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Education

- 2017** *Italian Associate Professorship Habilitation in Computer Science*. Scientific sector: 01/B1 (*Informatica*).
- 2010** Recognition of German Habilitation-equivalent status (general teaching and examination authority) by the University of Bremen. (“habilitationsäquivalente Leistungen als ‘Wissenschaftler in herausgehobener Position’ ”)
- 2005** *Ph.D.*, thesis: ‘ *\mathcal{E} -Connections and Logics of Distance*’, University of Liverpool; Supervisor: Frank Wolter; Examiners: Wiebe van der Hoek & Melvin C. Fitting.
- 2000** *M.Sc.*, thesis: ‘*Kripke-Type Semantics for Modal Predicate Logics*’ (‘Diplom in Mathematik’), Humboldt University at Berlin & Free University Berlin; Supervisors: Marcus Kracht & Ronald B. Jensen (with Distinction).
- 1996–2000** Mathematics & Philosophy at Humboldt University at Berlin & Free University Berlin.
- 1996** ‘*Certificate in Mathematics*’, University of Sussex at Brighton. Mathematics, Philosophy, and Cognitive and Computer Science (with Distinction).
- 1993–1995** Mathematics & Philosophy at Ruhr-University of Bochum.

Areas of Specialisation

Logic in Artificial Intelligence, in particular description logics, modal and other non-classical logics; counterpart theory; logic combination techniques; reasoning methods.

Applied Ontology / Information Systems, in particular modularity and heterogeneity; algebraic specification techniques and institution theoretic semantics for ontologies and their applications.

Knowledge Representation / Computational Creativity, logic and ontologies in Spatial Reasoning, Design & Computational Creativity, Life Sciences, Natural Language Processing.

Symbolic Cognitive Modelling, in particular, image schemas, affordances, and related notions for cognitive modelling and concept invention. Applications in cognitive robotics.

Professional Highlights

Publications. *Google Scholar*: Citations 3029; h-index 25; i10-index 57; highest ranked CS Assistant Professor, 9th amongst all (including tenured) CS professors, and 18th overall at **unibz**. More than 80 publications in books and peer reviewed international journals, conferences and workshops. Highlights include: Artificial Intelligence, Handbook of the Philosophy of Logic, Logica Universalis, J. on Data Semantics, Studia Logica, ACM Transactions on Computational Logic, Applied Ontology, J. of Applied Non-Classical Logic, J. of Biomedical Semantics, KR, ECAI, FOIS, IJCAI, AAAI, K-CAP.

Teaching. Universities of Berlin, Leipzig, Liverpool, Manchester, Bremen, Magdeburg, and Bolzano; at the European Summer School for Logic, Language and Information (ESSLLI); at the Indian Logic School; at the School of Universal Logic; in the European Master Program on Computational Logic (EMCL), at the Institute of Advanced Study Melbourne.

Supervision. President, PhD qualifying examination committee, ICT Doctoral School, University of Trento (2011); PhD student supervision at the Universities of Bremen, Magdeburg, and Bolzano; examination experience at all levels.

Scientific Impact & Funding. Co-designer of the logic underlying the web ontology language OWL 2 DL, the logic combination technique of E-connections, the heterogeneous ontology language DOL. PI or co-PI of **unibz** projects STELLA, LOGIS, CREED, CIAO, and COCO. Principal Investigator in Spaceportal/Ontohub (Bremen), EU FP7 Project COINVENT ‘Concept Invention Theory’ [2.7 Million Euro total] and the DAAD-MIUR project SCORE.

Standardisation. Co-project leader of the OMG standardisation initiative “OntoIOP” concerning heterogeneous ontology integration and interoperability (DOL language), formally adopted in 2016, finalised in 2018. A global effort with currently over 40 experts involved worldwide.

Organisation. Co-Chair of the Summer of Knowledge 2020 (**unibz**) and General Chair of EKAW 2020 and of FOIS 2018; PC chair of FOIS-2014; General Chair of JOWO 16 and ISAO 16; General and Local Chair of JOWO 2017; Organiser and PC chair of over 20 international workshops; member of the steering committees of the Workshops on Modular Ontologies (WoMO) and the Workshops on Concept Invention (C3GI). Founding member of the International Association for Ontology and its Applications (IAOA), elected member of the IAOA Executive Council and currently Vice-President of the IAOA.

Editor. Member of the Editorial Board of Applied Ontology and Associate Editor of CEUR; Special Issue of Applied Ontology on ‘Modular Ontologies’; more than ten conference proceedings published with IOS press (FOIS and WoMO) and CEUR (SHAPES, WoMO, FOAI, CAOS, JOWO); co-editor of a volume on ‘Concept Invention Theory’ (Springer).

Program Committees. More than 60 major international conferences and workshops, e.g. KR, IJCAI, ECAI, AAAI, FOIS, ISWC, ESWC, DL, OWLED, AIMSA.

Collaboration. Strong collaborations working with internationally renowned groups at Bremen, Magdeburg, Liverpool, Edinburgh, Manchester, Oxford, Cambridge, London, Trento, Milan, Barcelona, Toronto, Brasília, Geneva, amongst others.

Professional Experience

Since March 2015 Assistant Professor, KRDB Research Centre for Knowledge and Data, Free-University of Bozen-Bolzano, Italy.

Responsibilities: Research and teaching activity focused on the intersection of computational logic, cognitive modelling, and computational creativity. Managing several research projects including a FET Open Horizon 2020 project that moved from Magdeburg.

February 2014–March 2015 Principal Investigator, Theoretical Computer Science group (Formal Methods and Semantics), Otto-von-Guericke University of Magdeburg, Germany.

Responsibilities: Research and teaching activity focused on applied ontology and concept invention. Main focus on directing the FET Open Horizon 2020 project ‘COINVENT’.

February 2007–January 2014 Postdoctoral Research Fellow, SFB/TR 8 Spatial Cognition, project ‘OntoSpace’, University of Bremen, Germany.

Responsibilities: Research and teaching activity focused on spatial logic and cognition, algebraic specification techniques, and the design of the now OMG-standardised (since 2018) Distributed Ontology Language DOL.

October 2004–December 2006 Postdoctoral Research Associate, EPSRC project ‘*Extending Expressive Description Logics*’, University of Manchester, School of Computer Science, Information Management Group, UK.

