P., Lausen, G. & Weikum, G. (Hrsg.). Cham: Springer International Publishing, Band 8714. S. 279-312 34 S. (Lecture Notes in Computer Science; Band 8714).

### **CASAM: collaborative human-machine annotation of multimedia.**

Hendley, R. J., Beale, R., Bowers, C. P., Georgousopoulos, C., Vassiliou, C., Petridis, S., Möller, R., Karstens, E. & Spiliotopoulos, D., 2014, in: *Multim. Tools Appl.* 70, 2, S. 1277-1308 32 S., 2.

### **Identifikation von Varianten durch Berechnung der semantischen Differenz von Modellen**

Melzer, S., God, R., Kiehl, T., Möller, R. & Wessel, M., 2014, *Tag des Systems Engineering*. Carl Hanser Verlag, S. 279-288 10 S.

### **Addressing Streaming and Historical Data in OBDA Systems: Optique's Approach.**

Horrocks, I., Hubauer, T., Jiménez-Ruiz, E., Kharlamov, E., Koubarakis, M., Möller, R., Bereta, K., Neuenstadt, C., Özçep, Ö. L., Roshchin, M., Smeros, P. & Zheleznyakov, D., 2013, *KNOW@LOD*. S. 33-40 8 S.

### **Advances in Accessing Big Data with Expressive Ontologies.**

Möller, R., Neuenstadt, C., Özçep, Ö. L. & Wandelt, S., 2013, *Description Logics*. S. 842-853 12 S.

**BOEMIE: Reasoning-based Information Extraction.**

Petasis, G., Möller, R. & Karkaletsis, V., 2013, *NLPAR@LPNMR*. S. 60-75 16 S.

**Optique: OBDA Solution for Big Data.**

Calvanese, D., Giese, M., Haase, P., Horrocks, I., Hubauer, T., Ioannidis, Y. E., Jiménez-Ruiz, E., Kharlamov, E., Kllapi, H., Klüwer, J. W., Koubarakis, M., Lamparter, S., Möller, R., Neuenstadt, C., Nordtveit, T., Özçep, Ö. L., Rodriguez-Muro, M., Roshchin, M., Savo, D. F. & Schmidt, M. &3 mehr, Soylu, A., Waaler, A. & Zheleznyakov, D., 2013, *ESWC (Satellite Events)*. S. 293-295 3 S.

**Spatial Semantics for Concepts.**

Özçep, Ö. L. & Möller, R., 2013, *Description Logics*. S. 816-828 13 S.

**The Optique Project: Towards OBDA Systems for Industry (Short Paper).**

Calvanese, D., Giese, M., Haase, P., Horrocks, I., Hubauer, T., Ioannidis, Y. E., Jiménez-Ruiz, E., Kharlamov, E., Kllapi, H., Koubarakis, M., Lamparter, S., Möller, R., Neuenstadt, C., Özçep, Ö. L., Rodriguez-Muro, M., Roshchin, M., Ruzzi, M., Savo, D. F., Schmidt, M. & Soylu, A. &2 mehr, Waaler, A. & Zheleznyakov, D., 2013, *OWLED*.

**Scalable geo-thematic query answering**

Özçep, Ö. L. & Möller, R., 12.11.2012, *ISWC 2012: The Semantic Web – ISWC 2012*. Springer Verlag, S. 658-673 16 S. (Lecture Notes in Computer Science).

**Nearness rules and scaled proximity**

Ozçep, Ö. L., Grütter, R. & Möller, R., 01.01.2012, *ECAI 2012*. IOS Press, Band 242. (Frontiers in Artificial Intelligence and Applications; Band 242).

**Combining DL-Lite with Spatial Calculi for Feasible Geo-thematic Query Answering.**

Özçep, Ö. L. & Möller, R., 2012, *Description Logics*.

**Computationally Feasible Query Answering over Spatio-thematic Ontologies**

Özçep, Ö. L. & Möller, R., 2012, *Proceedings of The Fourth International Conference on Advanced Geographic Information Systems, Applications, and Services, GEOProcessing 2012*.

