

# Prof. Dr. Thomas Studer

## Personal Information

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|----------------------|---|
| <b>Work Address</b>  | Institut für Informatik<br>Universität Bern<br>Neubrückstrasse 10<br>3012 Bern<br>Switzerland |
| <b>Phone</b>         | +41 31 631 39 84  |
| <b>Email</b>         | thomas.studer@inf.unibe.ch  |
| <b>Web</b>           | home.inf.unibe.ch/~tstuder  |
| <b>Date of Birth</b> | April 4, 1972   |
| <b>Citizenship</b>   | Switzerland (Werthenstein LU)   |

## Education

|               |   |
|---------------|---|
| 03/10         | <b>Venia Docendi for “Theoretical Computer Science and Logic”</b><br><b>University of Bern, Switzerland</b>   |
| 11/97 - 04/01 | <b>PhD in Computer Science</b><br><b>University of Bern, Switzerland</b><br>Thesis: <i>Object-Oriented Programming in Explicit Mathematics: Towards the Mathematics of Objects</i><br>Supervisor: Prof. Gerhard Jäger<br>Grade: 6.0 (best possible)   |
| 10/92 - 10/97 | <b>Diploma in Computer Science</b><br><b>University of Bern, Switzerland</b><br>Thesis: <i>Explicit mathematics: W-type, models</i><br>Supervisor: Prof. Gerhard Jäger<br>Undergraduate minors: Mathematics, Philosophy<br>Grade: 6.0 (best possible) |

## Employment History

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|---------------|--|
| Since 04/14   | <b>Associate Professor (Assoziierter Professor)</b><br>Institute of Computer Science, University of Bern |
| 09/05 – 03/14 | <b>Lecturer (Dozent)</b><br>Institute of Computer Science, University of Bern                            |
| 10/03 – 08/05 | <b>Assistant</b><br>Research Group Logic and Theoretical Computer Science, University of Bern            |
| 06/01 – 07/03 | <b>Senior Software Engineer, Member of the Management Board</b><br>Crosspoint Informatik AG, Switzerland |
| 11/97 - 04/01 | <b>PhD Student</b><br>Research Group Logic and Theoretical Computer Science, University of Bern          |
| 10/95 – 06/99 | <b>Teaching Assistant</b><br>Institute of Computer Science, University of Bern                           |

## Professional Activities

### Research Grants

I have successfully applied (as PI or Co-PI) for seven research projects, which were granted by the Swiss National Science Foundation (SNSF) and by the Swiss State Secretariat for Education and Research (SER) as specified in the table below.

|   |      |   |           |             |
|---|------|---|-----------|-------------|
| Explicit Reasons                                | SNSF | PI  | 2019-2023 | CHF 600,000 |
| Justifications and Non-classical Reasoning      | SNSF | PI  | 2016-2019 | CHF 352,926 |
| Logics for Privacy                              | SNSF | PI  | 2014-2015 | CHF 63,048  |
| Structural Proof Theory and the Logic of Proofs | SNSF | Co-PI   | 2014-2017 | CHF 456,798 |
| Logics for Privacy                              | SNSF | PI  | 2011-2014 | CHF 163,224 |
| Computational Proof Theory                      | SER  | Co-PI, joint project with Moscow State University | 2010-2012 | CHF 174,335 |
| Dynamic Ontologies                              | SNSF | Co-PI, joint project with University of Neuchâtel | 2006-2008 | CHF 289,951 |

### PhD Students

- Michael Baur, ongoing
- Atefeh Rohani, ongoing
- Eveline Lehmann, ongoing
- Nenad Savic, ongoing
- Alexander Kashev, 2016
- Ioannis Kokkinis, 2016
- Johannes Werner, 2015
- Phiniki Stouppa, 2009

## **Swiss Academy of Sciences**

- Member of the Executive Committee of the Platform Mathematics, Astronomy and Physics (Präsidium MAP), since 2016
- Member of the Committee for the Promotion of Young Talents (Kommission Nachwuchsförderung), since 2020
- Member of the Swiss National Committee for the International Union of History and Philosophy of Science (NC IUHPS), since 2009

## **Swiss Society for Logic and Philosophy of Science**

- Board member, since 2009
- President, 2014-2018
- Secretary, 2009-2013

## **International Federation for Information Processing (IFIP)**

- Swiss delegate to the IFIP Technical Committee 1 (Foundations of Computer Science), since 2019