Responsibilities: Research and teaching activity focused on extending expressive description logics underlying the OWL DL standard. Designed and published the logic SROIQ underlying the OWL 2 DL standard (with I. Horrocks and U. Sattler).

January 2003–September 2004 Research Assistant, Logic and Computation Group, Department of Computer Science, University of Liverpool, UK.

Responsibilities: Research and teaching activity focused on designing multi-modal logic combination techniques, in particular involving spatial logics. Invented the influential E-connections technique as part of my PhD work.

August 2000–December 2002 Research Assistant, DFG-project ‘*Combination of Modal and Description Logics for the Representation of Intensional and Dynamical Knowledge*’, Intelligent Systems Department, Leipzig.

Responsibilities: Research and teaching activity focused on designing multi-modal logic combination techniques; initiating PhD work; teaching logic courses.

1998 University teaching position for a seminar on the *Philosophy of Mathematics*, Humboldt University at Berlin.

Responsibilities: Directing interdisciplinary teaching efforts following a teaching scholarship from Humboldt University.

1997–1999 Teaching Assistant, Humboldt University at Berlin.

Responsibilities: Teaching assistant in the mathematics department.

1995 Teaching Assistant (‘Wissenschaftliche Hilfskraft’), University of Bochum.

Responsibilities: Teaching assistant in the philosophy department.

Awards

I have received awards for teaching efforts (Berlin), my PhD thesis (UK Finalist 2005, British Computer Society BCS), experimental modelling work (DKR 2011), and Best Papers at FOIS 2012 and at K-CAP 2017. Both Best Papers were also invited to the IJCAI best paper track.

- 2018** *IJCAI* Best paper sister conferences track (with C. Maria Keet).
- 2017** *K-CAP Best Paper Award*. Best paper at the 9th International Conference on Knowledge Capture, December 4th–6th, 2017, Austin, Texas (with C. Maria Keet).
- 2013** *IJCAI* Best paper sister conferences track (with Till Mossakowski and Christoph Lange).
- 2012** *FOIS Best Paper Award* Best paper at the 7th International Conference on Formal Ontology in Information Systems (FOIS 2012), Graz, Austria, 2012. (with Till Mossakowski and Christoph Lange).
- 2011** *2nd prize, Deep Knowledge Representation Challenge*, DKR-11, Banff, Alberta, Canada (with Janna Hastings and Till Mossakowski).
- 2005** *BCS/CPHC Distinguished Dissertations Award 2004/05* (Finalist).
(<http://www.bcs.org/server.php?show=conWebDoc.2842>)
- 1998** *Awarded special scholarship* from the Humboldt University at Berlin for the conception of a 2 semester interdisciplinary course on the Philosophy of Mathematics.

Teaching | Supervision

I have been teaching over the past 15 years in the Bachelor, Master, and PhD programs in several universities in the UK, in Germany, and in Italy. This spanned the departments of Mathematics, Computer Science, Cognitive Science, and Philosophy. I have also been teaching in several summer schools and advanced study programs over the years, across Europe, as well as in Australia, India, Lebanon, and South Africa.

- Winter 2018** Commenced work with PhD student Guendalina Righetti newly enrolled in 2018 in the **unibz** PhD program.
- April 2018** Maria Hedblom successfully defended her PhD at the University of Magdeburg with *Magna Cum Laude*;
- Winter 2018/19** Lecturing at the Free-University of Bozen-Bolzano: ‘Logic and Discrete Mathematics’, Bachelor in Computer Science;
- Winter 2017/18** Lecturing at the Free-University of Bozen-Bolzano: ‘Logic and Discrete Mathematics’, Bachelor in Computer Science;
- Summer 2017** Lecturing at the Free-University of Bozen-Bolzano: ‘Introduction to Management Engineering’, Bachelor in Computer Science;
- Summer 2016** Lecturing at the Free-University of Bozen-Bolzano: ‘Introduction to Information Science’, Bachelor in Industrial and Mechanical Engineering (Summer); ‘Logic and Discrete Mathematics’, ‘Seminars in Data Semantics’ (Winter).

- Winter 2015** Lecturing at the Free-University of Bozen-Bolzano: ‘Logic and Discrete Mathematics’ (BA), ‘Seminars in Data and Knowledge Engineering’ (Master).
- 2014–16** Supervising 2 PhD students in Magdeburg (Madhura Thosar and Maria Hedblom); continued supervision of Maria Hedblom in Bolzano in 2015/16.
- Summer 2015** Lecturing at the Free-University of Bozen-Bolzano: ‘Introduction to Information Science’, Bachelor in Industrial and Mechanical Engineering.
- 2014/15** Lecturing at the Department of Computer Science, Otto-von-Guericke University of Magdeburg: courses on ‘Applied Ontology’ and ‘Computational Creativity’ (Summer); advanced lecture on description logics and student research project (Winter).
- 2011/12** Lectures on ‘From Syllogism to Common Sense: A Tour through the Logical Landscape’ at University of Bremen (Philosophy/Computer Science/Mathematics Departments);
- 2011** President of the PhD Qualifying Examination Committee, January 2011. ICT Doctoral School, University of Trento (4 PhD students);
- 2010–12** Phd Supervision of Tzu-Keng Fu at University of Bremen; thesis title ‘Logical Pluralism and the Geography of Thought’, defended in July 2012.
- 2010** Recognition of “habilitationsäquivalente Leistungen als ‘Wissenschaftler in herausgehobener Position’ ”: general teaching and examination authority, University of Bremen.
- Since 2009** Lecturing (‘Lehrauftrag’) at the Departments of Computer Science, Philosophy & Linguistics, and Digital Media; courses on ‘Vagueness in Language and Logic’ and ‘Information Flow and the Logic of Distributed Systems’, amongst others.
- 2009** Compact course (‘Blockseminar’) on Heterogeneous Ontologies (Bremen/Münster);
- 2009** ESSLLI 2009 (*21st European Summer School in Logic, Language and Information, Bordeaux, July 20–31, 2009*) advanced course entitled ‘Ontologies: Structuring, Modularity, and Heterogeneity’ (with Stefano Borgo (Trento) and Till Mossakowski (Magdeburg)) (see <http://www.informatik.uni-bremen.de/~okutz/esslli09/>).
- 2003** Teaching Assistantship for ‘*Logic and Foundations of Computer Science*’, University of Liverpool: taught classes on set theory, logic, and elementary mathematics, and supervised exams.
- 2000–2002** Teaching Assistantship for ‘*Logics in Artificial Intelligence*’, University of Leipzig: taught classes on discrete mathematics, logic, and knowledge representation, and co-examined students at MA level.
- 1998** Designed and taught a *two semester interdisciplinary course* on the Philosophy of Mathematics, Humboldt University at Berlin.
- 1997–1999** Teaching Assistant in the Department of Mathematics (Algebraic Geometry and Number Theory), Humboldt University at Berlin.
- 1995** Teaching Assistant (‘Hilfswissenschaftler’) in the Department of Philosophy (Analytic Philosophy & Philosophy of Mathematics), Ruhr-University of Bochum.