**Dynamics of a Nearness Relation—First Results**

Özçep, Ö. L., Grütter, R. & Möller, R., 2012, *Proceedings of the Workshop STeDy 2012*. Bhatt, M., Guesgen, H. W. & Davis, E. (Hrsg.). S. 1-7 7 S.

**The RacerPro knowledge representation and reasoning system.**

Haarslev, V., Hidde, K., Möller, R. & Wessel, M., 2012, in: *Semantic Web*. 3, 3, S. 267-277 11 S., 3.

**Towards ABox Modularization of semi-expressive Description Logics.**

Wandelt, S. & Möller, R., 2012, in: *Appl. Ontology*. 7, 2, S. 133-167 35 S., 2.

**Towards Semantic Summaries over Ontologies.**

Wandelt, S. & Möller, R., 2012, *KEOD*. S. 196-201 6 S.

**Logical formalization of multimedia interpretation**

Espinosa, S., Kaya, A. & Möller, R., 16.05.2011, *Knowledge-Driven Multimedia Information Extraction and Ontology Evolution: Bridging the Semantic Gap*. Paliouras, G., Spyropoulos, C. & Tsatsaronis, G. (Hrsg.). S. 110-133 24 S. (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Band 6050).

**Islands and Query Answering for ALCHI-Ontologies**

Wandelt, S. & Möller, R., 28.03.2011, *IC3K 2009: Knowledge Discovery, Knowledge Engineering and Knowledge Management*. Springer Vieweg, Berlin Heidelberg, Band 128. S. 224-236 13 S. (Communications in Computer and

Information Science; Band 128).

**Zur Rolle der Logik bei der Entwicklung Intelligenter Systeme.**

Möller, R., 2011, in: *Künstliche Intell.* 25, 4, S. 309-311 3 S., 4.

**A probabilistic abduction engine for media interpretation based on ontologies**

Gries, O., Möller, R., Nafissi, A., Rosenfeld, M., Sokolski, K. & Wessel, M., 08.11.2010, *RR 2010: Web Reasoning and Rule Systems*. Springer Vieweg, Berlin Heidelberg, Band 6333. S. 182-194 13 S. (Lecture Notes in Computer Science).

**Distributed Island-based Query Answering for Expressive Ontologies.**

Wandelt, S. & Möller, R., 2010, *Description Logics*.

**Distributed Island-Based Query Answering for Expressive Ontologies.**

Wandelt, S. & Möller, R., 2010, *GPC*. S. 461-470 10 S.

**Gibbs Sampling in Probabilistic Description Logics with Deterministic Dependencies.**

Gries, O. & Möller, R., 2010, *UniDL*.

**Sound Summarizations for Alchi Ontologies - How to Speedup Instance Checking and Instance Retrieval.**

Wandelt, S. & Möller, R., 2010, *ICAART (1)*. S. 656-661 6 S.

**Towards Scalable Instance Retrieval over Ontologies.**

Wandelt, S., Möller, R. & Wessel, M., 2010, in: *Int. J. Softw. Informatics*. 4, 3, S. 201-218 18 S., 3.

**Formalizing Multimedia Interpretation based on Abduction over Description Logic ABoxes**

Peraldi, S. E., Kaya, A. & Möller, R., 01.12.2009, in: *CEUR Workshop Proceedings*. 477, 12 S.

**Algebraic Tableau Algorithm for ALCOQ.**

Faddoul, J., Haarslev, V. & Möller, R., 2009, *Description Logics*.

**Flexible software architectures for ontology-based information systems.**

Wessel, M. & Möller, R., 2009, in: *J. Appl. Log.* 7, 1, S. 75-99 25 S., 1.

**Islands and Query Answering for Alchi-ontologies.**

Wandelt, S. & Möller, R., 2009, *IC3K*. S. 224-236 13 S.