## **Services to the University of Bern**

- Member of the Strategy Board (former Planungsausschuss), Faculty of Science, since 2008
- Director of studies, Institute of Computer Science, 2012 and 2016
- QSE-coach (responsible for quality assurance and development), 2006-2013 (for Computer Science) and 2017 (for Mathematics, Statistics and Computer Science)
- Representative of Oberer Mittelbau Mathematik, Statistik, Informatik in the Faculty of Science, since 2016
- Member of the Hauskommission ExWi, since 2016
- Member of many temporary committees (e.g., Struktur-, Anstellungs- und Habilitationskommissionen), Faculty of Science
- Member of the organizing committee for Digitale Information: Zwischen Flüchtigkeit und Bewahrung, Collegium Generale, 2008

## **Prize Juries**

- Member of the jury for Prix Schläfli, 2018
- President of the jury for Bernays Prize, 2014, 2015, 2017, 2018, 2019

## **International Conference and Workshop Organization**

- DEONTIC 2019: Deontic Logic (chair)
- AiML 2018: Advances in Modal Logic (co-chair)
- LATD 2018: Logic, Algebra and Truth Degrees (co-chair)
- TAMC 2017: Theory and Applications of Models of Computation
- LAP 2016, 2017: Logic and Applications (co-chair)
- LP 2016: Logic and Probability (chair)
- APT 2013: Advances in Proof Theory (co-chair)
- ExPa 2012: Explicit Paradigms in Logic and Computer Science
- PCC 2010: Proof, Computation, Complexity (co-chair)
- LC 2008: Logic Colloquium

### **Steering Committees**

- Advances in Modal Logic, 2016-2018

### **Matura Examinations Kanton Bern**

- Member of the Matura Commission Canton Bern and head expert for computer science, since 2019
- Expert for computer science, since 2010
- Expert for mathematics, 2004-2019

### **PhD Juries**

- Rapporteur and member of the PhD Jury of Selena Baset, University of Neuchâtel, 2019
- Rapporteur and member of the PhD Jury of Fabrizio Alberetti, University of Neuchâtel, 2015
- Rapporteur and member of the PhD Jury of Sabine Frittella, Aix-Marseille University, 2014

### **CUSO Doctoral Program in Computer Science**

- Representative of the University of Bern, 2017-2018

### **Swiss Olympiad in Informatics**

- Local organizer of the Swiss Olympiad in Informatics Finals, 2015, 2016, 2017, 2019

### **Editorial Boards**

- Springer book series *Progress in Computer Science and Applied Logic*, since 2018

### **Refereeing**

- Journals: Acta Informatica, Annals of Pure and Applied Logic, Archive for Mathematical Logic, Bulletin of Symbolic Logic, Journal of Logic and Computation, Logic Journal of the IGPL, Logique et Analyse, Mathematical Logic Quarterly, Review of Symbolic Logic, Synthese, Studia Logica, Theoretical Computer Science, ...
- Conferences / workshops: AiML, CSL, IJCAR, JELIA, LFCS, M4M, MFCS, TAMC, ...
- Funding agencies: Vienna Science and Technology Fund (WWTF), Netherlands Organisation for Scientific Research (NWO), French National Research Agency (ANR)

## Teaching Experience

### Lectures (University of Bern)

|       |   |
|-------|---|
| FS 20 | Datenbanken   |
| FS 20 | Praktikum Software Engineering (with: Smart Energy Link AG, eonum AG, SwissDRG, Abilium GmbH, Zühlke AG, Puzzle ITC GmbH)           |
| FS 18 | Modal Logic   |
| FS 18 | Grundlagen der Technischen Informatik   |
| FS 18 | Einführung in die Informatik (joint lecture of all CS docents)  |
| FS 18 | Anwendungssoftware  |
| FS 19 | Datenbanken   |
| FS 19 | Praktikum Software Engineering (with: Smart Energy Link AG, eonum AG, SwissDRG, Abilium GmbH, Wiederkäuerklinik Vetsuisse Fakultät) |
| HS 18 | Justification Logic   |
| HS 18 | Grundlagen der Technischen Informatik   |
| HS 18 | Programmieren 1   |
| HS 18 | Einführung in die Informatik (joint lecture of all CS docents)  |
| HS 17 | Description Logic   |
| HS 17 | Grundlagen der Technischen Informatik   |
| HS 17 | Programmieren 1   |
| HS 17 | Einführung in die Informatik (joint lecture of all CS docents)  |
| FS 17 | Datenbanken   |
| FS 17 | Praktikum Software Engineering (with: eonum AG, SwissDRG, qualitaetsmedizin.ch, Pfadi Patria, Bergclub Bern)                        |
| HS 16 | Justification Logic   |
| HS 16 | Grundlagen der Technischen Informatik   |
| HS 16 | Einführung in die Informatik (joint lecture of all CS docents)  |
| HS 16 | Anwendungssoftware  |
| FS 16 | Datenbanken   |
| FS 16 | Praktikum Software Engineering (with: eonum AG, SwissDRG, iLUB, Hochschuldidaktik UniBe)  |
| FS 16 | Seminar: Theoretische Informatik und Logik  |
| HS 15 | Modal Logic   |
| HS 15 | Grundlagen der Technischen Informatik   |
| HS 15 | Einführung in die Informatik (joint lecture of all CS docents)  |
| HS 15 | Anwendungssoftware  |
| FS 15 | Datenbanken   |
| FS 15 | Praktikum Software Engineering (with: eonum AG, tink.ch, SwissDRG, Digital Humanities @ Universität Bern, Pfadi Patria)             |
| HS 14 | Justification Logic   |
| HS 14 | Grundlagen der Technischen Informatik   |
| HS 14 | Einführung in die Informatik (joint lecture of all CS docents)  |
| HS 14 | Anwendungssoftware  |
| FS 14 | Seminar: Algebra and Logic (together with George Metcalfe)  |