Teaching Statement.

I summarise previous and current teaching in the following two paragraphs.

Teaching Record.

He designed and taught four courses at the European Summer School in Logic, Language and Information: ‘Ontologies: Structuring, Modularity, and Heterogeneity’ (ESSLLI-2009, Bordeaux, July 2009), ‘Proof Complexity of Non-Classical Logics’ (ESSLLI-2010, Copenhagen, August 2010), ‘The Distributed Ontology Language DOL’ (ESSLLI 2016), and ‘Logic, ontology and planning: the robot’s knowledge’ (ESSLLI 2018). He moreover gave an invited tutorial on ‘ \mathcal{E} -connections of Spatial Logics’ at the Indian Logic School in 2012 (Manipal), and taught a tutorial on ‘Connecting Logics’ at the 4th World Congress and School on Universal Logic, Rio de Janeiro, Brazil, 2013.

He was an invited speaker at the Symposium on Ontology between Philosophy and Computer Science, affiliated to the 14th Congress of Logic, Methodology and Philosophy of Science (CLMPS-2011), Nancy, France, 2011, at the 3rd World Congress on the Square of Opposition, Beirut, Lebanon, 2012, and at the workshop on Computational Creativity, Concept Invention, and General Intelligence, C3GI at ECAI 2014, Prague, Czech Republic. He moreover given an invited tutorial on the DOL metalanguage at the Institute of Advanced Study at La Trobe University Melbourne in 2018.

His teaching at the University of Bremen (Lehrauftrag since 2009) focused on interdisciplinary lectures and seminars for the Departments of Computer Science, Linguistics, Philosophy, and Digital Media, including courses on ‘Vagueness in Language and Logic’, ‘Information Flow in Distributed Systems’, and ‘From Syllogism to Common Sense’. He also taught a joined block seminar on ‘Heterogeneous Ontologies’ for students from Münster and Bremen in 2009.

At the University of Magdeburg he was teaching one lecture and one seminar per semester in the areas of formal methods, logic and KR, ontology engineering, and computational creativity.

At the Free University of Bozen-Bolzano, he was teaching a 1st year course ‘Introduction to Information Science’ for the BA in Industrial and Mechanical Engineering, a foundational course covering basic computer science theory and applications. He was moreover teaching seminars on ‘Data Semantics’, and taught ‘Introduction to Management Engineering’, a class dedicated to teaching students to go through the full life-cycle from a first brainstormed idea to a full product development and business plan. Recently he covers yearly the first year BA course ‘Logic and Discrete Mathematics’.

He previously taught classes in the Department of Philosophy at Ruhr-University Bochum, the Departments of Mathematics and Philosophy at Humboldt University Berlin, and the Departments of Computer Science at the Universities of Leipzig and Liverpool. Topics covered include formal logic and set theory at elementary and advanced levels, history of logic, philosophy of language, as well as knowledge representation. At Humboldt University, he designed and taught a two semester interdisciplinary course on the Philosophy of Mathematics, funded by a teaching scholarship from the university.

Current Teaching and Portfolio.

I aim to emphasize inclusive and participatory concepts both in seminars and lectures. Three main guidelines of my corresponding approach to teaching are:

- Emphasis on student feedback and active participation
- Emphasis on project-based teaching and discovery-based learning (examples: together with students developing topically fitting “research questions” for term-long group projects, supervising their independent work/research over the course of the term).
- Emphasis on barrier-free interaction between lecturer and students (examples: active participation during courses, self-responsible study work by the students, etc.; introduction of “joint learning charter” conceptually aligning lecturer and students as partners in learning and learning-oriented research activities/projects).

At the Free University of Bozen-Bolzano I developed from the ground-up a new course ‘Introduction to Information Science’ for the Bachelor of Industrial and Mechanical Engineering, taught classes on Discrete Mathematics and Logics, and several more specialised seminars on Data Semantics and Knowledge Representation.

My teaching experience can contribute to a number of Bachelor and Master programmes. My teaching interests include in particular a number of interdisciplinary topics which lend themselves well to student projects and interactive teaching methods.

Core interests and competencies in teaching are the following:

- **Basic Computer Science and Mathematics:** Discrete Mathematics; Databases; Algorithms; Computability; Management Engineering; Information Science;
- **Knowledge Representation and Reasoning:** KR languages, reasoning techniques, modularity, multi-dimensional representation, etc.
- **Logic and Formal Methods:** In particular non-classical logics, non-monotonic reasoning, abduction, description logic, modal logics, quantification, automated theorem proving, category theory, etc.
- **Applied Ontology & Semantic Web:** Ontological principles and modelling, applications, foundations of Semantic Web technologies, semantic repositories, etc.
- **AI and Cognitive Sciences:** Analogy and blending, computational models; Computational Creativity; Foundations of Concept Acquisition; Concept Invention
- **AI and Philosophy:** Analytic Philosophy; Philosophy of Mathematics; Philosophy of AI; Philosophy of Cognitive Science;

Other Academic Resonsibilities

Internal appointments

- Member of the Lecturer’s Committee of the PhD in Computer Science of the **unibz** Faculty of Computer Science (since 2016);
- Bachelor student tutor (since 2018);

External appointments at national and international level

- **Editorial Board** of Applied Ontology (IOS Press).
- **Associate Editor** of CEUR (IAOA sub-series).
- International Association for Ontology and its Applications (**IAOA**):
Founding Member (2009), co-chair of the “Infrastructure Committee” (since 2010).
Executive Council since 2012.
Vice-president of the IAOA: elected 2015, re-elected 2018.
- **Committee President**, PhD qualifying examination committee, ICT Doctoral School, University of Trento (2011)

Professional Societies

- Association for Computing Machinery (**ACM**), since 2017.
- Association for Computational Creativity (**ACC**). Member since 2016.
- Association Neural-Symbolic Learning and Reasoning (**NeSy**). Member since 2016.
- Deutsche Gesellschaft für Informatik (**GI**). Member since 2012–15.
- Scandinavian Logic Society. Member since 2011.
- Australasian Association for Logic, Member since 2010.
- Association Computability in Europe (**CiE**). Member since 2008.
- Association for Symbolic Logic (**ASL**). Member since 2000–08.
- Deutsche Vereinigung für Mathematische Logik und für Grundlagen der Exakten Wissenschaften (‘German Association for Mathematical Logic and for the Foundations of the Exact Sciences’) (**DVMLG**). Member since 2000.