**Multimedia Interpretation for Dynamic Ontology Evolution.**

Castano, S., Peraldi, I. S. E., Ferrara, A., Karkaletsis, V., Kaya, A., Möller, R., Montanelli, S., Petasis, G. & Wessel, M., 2009, in: *J. Log. Comput.* 19, 5, S. 859-897 39 S., 5.

**Querying Large-Scale Ontologies.**

Möller, R., 2009, *SEBD*. S. 1-2 2 S.

**Tableau-Based Reasoning.**

Möller, R. & Haarslev, V., 2009, *Handbook on Ontologies*. S. 509-528 20 S.

**The BOEMIE Semantic Browser: A Semantic Application Exploiting Rich Semantic Metadata.**

Kaya, A., Peraldi, I. S. E. & Möller, R., 2009, *GI Jahrestagung*. S. 3049-3063 15 S.

**Updatable Island Reasoning for Alchi-ontologies.**

Wandelt, S. & Möller, R., 2009, *KEOD*. S. 48-55 8 S.

**What Happened to Bob? Semantic Data Mining of Context Histories.**

Wessel, M., Luther, M. & Möller, R., 2009, *Description Logics*.

**08091 Abstracts Collection - Logic and Probability for Scene Interpretation.**

Neumann, B., Cohn, A. G., Hogg, D. C. & Möller, R., 2008, *Logic and Probability for Scene Interpretation*.

**A Hybrid Tableau Algorithm for ALCQ.**

Faddoul, J., Farsinia, N., Haarslev, V. & Möller, R., 2008, *Description Logics*.

**A Hybrid Tableau Algorithm for [Ascr ][Lscr ][Cscr ][Qscr ].**

Faddoul, J., Farsinia, N., Haarslev, V. & Möller, R., 2008, *ECAI*. S. 725-726 2 S.

**ContraBovemRufum: A System for Probabilistic Lexicographic Entailment.**

Näth, T. H. & Möller, R., 2008, *Description Logics*.

**Implementing probabilistic description logics: An application to image interpretation.**

Möller, R. & Näth, T. H., 2008, *Logic and Probability for Scene Interpretation*.

**Incremental Evaluation of OCL Invariants in the Essential MOF Object Model.**

García, M. & Möller, R., 2008, *Modellierung*. S. 11-26 16 S.

**Island Reasoning for [Ascr ][Lscr ][Cscr ][Hscr ][Ischr ] Ontologies.**

Wandelt, S. & Möller, R., 2008, *FOIS*. S. 164-177 14 S.

**Logic and Probability for Scene Interpretation, 24.02. - 29.02.2008**

Cohn, A. G. (Herausgeber\*in), Hogg, D. C. (Herausgeber\*in), Möller, R. (Herausgeber\*in) & Neumann, B. (Herausgeber\*in), 2008, Internationales Begegnungs- und Forschungszentrum für Informatik (IBFI), Schloss Dagstuhl, Germany. (Dagstuhl Seminar Proceedings)(Logic and Probability for Scene Interpretation)

**Mapping Validation by Probabilistic Reasoning.**

Castano, S., Ferrara, A., Lorusso, D., Näth, T. H. & Möller, R., 2008, *ESWC*. S. 170-184 15 S.

**On Ontology Based Abduction for Text Interpretation.**

Peraldi, I. S. E., Kaya, A., Melzer, S. & Möller, R., 2008, *CICLing*. S. 194-205 12 S.

**On scene interpretation with description logics.**

Neumann, B. & Möller, R., 2008, in: *Image Vis. Comput.* 26, 1, S. 82-101 20 S., 1.

**On the Scalability of Description Logic Instance Retrieval.**

Haarslev, V. & Möller, R., 2008, in: *J. Autom. Reason.* 41, 2, S. 99-142 44 S., 2.

**The Revival of Structural Subsumption in Tableau-based Reasoners.**

Möller, R., Haarslev, V. & Wandelt, S., 2008, *Description Logics*.