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| FS 14    | Datenbanken   |
| FS 14    | Praktikum Software Engineering (with: SolarSuperState Association, SwissDRG, Pfadi Patria, iLUB)                  |
| HS 13    | Dynamic Epistemic Logic   |
| HS 13    | Grundlagen der Technischen Informatik   |
| HS 13    | Einführung in die Informatik (joint lecture of all CS docents)  |
| HS 13    | Anwendungssoftware  |
| FS 13    | Datenbanken   |
| FS 13    | Praktikum Software Engineering (with: Schule Länggasse, SUB, SGfM, SwissDRG)                                      |
| HS 12    | Justification Logic   |
| HS 12    | Grundlagen der Technischen Informatik   |
| HS 12    | Einführung in die Informatik (joint lecture of all CS docents)  |
| HS 12    | Anwendungssoftware  |
| FS 12    | Rechnerarchitektur  |
| FS 12    | Praktikum Software Engineering (with: SwissDRG, eonum AG, getItLate)  |
| FS 11    | Rechnerarchitektur  |
| FS 11    | Praktikum Software Engineering (with: NILE Clothing, Freudiger EDV Beratung, Institut für Erziehungswissenschaft) |
| HS 10    | Grundlagen der Technischen Informatik   |
| HS 10    | Einführung in die Informatik (joint lecture of all CS docents)  |
| HS 10    | Anwendungssoftware  |
| FS 10    | Rechnerarchitektur  |
| FS 10    | Praktikum Software Engineering (with: Lumrix GmbH, Uptown Bigband)  |
| HS 09    | Grundlagen der Technischen Informatik   |
| HS 09    | Einführung in die Informatik (joint lecture of all CS docents)  |
| HS 09    | Anwendungssoftware  |
| FS 09    | Rechnerarchitektur  |
| FS 09    | Praktikum Software Engineering (with: SBB, Lumrix GmbH, Internationales Büro Universität Bern)                    |
| FS 09    | Seminar: Theoretische Informatik und Logik  |
| HS 08    | Grundlagen der Technischen Informatik   |
| HS 08    | Anwendungssoftware  |
| FS 08    | Rechnerarchitektur  |
| FS 08    | Praktikum Software Engineering (with: Swisscom, Bujutsu School Bern)  |
| HS 07    | Grundlagen der Technischen Informatik   |
| HS 07    | Anwendungssoftware  |
| SS 07    | Rechnerarchitektur  |
| SS 07    | Praktikum Software Engineering (with: Swisscom, Web-Id GmbH, Informatikdienste Universität Bern)                  |
| WS 06/07 | Grundlagen der Technischen Informatik   |
| WS 06/07 | Anwendungssoftware  |

SS 06 Rechnerarchitektur  
SS 06 Praktikum Software Engineering (with: Cassarius AG)  
SS 06 Seminar: Theoretische Informatik und Logik

WS 05/06 Grundlagen der Technischen Informatik  
WS 05/06 Anwendungssoftware

SS 04 Anwendungssoftware

WS 03/04 Anwendungssoftware

**Lectures** (University of Applied Sciences Solothurn Northwestern Switzerland)

SS 98 Substitute lecturer in mathematics

## **Publications** (authors are listed in alphabetical order)

### **Books**

- Relationale Datenbanken: von den theoretischen Grundlagen zu Anwendungen mit PostgreSQL, 2. erweiterte Auflage, Springer, 2019
- Logics of Proofs and Justifications, joint work with Roman Kuznets, College Publications, 2019
- Relationale Datenbanken: von den theoretischen Grundlagen zu Anwendungen mit PostgreSQL, Springer, 2016