Events Organised at unibz

(I) Summerschool

ISAO 2016: The 3rd Interdisciplinary School on Applied Ontology, Bozen-Bolzano, June 27–July 1, 2016

<http://isao2016.inf.unibz.it>

ISAO is the main summer school of the International Association for Ontology and its Applications, IAOA, which happens biannually in close vicinity to the FOIS conference. It attracted about 80 participants.

ISAO 2020: The 5th Interdisciplinary School on Applied Ontology, Bozen-Bolzano, September, 2020

ISAO 2020 will be organised as part of the Bolzano Summer of Knowledge 2020.

(II) Conferences & Workshops

Co-Chair, Summer of Knowledge 2020: A co-location of several knowledge-focused conferences, to be held during three weeks in September 2020. Apart from a number of other participating conferences and workshops, I personally secured the participation of the following events. In addition to my role as Local Chair, for EKAW 2020 I also serve as General Chair of the conference after a successful bid in December 2018.

- i) **FOIS 2020:** *11th International Conference on Formal Ontology in Information Systems*;
- ii) **EKAW 2020:** *22nd International Conference on Knowledge Engineering and Knowledge Management*;
- iii) **ICBO 2020:** *11th International Conference on Biomedical Ontology*;
- iv) **JOWO 2020:** *The 6th Joint Ontology Workshops*;
- v) **ISAO 2020:** *The 5th Interdisciplinary School on Applied Ontology*.

TriCoLore 2018: Creativity | Cognition | Computation. Joint Workshops C3GI * ISD4 * SCORE, December 13–14, Free University of Bozen-Bolzano and EURAC Research Centre, Bozen, Italy

<https://tricolore.inf.unibz.it>

TriCoLore combined the workshop C3GI on computational creativity, the workshop ISD on image schema research, and the SCORE workshop on cognitive robotics. The event could attract 5 high-profile keynote speakers, namely Marianna Bolognesi (University of Oxford), Aldo Gangemi (University of Bologna), Irene Mittelberg (University of Aachen), Alessandro Oltramari (Bosch Research, Pittsburgh), and Marija Slavkovic (University of Bergen).

JOWO 2017: The Joint Ontology Workshops 2017. Episode 3: The Tyrolean Autumn, September 21–23, 2017

<http://iaoa.org/jowo/>

JOWO is a multi-track conference, co-locating a number of ontology-centered workshop from a broad spectrum of research fields. JOWO 2017 attracted 10 workshops running over 3 days with Kutz as local and general chair, who also co-organised two of the workshops, ISD3 and SHAPES 4.0. JOWO attracted around 100 participants. **JOWO 2020** will be organised as part of the Bolzano Summer of Knowledge.

Further standalone workshops organised at **unibz** include:

ISD: The Image Schema Days, yearly since 2015.

<http://isd.inf.unibz.it>

The ‘Image Schema Days’, organised at **unibz** yearly since 2015, focus on the notion of ‘image schema’ central in cognitive linguistics, and its impact in AI and KR.

C3GI: Computational Creativity

<http://c3gi.inf.unibz.it/archive/>

The workshop on Computational Creativity, Concept Invention, and General Intelligence, C3GI, was co-located with the ESSLLI summerschool held at **unibz**. Kutz is now co-heading the steering committee of the C3GI series.

FOUST project.

<https://foust.inf.unibz.it>

The FOUST project kicked off at **unibz** in February 2017, with a second meeting during JOWO 2017 (at **unibz**) and a third meeting at FOIS 2018 (Cape Town, South Africa). It is at the same time a workshop format and a publication outlet with the goal to build a digital archive for foundational ontologies, documented in a special issue of the journal Applied Ontology, to be completed during 2019.

(III) Third Mission

LUNA: Lange Nacht der Forschung, 2016

<https://lunganottedellaricerca.it/de/standorte/freie-universitaet-bozen>
In the long night of science 2016, in the exhibition space ‘Mein PC ist ein Musikgenie’ we presented demos and multi-media installations on the topic of computational creativity, with a focus on music, summarising results of our FP7 research project.

Interview with Academia, September 2017

<http://www.academia.bz.it/articles/wie-man-maschinen-das-nachdenken-beibringt>
The outcomes and relevance of the JOWO conference was discussed and published in an interview for Academia.

Interview for the organisation of TriCoLore 2018, December 2018

<https://www.unibz.it/en/news/130572-koennen-roboter-kreativ-malen>
In connection with the organisation of the TriCoLore event (<https://tricolore.inf.unibz.it>), the intersection of robotics, human cognition and creativity, and ontology research was discussed in ‘Können Roboter kreativ sein?’.

LUNA: Lange Nacht der Forschung, 2019

A new LUNA participation is under development in cooperation with Giancarlo Guizzardi, Enrico Franconi and Rafael Penaloza, on the topic of everyday reasoning ‘La conoscenza delle cose di tutti i giorni: Comprendere e ragionare con la conoscenza di senso comune’.

Third mission activities with local industry, 2018/19

Together with Giancarlo Guizzardi and Daniele Porello (**unibz**) and Roberto Confalonieri (external consultant, Alpha, Telefonica Spain) we cooperate with (for the AlpineAlliance) **IDM Südtirol / AltoAdige** regarding the deployment of semantic technologies, modelling approaches and ontologies to the local skiing industry.

Professional Activities | Organised Events

Associate Editor, CEUR Online Proceedings: Associate Editor of the <http://ceur-ws.org>, handling the sub-series of the IAOA Association <http://ceur-ws.org/iaoa.html>.

Co-Chair, Summer of Knowledge 2020: A co-location of several knowledge-focused conferences, including the *11th International Conference on Formal Ontology in Information Systems* and the *22nd International Conference on Knowledge Engineering and Knowledge Management*, Bozen-Bolzano, Italy, 2020.