**Towards a Media Interpretation Framework for the Semantic Web.**

Peraldi, I. S. E., Kaya, A., Melzer, S., Möller, R. & Wessel, M., 2008, *Logic and Probability for Scene Interpretation*.

**Building a commercial OWL reasoner with Lisp.**

Möller, R., 2007, *ILC*. S. 5 1 S.

**Certification of transformation algorithms in model-driven software development.**

García, M. & Möller, R., 2007, *Software Engineering*. S. 107-118 12 S.

**Design Principles and Realization Techniques for User Friendly, Interactive, and Scalable Ontology Browsing and Inspection Tools.**

Wessel, M. & Möller, R., 2007, *OWLED*.

**Leveraging the Expressivity of Grounded Conjunctive Query Languages.**

Kaplunova, A., Möller, R. & Wessel, M., 2007, *OTM Workshops (2)*. S. 1176-1186 11 S.

**Scalability of OWL Reasoning: Role condensates.**

Wandelt, S. & Möller, R., 2007, *OTM Workshops (2)*. S. 1145-1154 10 S.

**Towards a Foundation for Knowledge Management: Multimedia Interpretation as Abduction.**

Kaya, A., Melzer, S., Möller, R., Espinosa, S. & Wessel, M., 2007, *Description Logics*.

**Towards a Scalable and Efficient Middleware for Instance Retrieval Inference Services.**

Kaya, A., Möller, R., Kaplunova, A. & Berger, T., 2007, *OWLED*.

**Cost-Efficient Web Service compositions for querying processes over reasoning services.**

Peraldi, I. S. E. & Möller, R., 2006, *Description Logics*.

**Experiences with Load Balancing and Caching for Semantic Web Applications.**

Kaplunova, A., Kaya, A. & Möller, R., 2006, *Description Logics*.

**How sensor data interpretation could benefit from description logics: A practical case study.**

Möller, R. & Melzer, S., 2006, *Description Logics*.

**Reasoning Support for Ontology Design.**

Lutz, C., Baader, F., Franconi, E., Lembo, D., Möller, R., Rosati, R., Sattler, U., Suntisrivaraporn, B. & Tessaris, S., 2006, *OWLED*.

**A High Performance Semantic Web Query Answering Engine.**

Wessel, M. & Möller, R., 2005, *Description Logics*.

**Description Logic Inference Technology: Lessons Learned in the Trenches.**

Haarslev, V., Möller, R. & Wessel, M., 2005, *Description Logics*.

**Development of a server to support the formal semantic web query language OWL-QL.**

Galinski, J., Kaya, A. & Möller, R., 2005, *Description Logics*.

**Extended Query Facilities for Racer and an Application to Software-Engineering Problems.**

Haarslev, V., Möller, R., Straeten, R. V. D. & Wessel, M., 2004, *Description Logics*.

**Optimization Techniques for Retrieving Resources Described in OWL/RDF Documents: First Results.**

Haarslev, V. & Möller, R., 2004, *KR*. S. 163-174 12 S.

**Proceedings of the 2004 International Workshop on Description Logics (DL2004), Whistler, British Columbia, Canada, June 6-8, 2004**

Haarslev, V. (Herausgeber\*in) & Möller, R. (Herausgeber\*in), 2004, CEUR-WS.org. (CEUR Workshop Proceedings)(Description Logics)

**Combining cardinal direction relations and relative orientation relations in Qualitative Spatial Reasoning**

Islı, A., Haarslev, V. & Möller, R., 2003, in: CoRR. cs.AI/0307048

**Description Logics for the Semantic Web: Racer as a Basis for Building Agent Systems.**

Möller, R. & Haarslev, V., 2003, in: Künstliche Intell.. 17, 3, S. 10- 3.

**Description Logic Systems.**

Möller, R. & Haarslev, V., 2003, *Description Logic Handbook*. S. 282-305 24 S.

**Description Logic Systems with Concrete Domains: Applications for the Semantic Web.**

Haarslev, V. & Möller, R., 2003, *KRDB*.