### **Books (edited)**

- Advances in Modal Logic, Volume 12, jointly edited with Guram Bezhanishvili, Giovanna D'Agostino, and George Metcalfe, College Publications, 2018
- Advances in Proof Theory, jointly edited with Reinhard Kahle and Thomas Strahm, vol 28 of Progress in Computer Science and Applied Logic, Birkhäuser, 2016

### **In journals**

- Probabilistic Justification Logic, joint paper with Ioannis Kokkinis and Zoran Ognjanović, Journal of Logic and Computation, to appear
- A Temporal Epistemic Logic with a Non-rigid Set of Agents for Analyzing the Blockchain Protocol, joint paper with Bojan Marinković, Paola Glavan, and Zoran Ognjanović, Journal of Logic and Computation, 2019.
- A Logic of Knowing Why, joint paper with Chao Xu and Yanjing Wang, Synthese, in print
- Relevant Justification Logic, joint paper with Nenad Savić, Journal of Applied Logic, in print
- Intuitionistic Modal Logic Made Explicit, joint paper with Michel Marti, IfCoLog Journal of Logics and their Applications, 3(5):877-901, 2016
- Weak Arithmetical Interpretations for the Logic of Proofs, joint paper with Roman Kuznets, Logic Journal of the IGPL, 2016
- First Steps towards Probabilistic Justification Logic, joint paper with Ioannis Kokkinis, Petar Maksimović, and Zoran Ognjanović, Logic Journal of the IGPL, 23(4):662-687, 2015
- Censors for Boolean Description Logic, joint paper with Johannes Werner, Transactions on Data Privacy, 7(3):223-252, 2014
- Justifying induction on modal  $\mu$ -formulae, joint paper with Luca Alberucci and Jürg Krähenbühl, Logic Journal of the IGPL, 22(6):805-817, 2014
- Realizing Public Announcements by Justifications, joint paper with Samuel Bucheli and Roman Kuznets, Journal of Computer and System Sciences, 80(6):1046-1066, 2014
- Decidability for some justification logics with negative introspection, Journal of Symbolic Logic, 78(2):388-402, 2013
- A Universal Approach to Guarantee Data Privacy Logica Universalis, 7(2):195-209, 2013
- Syntactic cut-elimination for a fragment of the modal  $\mu$ -calculus, joint paper with Kai Brännler, Annals of Pure and Applied Logic, 163(12):1838-1853, 2012.
- Justification Logic, Inference Tracking, and Data Privacy, Logic and Logical Philosophy, 20(4):297-306, 2011
- Justifications for Common Knowledge, joint paper with Samuel Bucheli and Roman Kuznets, Journal of Applied Non-classical Logics, 21(1):35-60, 2011
- A Buchholz Rule for Modal Fixed Point Logics, joint paper with Gerhard Jäger, Logica Universalis, 5(1):1-19, 2011
- Syntactic cut-elimination for common knowledge, joint paper with Kai Brännler, Annals of Pure and Applied Logic, 160(1):82-95, 2009
- Common Knowledge does not have the Beth property, Information Processing Letters, 109:611-614, 2009
- On the proof theory of the modal  $\mu$ -calculus, Studia Logica, 89:343-363, 2008
- Canonical completeness of infinitary  $\mu$ , joint paper with Gerhard Jäger and Mathis Kretz, Journal of Logic and Algebraic Programming, 76(2):270-292, 2008



- On Contraction and the Modal Fragment, joint paper with Kai Brännler and Dieter Probst, *Mathematical Logic Quarterly*, 54(4):345-349, 2008
- Cut-free Common Knowledge, joint paper with Gerhard Jäger and Mathis Kretz, *Journal of Applied Logic*, 5:681-689, 2007
- Deduction Chains for Common Knowledge, joint paper with Mathis Kretz, *Journal of Applied Logic*, 4:331-357, 2006
- Explicit Mathematics: Power Types and Overloading, *Annals of Pure and Applied Logic*, 134 (2-3):284-302, 2005
- Extending the system  $T_0$  of explicit mathematics: the limit and Mahlo axioms, joint paper with Gerhard Jäger, *Annals of Pure and Applied Logic*, 114 (1-3):79-101, 2002
- Formalizing non-termination of recursive programs, joint paper with Reinhard Kahle, *Journal of Logic and Algebraic Programming*, 49 (1-2):1-14, 2001
- A semantics for  $\lambda\{\}$ : a calculus with overloading and late-binding, *Journal of Logic and Computation*, 11 (4):527-544, 2001
- How to normalize the jay, joint paper with Dieter Probst, *Theoretical Computer Science*, 254 (1-2):677-681, 2001
- Universes in explicit mathematics, joint paper with Gerhard Jäger and Reinhard Kahle, *Annals of Pure and Applied Logic*, 109 (3):141-162, 2001