General Chair, EKAW 2020: *22nd International Conference on Knowledge Engineering and Knowledge Management*, Bozen-Bolzano, Italy, September 2020.

Local Chair, FOIS-2020: *11th International Conference on Formal Ontology in Information Systems*, Bozen-Bolzano, Italy, 2020.

General Chair, FOIS-2018: *10th International Conference on Formal Ontology in Information Systems*, Cape Town, South Africa, September 2018.

Co-Organiser of JOWO workshops CAOS-CEX 2018 ('Cognition and Ontologies + CEX') and BOG ('Bad Ontologies') 2018, to be held at FOIS 2018. <http://www.iaoa.org/jowo2018/>

Co-Organiser of ISD4 - The 4th Image Schema Day, to be held at the Free-University of Bozen-Bolzano, Italy. <http://isd.inf.unibz.it>

Co-Organiser of cex 2017 - Workshop on Comprehensibility and Explanation in AI and ML, to be held at AIXIA 2017, University of Bari, Italy, November, 2017. <https://cex.inf.unibz.it>

Co-Organiser of C3GI 2017 - 6th International Workshop on Computational Creativity, Concept Invention, and General Intelligence. Complutense University of Madrid, Spain, December 15, 2017. <https://c3gi.inf.unibz.it>

Co-Organiser of SHAPES 4.0 - The Shape of Things, to be held at JOWO 2017, Free-University of Bozen-Bolzano, September 21-23, 2017, Bozen-Bolzano, Italy. <http://shapes.inf.unibz.it>

Co-Organiser of ISD3 - The 3rd Image Schema Day, to be held at JOWO 2017, Free-University of Bozen-Bolzano, September 21-23, 2017, Bozen-Bolzano, Italy. <http://isd.inf.unibz.it>

Co-Organiser of FOUST II - The 2nd Workshop on Foundational Ontology, to be held at JOWO 2017, Free-University of Bozen-Bolzano, September 21-23, 2017, Bozen-Bolzano, Italy. <https://foust.inf.unibz.it>

Local and General Chair, JOWO-2017: 3rd Joint Ontology Workshops, Free University of Bozen-Bolzano, September 21–23, 2017.

Co-Organiser of FOUST - The Foundational Stance, held at Free-University of Bozen-Bolzano, February 27–28, 2017, Bozen-Bolzano, Italy. <https://foust.inf.unibz.it>

Co-Organiser of the Second International Workshop on Cognition And Ontologies (CAOS-17), held at AISB 2017, April 18–21, 2017, Bath, UK.

Convenor: *From Computational Creativity to Creativity Science*. An International Conference at the ZiF Centre for Interdisciplinary Research, 19–22 September 2016, Bielefeld, Germany. Keynotes by: Mark Turner, Razvan Diaconescu, Luciano Serafini, David Cope, and François Pachet.

General Chair, ISAO 2016: 3rd Interdisciplinary School on Applied Ontology, Bozen-Bolzano, June 27–July 1, 2016.

Co-Organiser of the 5th Computational Creativity, Concept Invention, and General Intelligence (C3GI 2016), collocated with ESSLLI 2016, August 20–22, 2016, Bozen-Bolzano, Italy

Co-Organiser of the *Image Schema Day: Vol II*, August 22, Bolzano, Italy. Invited talks by Tim Fernando (Dublin), John Bateman (Bremen), Stefano Borgo (Trento), and Brian Magerko (Georgia Tech).

General Chair of JOWO, the Joint Ontology Workshops 2016, and **Workshop Chair of FOIS-16**, held at the 9th International Conference on Formal Ontology in Information Systems (FOIS 2016) held in Annecy, France, between July 6–9, 2016.

Organiser of the International Workshop 'New Standards for the Working Ontologist: Common Logic and DOL' (NSWO-16), held at JOWO-16, Annecy, France, as part of FOIS

2016.

Organiser of the First International Workshop on Cognition And Ontologies (CAOS-16), held at JOWO-16, Annecy, France, as part of FOIS 2016.

Elected **Vice-President of the IAOA**, the International Association for Ontology and its Applications, January 2015.

Organiser and PC Chair of SHAPES 3.0 – The Shape of Things, held in conjunction with the Ninth International and Interdisciplinary Conference on Modeling and Using Context, CONTEXT 2015, Larnaca, Cyprus, 2–6 November 2015.

Co-Organiser of the *Image Schema Day: Vol I*, October 2, Bolzano, Italy. Invited talks by John Bateman (Bremen), Nicola Guarino (Trento), and Tony Veale (Dublin).

Organiser and PC Chair of the 1st workshop on Formal Ontologies for Artificial Intelligence, FOFAI 2015, held at IJCAI 2015 in Buenos Aires. FOFAI was a participant in the Joint Ontology Workshops - JOWO 2015.

Joined the **Editorial Board** of the Journal of Applied Ontology (IOS Press) in 2015.

PC chair, FOIS-2014 (*8th International Conference on Formal Ontology in Information Systems*), Rio de Janeiro, Brazil, 2014.

Co-chair and **Advisory Committee** for the **2014 Ontology Summit on Big Data and Semantic Web Meets Applied Ontology** (Track G).¹

Member of the **advisory committee** for the 1st meeting of the **IAOA Design Semantics SIG**, Bari, Italy.

Co-organiser, **SQUARE IV - 4th World Congress on the Square of Opposition**, Pontifical Lateran University, Vatican City, Rome, Italy, May 5–9, 2014.²

Advisory Committee for the **2013 Ontology Summit**.³

Elected to the **Executive Council of the IAOA**, the International Association for Ontology and its Applications, July 2012, re-elected September 2013.