**Graphical Interfaces for Racer: Querying DAML+OIL and RDF Documents.**

Möller, R., Cornet, R. & Haarslev, V., 2003, *Description Logics*.

**Incremental Query Answering for Implementing Document Retrieval Services.**

Haarslev, V. & Möller, R., 2003, *Description Logics*.

**Racer: A Core Inference Engine for the Semantic Web.**

Haarslev, V. & Möller, R., 2003, *EON*.

**The DIG Description Logic Interface.**

Bechhofer, S., Möller, R. & Crowther, P., 2003, *Description Logics*.

**Adding ternary complex roles to ALCRP(D).**

Kaplunova, A., Haarslev, V. & Möller, R., 2002, *Description Logics*.

**Optimization Strategies for Instance Retrieval.**

Haarslev, V. & Möller, R., 2002, *Description Logics*.

**Practical Reasoning in RACER with a Concrete Domain for Linear Inequalities.**

Haarslev, V. & Möller, R., 2002, *Description Logics*.

**Visual Spatial Query Languages: A Semantics Using Description Logic.**

Haarslev, V., Möller, R. & Wessel, M., 2002, *Diagrammatic Representation and Reasoning*. S. 387-403 17 S.

**Combining Tableaux and Algebraic Methods for Reasoning with Qualified Number Restrictions.**

Haarslev, V., Timmann, M. & Möller, R., 2001, *Description Logics*.

**Description of the RACER System and its Applications.**

Haarslev, V. & Möller, R., 2001, *Description Logics*.

**Exploiting Pseudo Models for TBox and ABox Reasoning in Expressive Description Logics.**

Haarslev, V., Möller, R. & Turhan, A.-Y., 2001, *IJCAR*. S. 61-75 15 S.

**Extended with Concrete Domains: A Practically Motivated Approach.**

Haarslev, V., Möller, R. & Wessel, M., 2001, *IJCAR*. S. 29-44 16 S.

**High Performance Reasoning with Very Large Knowledge Bases: A Practical Case Study.**

Haarslev, V. & Möller, R., 2001, *IJCAI*. S. 161-168 8 S.

**Optimizing Reasoning in Description Logics with Qualified Number Restrictions.**

Haarslev, V. & Möller, R., 2001, *Description Logics*.

**RACER System Description.**

Haarslev, V. & Möller, R., 2001, *IJCAR*. S. 701-706 6 S.

**Working Notes of the 2001 International Description Logics Workshop (DL-2001), Stanford, CA, USA, August 1-3, 2001**

Goble, C. A. (Herausgeber\*in), McGuinness, D. L. (Herausgeber\*in), Möller, R. (Herausgeber\*in) & Patel-Schneider, P. F. (Herausgeber\*in), 2001, CEUR-WS.org. (CEUR Workshop Proceedings)(Description Logics)

**ALCRA - ALC with Role Axioms.**

Wessel, M., Haarslev, V. & Möller, R., 2000, *Description Logics*. S. 267-276 10 S.

**Consistency Testing: The RACE Experience.**

Haarslev, V. & Möller, R., 2000, *TABLEAUX*. S. 57-61 5 S.

**Expressive ABox Reasoning with Number Restrictions, Role Hierarchies, and Transitively Closed Roles.**

Haarslev, V. & Möller, R., 2000, *KR*. S. 273-284 12 S.

**Optimizing TBox and ABox Reasoning with Pseudo Models.**

Haarslev, V. & Möller, R., 2000, *Description Logics*. S. 153-162 10 S.

**A Description Logic with Concrete Domains and a Role-forming Predicate Operator.**

Haarslev, V., Lutz, C. & Möller, R., 1999, in: *J. Log. Comput.* 9, 3, S. 351-384 34 S., 3.

**An Empirical Evaluation of Optimization Strategies for ABox Reasoning in Expressive Description Logics.**

Haarslev, V. & Möller, R., 1999, *Description Logics*.