### In conference proceedings and collections

- Belief Expansion in Subset Models, joint paper with Eveline Lehmann, in S. Artemov, A. Nerode, editors, *Proceedings of Logical Foundations of Computer Science LFCS'20*, volume 11972 of LNCS, pages 85-97. Springer, 2020
- Justification Logics with Probability Operators, joint paper with Ioannis Kokkinis and Nenad Savić, in Z. Ognjanović, editor, *Probabilistic Extensions of Various Logical Systems*. Springer, 2020.
- Probabilistic Consensus of the Blockchain Protocol, joint paper with Bojan Marinković, Paola Glavan, Zoran Ognjanović, and Dragan Doder, in G. Kern-Isberner, Z. Ognjanović, editors, *Symbolic and Quantitative Approaches to Reasoning with Uncertainty - ECSQARU 2019*, volume 11726 of LNAI, pages 469-480. Springer, 2019.
- Bayesian Confirmation and Justifications, joint paper with Hamzeh Mohammadi in G. Kern-Isberner, Z. Ognjanović, editors, *Symbolic and Quantitative Approaches to Reasoning with Uncertainty - ECSQARU 2019*, volume 11726 of LNAI, pages 408-418. Springer, 2019.
- Subset models for justification logic, joint paper with Eveline Lehmann in R. Iemhoff, M. Moortgat, R. de Queiroz, editors, *Logic, Language, Information, and Computation - WoLLIC 2019*, volume 11541 of LNCS, pages 433-449. Springer 2019.
- Public Announcements for Epistemic Models and Hypertheories, joint paper with Nenad Savić, in Md. A. Khan, A. Manuel, editors, *Logic and its Applications ICLA 2019*, volume 11600 of LNCS, pages 64-75. Springer, 2019
- The Logic of Temporal Domination, in *RIVF 2019 Conference Proceedings*, pages 187-190. IEEE, 2019
- The Internalized Disjunction Property for Intuitionistic Justification Logic, joint paper with Michel Marti, in G. Bezhanishvili, G. D'Agostino, G. Metcalfe, and T. Studer, editors, *Advances in Modal Logic*, Volume 12, pages 511-529. College Publications, 2018
- A Logic of Blockchain Updates, joint paper with Kai Brännler and Dandolo Flumini, in S. Artemov, A. Nerode, editors, *Proceedings of Logical Foundations of Computer Science LFCS'18*, volume 10703 of LNCS, pages 107-119. Springer, 2018
- The Proof Theory of Common Knowledge, joint paper with Michel Marti, in H. van Ditmarsch and G. Sandu, editors, *Jaakko Hintikka on Knowledge and Game-Theoretical Semantics, Outstanding Contributions to Logic*, volume 12, pages 433-455. Springer, 2018
- Justification logic with approximate conditional probabilities, joint paper with Zoran Ognjanović and Nenad Savić, in A. Baltag, J. Seligman, T. Yamada, editors, *Logic, Rationality and Interaction*, volume 10455 of LNCS, pages 681-686. Springer, 2017