Member of the **Steering Committee of WoMO** (since 2012), the Workshop series on Modular Ontologies.⁴

Co-organiser (PC chair), **SHAPES 2.0**, co-located with the 4th World Congress and School on Universal Logic, Rio de Janeiro, Brazil, March 29–April 7, 2013⁵

Guest Editor, **Applied Ontology**, 2010/11, *Special Issue on ‘Modular Ontologies’ of the International Journal of Applied Ontology*, IOS Press, with Joana Hois (Bremen).⁶

Co-project leader (with Till Mossakowski, Michael Grüninger) and Named Expert of DIN, **ISO NP 17347 (OntoIOP)**, OMG standardisation initiative concerning “Ontology Integration and Interoperability: The Distributed Ontology Language (DOL)”⁷

Co-chair, **IAOA**, since 2010 co-heading the permanent committee on “Infrastructure” of

¹website: <http://ontolog.cim3.net/cgi-bin/wiki.pl?OntologySummit2014>

²website: <http://www.square-of-opposition.org/start4.html>

³website: <http://ontolog.cim3.net/cgi-bin/wiki.pl?OntologySummit2013>

⁴website: <http://iaoa.org/womo>

⁵website: <http://cindy.informatik.uni-bremen.de/cosy/events/shapes2/>

⁶website: <http://www.informatik.uni-bremen.de/~okutz/womoA0/>

⁷website: www.ontoiop.org

the International Association of Applied Ontology.

Co-organiser (PC chair), **SHAPES 1.0** (*The Shape of Things*, co-located with Context-2011, Karlsruhe, Germany, September 27, 2011).⁸

Co-organiser (PC chair), **WoMO-11** (*5th International Workshop on Modular Ontologies*, co-located with ESSLLI-2011, Ljubljana, Slovenia, August 1–12, 2011).⁹

Co-organiser (PC chair), **WoMO-10** (*4th International Workshop on Modular Ontologies*), held in Toronto, Canada, May 11, 2010. Co-located with the 6th International Conference on Formal Ontology in Information Systems, FOIS 2010.

Founding Member, **IAOA**, 2009. The International Association of Ontology and its Applications was formally established in Trento in 2009.¹⁰

Co-organiser of **WoMO-06**, *First International Workshop on Modular Ontologies*, co-located with the International Semantic Web Conference (ISWC-06), Athens, Georgia, November 2006.

Programme Committee Memberships

AIC-19 7th International Workshop on “AI and Cognition” (AIC 2019) will be held in Manchester, UK, on September 10–11, 2019.

ICCC-19 Tenth International Conference on Computational Creativity, Charlotte, NC, USA, June 17–June 21, 2019.

AAAI-19. 33rd AAAI Conference on Artificial Intelligence, to be held January 27–February 1 in Honolulu, Hawaii, USA.

DL-19 32st International Workshop on Description Logics, 18–21 June 2019 Oslo, Norway.

IJCAI-ECAI-18. 27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence, Stockholm, Sweden, July 13–19, 2018.

ICCC-18 Ninth International Conference on Computational Creativity, June 25–June 29 in Salamanca, Spain.

WOMoCoE-18 3rd International Workshop on Ontology Modularity, Contextuality, and Evolution, co-located with KR 2018, Oct 29, 2018, Tempe, Arizona, USA.

KRNL-18 Workshop on Knowledge Representation in Natural Language, co-located with KR 2018, Oct 28, 2018, Tempe, Arizona, USA.

DL-18 31st International Workshop on Description Logics, co-located with KR 2018, 26–29 October 2018, Tempe, Arizona.

ECS@FOIS-18 Early Career Symposium at FOIS 2018, Cape Town, South Africa, September 2018.

ICCC-17. The Eighth International Conference on Computational Creativity, June 19–June 23, 2017, Atlanta, Georgia, USA.

ISD3. The 3rd Image Schema Day will be co-located with the 3rd Joint Ontology Workshops (JOWO 2017) taking place at the Free University of Bozen-Bolzano, Italy, between September 21–23.

⁸website: <http://www.sfbtr8.spatial-cognition.de/cosy/Events/shapes/>

⁹website: <http://www.informatik.uni-bremen.de/~okutz/womo5/>

¹⁰website: <http://www.iaoa.org/>

SHAPES 4.0. SHAPES 4.0: The Shape of Things. Workshop co-located with the 3rd Joint Ontology Workshops (JOWO 2017) taking place at the Free University of Bozen-Bolzano, Italy, between September 21–23.

FOUST II. FOUST II: 2nd Workshop on Foundational Ontology. Co-located with the 3rd Joint Ontology Workshops (JOWO 2017) taking place at the Free University of Bozen-Bolzano, Italy, between September 21–23.

K-CAP 2017. Ninth International Conference on Knowledge Capture, December 4th-6th, 2017, Austin, Texas, United States.

DL-17. 30th International Workshop on Description Logics, 18–21 July 2017, Montpellier, France.

KESW 2017. International Conference on Knowledge Engineering and Semantic Web (KESW 2017), 8–10 November in Szczecin, Poland.

VORTE 2017. 9th International Workshop on Vocabularies, Ontologies and Rules for the Enterprise, VORTE 2017, will be co-located with the 21th IEEE International EDOC Conference – The Enterprise Computing Conference, Québec-City, Canada, 10th-13th October, 2017

AGI-16. 9th International Conference on Artificial General Intelligence (AGI-2014), New York City, USA, 16–19 August, 2016.

FOIS-16. 9th International Conference on Formal Ontology in Information Systems (FOIS 2016) held in Annecy, France, between July 6–9, 2016.

KR-16. 15th International Conference on Principles of Knowledge Representation and Reasoning, held in Cape Town, South Africa on April 25–29, 2016.

LRCM-16. Second Workshop on Logics and Reasoning for Conceptual Models (LRCM 2016), April 21, 2016, Cape Town.

DL-16. 29th International Workshop on Description Logics, 22–25 April 2016, Cape Town, South Africa.

ESWC-16. 13th International Conference, ESWC 2016, Heraklion, Crete, Greece, May 29–June 2, 2016.

AIC-15. 3rd International Workshop on Artificial Intelligence and Cognition (AIC-2015).

AIDE-15. 1st Workshop on Artificial Intelligence & Design (AIDE-2015), held on September 22nd, 2015, in Ferrara, Italy, and co-located with the 14th Conference of the Italian Association for Artificial Intelligence (AI*IA 2015).

IWOOD-15. 3rd International Workshop on Definitions in Ontologies (IWOOD 2015), held in conjunction with the 6th International Conference on Biomedical Ontologies (ICBO 2015), Lisbon, Portugal, July 27–30, 2015.

C3GI-15. The 4th edition of Computational Creativity, Concept Invention, and General Intelligence (C3GI-2015), collocated with the 5th World Congress and School on Universal Logic (UNILOG) at Istanbul, Turkey, on June 25/26, 2015.

DL-15. 28th International Workshop on Description Logics, 7–10 June 2015, Athens, Greece.