**Applying an ALC ABox Consistency Tester to Modal Logic SAT Problems.**

Haarslev, V. & Möller, R., 1999, *TABLEAUX*. S. 24-28 5 S.

**Computing Probabilistic Least Common Subsumers in Description Logics.**

Mantay, T., Möller, R. & Kaplunova, A., 1999, *KI*. S. 89-100 12 S.

**On Specifying Semantics of Visual Spatial Query Languages.**

Haarslev, V., Möller, R. & Wessel, M., 1999, *VL*. S. 4-11 8 S.

**On Terminological Default Reasoning about Spatial Information: Extended Abstract.**

Haarslev, V., Möller, R., Turhan, A.-Y. & Wessel, M., 1999, *Description Logics*.

**Proceedings of the 1999 International Workshop on Description Logics (DL'99), Linköping, Sweden, July 30 - August 1, 1999**

Lambrix, P. (Herausgeber\*in), Borgida, A. (Herausgeber\*in), Lenzerini, M. (Herausgeber\*in), Möller, R. (Herausgeber\*in) & Patel-Schneider, P. F. (Herausgeber\*in), 1999, CEUR-WS.org. (CEUR Workshop Proceedings)(Description Logics)

**RACE System Description.**

Haarslev, V. & Möller, R., 1999, *Description Logics*.

**Terminological Default Reasoning about Spatial Information: A First Step.**

Möller, R. & Wessel, M., 1999, *COSIT*. S. 189-204 16 S.

**Foundations of Spatioterminological Reasoning with Description Logics.**

Haarslev, V., Lutz, C. & Möller, R., 1998, *KR*. S. 112-123 12 S.

**HAM-ALC.**

Haarslev, V., Möller, R. & Turhan, A.-Y., 1998, *Description Logics*.

**Implementing an ALCRP(D) ABox Reasoner - Progress Report.**

Haarslev, V., Möller, R. & Turhan, A.-Y., 1998, *Description Logics*.

**Defined Topological Relations in Description Logics.**

Lutz, C. & Möller, R., 1997, *Description Logics*.

**Spatioterminological Reasoning: Subsumption Based on Geometrical Inferences.**

Haarslev, V. & Möller, R., 1997, *Description Logics*.

**A Functional Layer for Description Logics: Knowledge Representation Meets Object-Oriented Programming.**

Möller, R., 1996, *OOPSLA*. S. 198-213 16 S.

**Avoiding Combinatorial Explosion in Automatic Test Generation: Reasoning about Measurements is the Key.**

Lange, H., Möller, R. & Neumann, B., 1996, *KI*. S. 213-226 14 S.

**HAMVIS: Generierung von Visualisierungen in einem Rahmensystem zur systematischen Entwicklung von Benutzungsschnittstellen.**

Möller, R., 1996, Infix Verlag, St. Augustin, Germany. 341 S. (DISKI)

**HAMVIS: Generierung von Visualisierungen in einem Rahmensystem zur systematischen Entwicklung von Benutzungsschnittstellen.**

Möller, R., 1996, *Ausgezeichnete Informatikdissertationen*. S. 62-78 17 S.

**Knowledge-Based Dialog Structuring for Graphics Interaction.**

Möller, R., 1996, *ECAI*. S. 271-275 5 S.

**Object-Oriented Programming Support for CLASSIC.**

Möller, R., 1996, *Description Logics*. S. 170-174 5 S.

**Combining Spatial and Terminological Reasoning.**

Haarslev, V., Möller, R. & Schröder, C., 1994, *KI*. S. 142-153 12 S.

**Visualisierung und Benutzungsschnittstellen: Anwendungen und Forschungsfragen.**

Möller, R., 1993, *GI Jahrestagung*. S. 322-327 6 S.

**Visualization and graphical layout in object-oriented systems.**

Haarslev, V. & Möller, R., 1992, in: *J. Vis. Lang. Comput.* 3, 1, S. 1-23 23 S., 1.