- Temporal Justification Logic, joint paper with Samuel Bucheli and Meghdad Ghari, in S. Ghosh and R. Ramanujam, editors, Proceedings of Methods for Modalities M4M-9, volume 243 of EPTCS, pages 59-74, 2017
- Probabilistic Justification Logic, joint paper with Ioannis Kokkinis and Zoran Ognjanović, in S. Artemov, A. Nerode, editors, Proceedings of Logical Foundations of Computer Science LFCS'16, volume 9537 of LNCS, pages 174-186. Springer, 2016
- Cyclic Proofs for Linear Temporal Logic, joint paper with Ioannis Kokkinis, in D. Probst, P. Schuster, editors, Concepts of Proof in Mathematics, Philosophy, and Computer Science, volume 6 of Ontos Mathematical Logic, pages 171-192. De Gruyter, 2016
- Decidability for Justification Logics Revisited, joint paper with Samuel Bucheli and Roman Kuznets, in G. Bezhanishvili, S. Löbner, V. Marra, F. Richter, editors, Logic, Language and Computation TbiLLC 2011, volume 7758 of LNCS, pages 166-181. Springer, 2013
- Update As Evidence: Belief Expansion, joint paper with Roman Kuznets, in S. Artemov, A. Nerode, editors, Proceedings of Logical Foundations of Computer Science LFCS'13, volume 7734 of LNCS, pages 266-279. Springer, 2013
- Justifications, Ontology, and Conservativity, joint paper with Roman Kuznets, in T. Bolander, T. Braüner, S. Ghilardi, L. Moss, editors, Advances in Modal Logic, volume 9, pages 437-458. College Publications, 2012
- Justified Terminological Reasoning, in E. Clarke, I. Virbitskaite, A. Voronkov, editors, Proceedings of Perspectives of System Informatics PSI'11, volume 7162 of LNCS, pages 349-361. Springer, 2012
- Cut-elimination for the mu-calculus with one variable, joint paper with Grigori Mints, in Fixed Points in Computer Science 2012, volume 77 of EPTCS, pages 47–54. Open Publishing Association, 2012
- An application of justification logic to protocol verification, in Proceedings of Computational Intelligence and Security CIS 2011, pages 779-783. IEEE, 2011
- Partial Realization in Dynamic Justification Logic, joint paper with Samuel Bucheli and Roman Kuznets, in L. Beklemishev and R. de Queiroz, editors, Logic, Language, Information and Computation WOLLIC 2011, volume 6642 of LNCS, pages 35-51. Springer 2011
- Justified Belief Change, joint paper with Samuel Bucheli, Roman Kuznets, Bryan Renne, and Joshua Sack, in X. Arrazola, M. Ponte, editors, Proceedings of Logic and Philosophy of Knowledge, Communication and Action, pages 135-155. Basque Country Press 2010
- Two ways to common knowledge, joint paper with Samuel Bucheli and Roman Kuznets, in T. Bolander, T. Braüner, editors, Proceedings of Methods for Modalities M4M6, volume 262 of ENTCS, pages 83-98. Elsevier 2010
- Privacy Preserving Modules for Ontologies, in A. Pnueli, I. Virbitskaite, A. Voronkov, editors, Proceedings of Perspectives of System Informatics PSI'09, volume 5947 of LNCS, pages 380-387. Springer 2010
- Data privacy for ALC knowledge bases, joint paper with Phiniki Stouppa, in S. Artemov, A. Nerode, editors, Proceedings of Logical Foundations of Computer Science LFCS'09, volume 5407 of LNCS, pages 409-421. Springer 2009
- Syntactic cut-elimination for common knowledge (superseded by the journal version), joint paper with Kai Brunnler, in C. Areces and S. Demri, editors, Proceedings of Methods for Modalities M4M5, volume 231 of ENTCS, pages 227-240. Elsevier 2009
- Improving semantic query answering, joint paper with Norbert Kottmann, in R. Wagner, N. Revell, G. Pernul, editors, Proceedings of 18th International Conference on Database and Expert Systems Applications DEXA '07, volume 4653 of LNCS, pages 671-679. Springer 2007
- Total Public Announcements, joint paper with David Steiner, in S. Artemov, A. Nerode, editors, Proceedings of Logical Foundations of Computer Science LFCS'07, volume 4514 of LNCS, pages 498-511. Springer, 2007
- A Formal Model of Data Privacy, joint paper with Phiniki Stouppa, in I. Virbitskaite, A. Voronkov, editors, Proceedings of Perspectives of System Informatics PSI'06, volume 4378 of LNCS, pages 401-411. Springer, 2007

- A finitary cut-free axiomatization for stratified modal fixed point logics, joint paper with Gerhard Jäger and Mathis Kretz, in H. Schlingloff, editor, Proceedings of Methods for Modalities 4, pages 125-143. 2005
- Provable Data Privacy, joint paper with Kilian Stoffel, in K. Viborg Andersen, J. Debenham, R. Wagner, editors, Proceedings of 16th International Conference on Database and Expert Systems Applications DEXA '05, volume 3588 of LNCS, pages 324-332. 2005
- Probabilistic ABox Reasoning: Preliminary Results, joint paper with Michael Dürig, in I. Horrocks, U. Sattler, F. Wolter, editors, Proceedings of Description Logics DL'05, pages 104-111. 2005
- Constructive Foundations for Featherweight Java, in R.Kahle, P.Schroeder-Heister, R. Stärk, editors, Proof Theory in Computer Science, volume 2183 of LNCS, pages 202-238. Springer, 2001
- A theory of explicit mathematics equivalent to  $ID_1$ , joint paper with Reinhard Kahle, in P. Clote, H. Schwichtenberg, editors, Computer Science Logic CSL 2000, volume 1862 of LNCS, pages 356-370. Springer, 2000

### **Theses**

- Proof-Theoretic Contributions to Modal Fixed Point Logics, Habilitation thesis, University of Bern, 2010
- Object-Oriented Programming in Explicit Mathematics: Towards the Mathematics of Objects, Dissertation thesis, University of Bern, 2001
- Explicit mathematics: W-type, models, Master's thesis, University of Bern, 1997

### **In the Media**

- On July 3, 2001 the „Neue Mittelland Zeitung” published a full-page portrait of my PhD research in the series “Junge Forschende”.