ESWC-15. The 12th Extended Semantic Web Conference (ESWC 2015), held in Portoroz

(Slovenia) between 31st of May and 4th of June.

CiE-15. 11th Computability in Europe conference, Bucharest, Romania, 29 June–3 July 2015.

AIG-14. 2nd International Workshop on Artificial Intelligence and Cognition, Torino, Italy, November 26th–27th, 2014.

ECAI-14. 21st European Conference on Artificial Intelligence, Prag, Czech Republic, 18–22 August 2014.

ODLS-14. Workshop on Ontologies and Data in Life Sciences, Freiburg i.Br., Germany, October, 2014.

C3GI-14 Computational Creativity, Concept Invention, and General Intelligence, Workshop at ECAI 2014.

AGI-14. 7th International Conference on Artificial General Intelligence, Quebec City, Canada, August 1–4, 2014.

AIMSA-14. 16th International Conference on Artificial Intelligence: Methodology, Systems, Applications, Varna, Bulgaria, September, 2014.

IJCAI-13. 23rd International Joint Conference on Artificial Intelligence, Beijing, China, August 3–9, 2013.

LRCM-13. First Workshop on Logics and Reasoning for Conceptual Models, LRCM-13, December 14, 2013, Stellenbosch, South Africa.

ARCOE-LogIC-13. The 5th International Workshop on Acquisition, Representation and Reasoning with Contextualized Knowledge, September, 2013, Corunna, Spain, co-located with LPNMR 2013.

ODLS-13. Workshop on Ontologies and Data in Life Sciences, Koblenz, Germany, September, 2013.

AGI-13. 6th International Conference on Artificial General Intelligence, Beijing, China, July 31–August 3, 2013.

Formal MAGiC. Formalizing Mechanisms for Artificial General Intelligence and Cognition, held at IJCAI 2013. Beijing, China.

AAAI-13. Twenty-Seventh AAAI Conference on Artificial Intelligence, held in Bellevue, Washington USA July 14–18, 2013.

C3GI-13 Computational Creativity, Concept Invention, and General Intelligence, Workshop at IJCAI 2013.

ECAI-12. 20th European Conference on Artificial Intelligence, Montpellier, France, August 27–31, 2012.

ARCOE-12. The 4th International Workshop on Acquisition, Representation and Reasoning with Contextualized Knowledge, August 27–28, 2012, Montpellier, France, co-located with ECAI 2012.

AIMSA-12. 15th International Conference on Artificial Intelligence: Methodology, Systems, Applications, Varna, Bulgaria, September 13–15, 2012.

STAIRS-12. 6th Starting Artificial Intelligence Research Symposium, held in Montpellier,

France, August 27–28, 2012, co-located with ECAI 2012.

ESWC-12. 9th Extended Semantic Web Conference, May 27–31, 2012, Heraklion, Greece.

KI-2012. 35th Annual German Conference on Artificial Intelligence (Poster and Demo track), Saarbrücken, Germany, September 24–27, 2012.

ISWC-11. 10th International Semantic Web Conference, Bonn, Germany, October 23–27, 2011.

OCAS-11. Workshop and Grand Challenge: Ontologies come of Age in the Semantic Web, co-located with the The 10th International Semantic Web Conference (ISWC-11), October 23–27, 2011, Bonn, Germany.

IJCAI-11. 22nd International Joint Conference on Artificial Intelligence, Barcelona, Catalonia (Spain), July 16–22, 2011.

NLPCS-11. 8th International Workshop on Natural Language Processing and Cognitive Science, Special Issue: Human-Machine Interaction in Translation, August 20–21, 2011, Copenhagen, Denmark.

CTUW-11. Special Session on Cognitive-based Text Understanding and Web Wisdom, held at the 10th IEEE International Conference on Cognitive Informatics & Cognitive Computing (ICCI*CC 2011), University of Calgary, Canada, August 18–20, 2011.

IICAI-11. 5th Indian International Conference on Artificial Intelligence, Tumkur, India, December 14–16, 2011.

STAIRS-10. 5th European Starting AI Researcher Symposium, held at ECAI, Lisbon, August 2010.

KR-10. Twelfth International Conference on the Principles of Knowledge Representation and Reasoning, held in Toronto, Canada, May 9–13, 2010.

ECAI-10. 19th European Conference on Artificial Intelligence, held in Lisbon, Portugal, August 16–20, 2010.

AAAI-10. Twenty-Fourth AAI Conference on Artificial Intelligence, held at the Westin Peachtree Plaza in Atlanta, Georgia, USA, July 11–15, 2010.

NLPCS-10. 7th International Workshop on Natural Language Processing and Cognitive Science, held in Funchal, Madeira, Portugal, May 8–9, 2010.

OWLED-09. 6th OWL: Experiences and Directions, co-located with ISWC-2009 and held in Washington DC, October 2009.

IICAI-09. 4th Indian International Conference on Artificial Intelligence, held in Tumkur, India, December 16–18, 2009.

DL-09. 22nd International Workshop on Description Logics, held in Oxford, United Kingdom, July 27–30, 2009.

IJCAI-09. 21st International Joint Conference on Artificial Intelligence, held in Pasadena, California, July 11–17, 2009.

NLPCS-09. The 6th International Workshop on Natural Language Processing and Cognitive Science, held in Milan, Italy, May 6–7, 2009.

AIMSA-08. 13th International Conference on Artificial Intelligence: Methodology, Sys-

tems, Applications, held in Varna, Bulgaria, September 4–6, 2008.

WORM-08. International Workshop on Ontologies: Reasoning and Modularity, held in conjunction with the ESWC-08, European Semantic Web Conference, Tenerife, Spain, June 2008.

WoMO-07. Second International Workshop on Modular Ontologies, held in conjunction with the Conference on Knowledge Capture, K-CAP-07, Whistler BC, Canada, October 28, 2007.

OnE-07. Workshop on Ontology Evolution, held in conjunction with the 10th International Conference on Business Information Systems, BIS 2007, Poznan, Poland, April 25–27, 2007.

Peer Reviewer (in addition to PC memberships)

Journals Review of Symbolic Logic (**JSL**), Journal of Symbolic Logic (**JSL**), Journal of Data Semantics (**JODS**), Journal of Logic and Computation (**JLC**) Journal of Artificial Intelligence Research (**JAIR**), Journal of Biomedical Semantics (**JBMS**), Studia Logica (**SL**), Applied Ontology (**AOJ**), Journal of Data & Knowledge Engineering (**DKE**), Logic Journal of the Interest Group in Pure and Applied Logics (**IGPL**), Journal of Applied Non-Classical Logics (**JANCL**), Bulletin of The Section of Logic (**BSL**), amongst others.