**A Declarative Formalism for Specifying Graphical Layout.**

Haarslev, V. & Möller, R., 1990, *VL*. S. 54-59 6 S.

**A Framework for Visualizing Object-Oriented Systems.**

Haarslev, V. & Möller, R., 1990, *OOPSLA/ECOOP*. S. 237-244 8 S.

**Layoutspezifikationen für komplexe graphische Objekte.**

Möller, R. & Haarslev, V., 1990, *Graphik und KI*. S. 78-91 14 S.



### **Visualisierungen beim Entwicklungsprozeß experimenteller Programmsysteme.**

Haarslev, V. & Möller, R., 1989, *Software-Ergonomie*. S. 427-436 10 S.

### **Eine graphische Umgebung zur experimentellen Bildverarbeitung.**

Haarslev, V. & Möller, R., 1988, *DAGM-Symposium*. S. 319-325 7 S.

### **Visualisierung und Animation in der experimentellen Bildauswertung.**

Haarslev, V. & Möller, R., 1988, *Visualisierungstechniken und Algorithmen*. S. 213-223 11 S.

### **Visualization of experimental systems.**

Haarslev, V. & Möller, R., 1988, *VL*. S. 175-182 8 S.

## **Projekte**

### **EXC 2176: Understanding Written Artefacts**

Bausi, A. (Sprecher\*in, Koordinator\*in), Friedrich, M. (Sprecher\*in, Koordinator\*in), Harter-Uibopuu, K. (Sprecher\*in, Koordinator\*in), Bondarev, D. (Beteiligte\*r Wissenschaftler\*in), Brockmann, C. (Beteiligte\*r Wissenschaftler\*in), Depreux, P. (Beteiligte\*r Wissenschaftler\*in), Fehrenbach, F. (Beteiligte\*r Wissenschaftler\*in), Fischer, M. (Beteiligte\*r Wissenschaftler\*in), Friedrich, M. (Beteiligte\*r Wissenschaftler\*in), Grabowsky, V. (Beteiligte\*r Wissenschaftler\*in), Hahn, O. (Beteiligte\*r Wissenschaftler\*in), Heidemann, S. (Beteiligte\*r Wissenschaftler\*in), Huck, O. (Beteiligte\*r Wissenschaftler\*in), Isaacson, H. (Beteiligte\*r Wissenschaftler\*in), Jacobsen, T. (Beteiligte\*r Wissenschaftler\*in), Kern, M. (Beteiligte\*r Wissenschaftler\*in), Kießling, R. (Beteiligte\*r Wissenschaftler\*in), Klein, G. (Beteiligte\*r Wissenschaftler\*in), Michel, C. (Beteiligte\*r Wissenschaftler\*in), Mihailova, B. (Beteiligte\*r Wissenschaftler\*in), Möller, R. (Beteiligte\*r Wissenschaftler\*in), Quenzer, J. B. (Beteiligte\*r Wissenschaftler\*in), Schneider, G. A. (Beteiligte\*r Wissenschaftler\*in), Veltri, G. (Beteiligte\*r Wissenschaftler\*in) & Wilden, E. (Beteiligte\*r Wissenschaftler\*in)

01.01.19 → ...

### **Optimierungstechniken für beschreibungslogische Schlussfolgerungssysteme im Bereich der Geo-Daten (GeoDL)**

Möller, R. (Projektleiter\*in (PI)) & Grütter, R. (Beteiligte Person)

01.01.09 → 31.12.12

### **Probabilistische Präferenzmaße für wissensbasierte Szeneninterpretation**

Neumann, B. (Projektleiter\*in (PI)) & Möller, R. (Beteiligte Person)

01.01.07 → 31.12.12

### **Semantikbasierte formale Repräsentations- und Inferenztechniken für räumliche Problemstellungen**

Neumann, B. (Projektleiter\*in (PI)), Haarslev, V. (Beteiligte Person) & Möller, R. (Beteiligte Person)

01.01.00 → 31.12.05