## Selected Talks (\* invited)

- Semirings of Evidence\*, St.Petersburg Days of Logic and Computability, St. Petersburg, May, 2020
- The proof theory of common knowledge and other modal fixed point logics\*, Logical Foundations of Computer Science, Deerfield Beach, Florida, January 2020
- Belief Expansion in Subset Models, Logical Foundations of Computer Science, Deerfield Beach, Florida, January 2020
- Subset semantics for justification logics\*, Workshop on Proof Theory, Modal Logic and Reflection Principles, Barcelona, November 2019
- A problem with probabilistic CTL, Logic and Applications, Dubrovnik, September 2019
- Bayesian confirmation and justification, European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty, Belgrade, September 2019
- Subset models for justification logic\*, Association for Symbolic Logic 2019 Annual North American Meeting, New York, May, 2019
- The proof theory of modal fixed point logics\*, SGSLPS Meeting on Real Valued Modal Logic, Bern, November 2018
- The proof theory of modal fixed point logics\*, Chinese Mathematical Logic Conference, Duyun, China, May 2018
- Common knowledge from a proof theoretic perspective\*, Logic Seminar, Tsinghua University, Beijing, May 2018
- I know that you know that I know – Epistemic Logic in Computer Science\*, Mini Symposium of Computer Graphics, Data Science, Logic and Security, Bern, February 2018
- A Logic of Blockchain Updates, Logical Foundations of Computer Science, Deerfield Beach, Florida, January 2018
- Justification Logic with Approximate Conditional Probabilities, LORI 2017, Sapporo, September 2017
- Blockchain Logic\*, Mathematical Institute of Serbian Academy of Sciences and Arts Workshop, Belgrade, June 2017
- Blockchain Logic\*, CELLO Workshop, Nancy, May 2017
- The Proof-Theory of Common Knowledge\*, Constructivism, Logic and Topology, Bern, January 2017
- Temporal Justification Logic, Proofs, Methods for Modalities, Kanpur, January 2017
- Justification Logic\*, Proofs, Justification and Certificates, Toulouse, June 2016
- The Proof Theory of Common Knowledge\*, Various Aspects of Modality, Isfahan, May 2016
- Justification Logic\*, Various Aspects of Modality, Isfahan, May 2016
- Justification Logic\*, Interdisciplinary Lab for Intelligent and Adaptive Systems, Luxembourg, March 2016
- Probabilistic Justification Logic, Logical Foundations of Computer Science, Deerfield Beach, Florida, January 2016
- Introduction to Justification Logic\*, Non-Classical Logics and Paradox II, Bern, October, 2015
- Probabilistic Justification Logic, Universal Logic, Istanbul, June 2015
- Justification Logic\*, Seminar for Probability Logic, Mathematical Institute of Serbian Academy of Sciences and Arts, Belgrade, June 2015
- Modal Logic—an Introduction\*, Center for Mathematics and Statistics: General Seminar, University of Novi Sad, June 2015
- Proofs and Fixed Points\*, Journée Logique, Marseille, December 2014.
- Justification Logic—a Short Introduction, Logic and Applications, Dubrovnik, September 2014
- Weak Arithmetical Semantics for the Logic of Proofs, Logic Colloquium, Vienna, July 2014
- On Cuts and Cut-Elimination in Modal Fixed Point Logics, Gentzen Systems and Beyond, Vienna, July, 2014
- Towards Syntactic Cut-Elimination for Temporal Logics, Theory and Application of Formal Proofs, Paris, November 2013

- Cut-Elimination for Modal Fixed Point Logics, Logic and Applications, Dubrovnik, September 2013
- Update as Evidence, Universal Logic, Rio de Janeiro, April 2013
- Update as Evidence: Belief Expansion, Logic and Information, Schloss Münchenwiler, February 2013
- Justification Logic—a Short Introduction\*, Winter School on Proof and Computation, Les Diablerets, January 2013
- Update as Evidence: Belief Expansion, Logical Foundations of Computer Science, San Diego, January 2013
- Justifications, Ontology, and Conservativity, Advances in Modal Logic, Copenhagen, August 2012
- Cut-Elimination for the mu-Calculus with one Variable, Algebra and Coalgebra meet Proof Theory, Prague, April 2012
- Cut-Elimination for the mu-Calculus with one Variable, Fixed Points in Computer Science, Tallinn, March 2012
- An Application of Justification Logic to Protocol Verification, Computational Intelligence and Security, Sanya, December 2011
- Decidability for Justification Logics, Logic and Information, Schloss Münchenwiler, October 2011
- Decidability for Justification Logics Revisited, Symposium on Language, Logic and Computation, Kutaisi, September 2011
- Dynamic Justification Logic, Logic, Methodology and Philosophy of Science, Nancy, July 2011
- Justified Terminological Reasoning, Perspectives of System Informatics, Novosibirsk, June 2011
- Description Logics und Web-Ontologien\*, Gesellschaft für Mathematik an Schweizer Fachhochschulen, Generalversammlung, Regensdorf, June 2011
- Deductive Systems for Common Knowledge\*, Algebra and Coalgebra meet Proof Theory, Bern, April 2011
- Justified Belief Change, Logic and Philosophy of Knowledge, Communication and Action, San Sebastian, November 2010
- Knowledge Base Distortion to Guarantee Data Privacy, Non-Classical Logic: Theory and Applications, Torun, September 2010
- Syntactic Cut-elimination for Modal Fixed Point Logics, Universal Logic, Monte Estoril, April 2010
- Two Ways to Common Knowledge, Methods for Modalities 6, Copenhagen, November 2009
- On the Proof Theory of Common Knowledge, British Logic Colloquium, Swansea, September 2009
- The Buchholz rule for modal fixed point logics, Leeds Symposium on Proof Theory and Constructivism, Leeds, July 2009
- Privacy Preserving Modules for Ontologies, Perspectives of System Informatics, Novosibirsk, June 2009
- Data Privacy for ALC Knowledge Bases, Logical Foundations of Computer Science, Deerfield Beach, Florida, January 2009
- Common Knowledge does not have the Beth Property, Logic and Information, Schloss Münchenwiler, November 2008
- Canonical Completeness for Infinitary mu-Calculus\*, ABCD on mu-Calculus, Lausanne, May 2008
- On Contraction and the Modal Fragment\*, Contraction Free Logic, Hamburg, April 2008
- Syntactic Cut-Elimination for Common Knowledge\*, Modal Fixed Point Logics, Amsterdam, March 2008
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- Completeness Proofs for the Modal  $\mu$ -Calculus, Mathematics in a Modern World, Novosibirsk, September 2007
- Improving Semantic Query Answering, Database and Expert Systems Applications, Regensburg, September 2007
- Total Public Announcements, Logical Foundations of Computer Science, New York, June 2007
- Deductive Systems for the Modal  $\mu$ -Calculus, Temporal Logic and Temporal Reasoning, Schloss Münchenwiler, May 2007
- Infinitary systems for the modal  $\mu$ -calculus, Workshop on Proof, Computation, Complexity, Swansea, April 2007
- On the Proof Theory of the Modal  $\mu$ -Calculus, Deduktive Aspekte der Beweistheorie und Informatik, München, December, 2006
- Datenbanken – einfach erklärt\*, Fachschaftstagung Informatik, Mathematik und Physik, Thun, November, 2006.
- Cut-free Systems for the Propositional Modal  $\mu$ -Calculus\*, Logic Colloquium, Nijmegen, July, 2006.
- A Formal Model of Data Privacy, Perspectives of System Informatics, Novosibirsk, June 2006.
- A Logical Approach to Data Privacy, Deduktive Aspekte der Beweistheorie und Informatik, Bern, June 2006.
- Probabilistic Description Logic, Workshop on Non-classical Logic: its Mathematics and Philosophy, Bern, October 2005.
- Provable Data Privacy, Database and Expert Systems Applications, Copenhagen, August 2005.
- Probabilistic ABox Reasoning: Preliminary Results, Workshop on Description Logics, Edinburgh, July 2005
- A finitary cut-free axiomatization for stratified modal fixed point logic, Workshop on Proof, Computation, Complexity, Lisboa, July 2005
- Relational Representation of ALN Knowledge Bases, Virtual Multi Conference on Computer Science and Information Systems, April 2005
- Ontology based OLAP, Inference and Deduction, Schloss Münchenwiler, November 2004
- Database Security via Term Models, Swiss Meeting of Young Researchers in Logic, Bern, October 2004
- Canonical Databases under Key Constraints, Inference and Deduction, Schloss Münchenwiler, May 2004
- Das Acquiring System – ein Projektbericht\*, Informatik Kolloquium, Universität Bern, June 2002
- Eine denotationelle Semantik für Featherweight Java\*, Informatik Kolloquium, Universität Tübingen, October 2000
- Impredicative Overloading in Explicit Mathematics, Logic Colloquium, Paris, July 2000
- Impredikativität und Overloading, Deduktive Aspekte der Beweistheorie und Informatik, Bern, April 2000
- Modelle expliziter Mathematik, Deduktive Aspekte der Beweistheorie und Informatik, Bern, April 1997