Conferences Logic in Computer Science (**CSL**), Conference on Principles of Knowledge Representation and Reasoning (**KR**), Methods for Modalities (**M4M**), European Conference on Artificial Intelligence (**ECAI**), Conference on Logic for Programming Artificial Intelligence and Reasoning (**LPAR**), Algebraic Methodology and Software Technology (**AMAST**), Frontiers of Combining Systems (**FroCos**), International Conference on Artificial Intelligence: Methodology, Systems, Applications (**AIMSA**), International Workshop on Description Logics (**DL**), Conference on Analytic Tableaux and Related Methods (**TABLEAUX**), Conference on Automated Deduction (**CADE**), Advances in Modal Logic (**AiML**), amongst others.

Research and Scholarship

Summary of current research and scholarship.

Oliver Kutz is an assistant professor in the KRDB Research Centre on Knowledge and Data of the Free University of Bozen-Bolzano, Italy.

He previously was a principal investigator at the University of Magdeburg, and held research positions in the SFB/TR 8 Research Center on Spatial Cognition at the University of Bremen (2007–2013), the ‘Information Management Group’ at the University of Manchester (2005–2006), the ‘Logic and Computation Group’ at the University of Liverpool (2003–04), and the ‘Intelligent Systems Department’ at the University of Leipzig (2000–2002), Germany. He obtained his PhD from the University of Liverpool in 2005, which gained him a BCS/CPHC Distinguished Dissertations Award (Finalist) of the British Computer Society in the 2004/5 competition.¹¹

He enjoyed extensive interdisciplinary training in Mathematics, Philosophy, as well as Cognitive & Computer Science, studying at the Universities of Bochum, Sussex, Berlin, Leipzig, and Liverpool.

Google Scholar: Citations 3029; h-index 25; i10-index 57;

Oliver Kutz is the highest ranked CS Assistant Professor and 9th amongst all (including tenured) CS professors, and 18th overall at **unibz**, according to Google Scholar.

Current Research.

A major focus of his current work is on computational techniques for bridging the gap between the (embodied) cognitive sciences and formal-logical approaches to model core notions that are understood to be involved in human concept formation, such as image schemas and affordances. He particularly focuses on the role concepts play in ontology, ways of logically formalising concepts, and the problem of discovery of newly created concepts. This is a highly interdisciplinary research area, encompassing problems and techniques studied in logic, philosophy, linguistics, and cognitive and computer science.

Between 2014-16, he was PI in the COINVENT project, a high-profile international research project funded by the European Commission’s 7th Framework Programme. It aimed at advancing the formal understanding of creativity by developing a computationally feasible, cognitively-inspired formal model of concept invention, drawing on interdisciplinary research results from logic, cognitive science, artificial intelligence, formal methods and computational creativity, and validating it for mathematical reasoning and melody harmonisation.

His responsibility within the COINVENT project was to provide a general formalisation of the Unified Concept Theory proposed by the late Joseph Goguen, to develop a logical framework for the highly influential idea of conceptual blending as introduced by Fauconnier and Turner in the 1990s, to advance the understanding and to study the heuristics of selecting ‘good’ concepts, and to build a collection of (common-sense) ontologies to help steer such selections, amongst other topics.

A number of important seed technologies that he has been working on over the past several years in Bremen and Magdeburg were part of this research endeavour, most importantly the Distributed Ontology Language DOL (ontoiop.org) and the Ontohub technol-

¹¹<http://www.bcs.org/server.php?show=conWebDoc.2842>

ogy (ontohub.org), as well as his fundamental research into ontology languages, (concept) integration problems, interoperability, and techniques for structuring logical theories as well as for logic combination.

Currently, at UNIBZ he is PI in five follow-up projects to COINVENT, namely CIAO ‘Concept Invention and Applied Ontology’, LOGIS ‘The Logic of Image Schemas’, COCO ‘Computational Technologies for Concept Invention’, ONTORATOR ‘Automated Ontology Generator’, and STELLA ‘Spatio-temporal Logics for Cognitive Artificial Intelligence’. The targeted work is intended to advance the state-of-the-art of bridging logical foundations with cognitively-based AI. He is currently supervising two Postdocs and one PhD student.

Core research questions that he currently addresses are the following:

- How can formal argumentation theory be combined with coherence theory and ontology debugging, in order to build a theory of concept evaluation that both reflects logical consistency aspects and softer social and background-knowledge based aspects?
- How can different logics of uncertainty and probability be combined into a single KR formalisms with transparent semantics and reasonable computational behaviour?
- How can we build formal but more cognitively-based general semantics for core notions of cognition, such as image schemas and affordances?
- How can formal logics reflecting core concepts from cognition, such as image schemas, be concretely applied to learning and reasoning tasks in, e.g., cognitive robotics?

Summary of previous research and scholarship.

Oliver Kutz is a leading researcher in non-classical logics, knowledge representation, and ontologies. During his PhD and postdoc phase, he has made substantial and highly cited contributions to various topics in the area, and his work was essential to defining several research trends (detailed below). In the last few years, he has developed a strong interest in connecting ontology and logic-based research with cognition and computational creativity.

The PhD thesis of Oliver Kutz was concerned with logics for spatial reasoning and moreover devised a general combination technique for heterogeneous knowledge bases, called ‘E-connections’, particularly well-behaved computationally (the main reference ‘E-connections of Abstract Description Systems’ published in the *AIJ* has currently 287 citations on Google Scholar). He then moved on to working with Ulrike Sattler and Ian Horrocks at the University of Manchester, co-designing the logic SROIQ underlying the Web Ontology Language OWL 2 DL (the corresponding KR paper has currently 988 citations on Google Scholar) and investigated non-classical reasoning for ontologies such as abduction for DLs (the paper has 117 citations on Google Scholar). At the University of Bremen, he worked primarily on spatial cognition, applied ontology, and heterogeneous KR. He is particularly co-chairing, since 2009, a major international effort to devise the DOL language, a meta-language to support multi-logic modelling for ontologies and formal specifications in general. DOL was formally adopted by the Object Management Group (OMG) in 2016 (the main reference is ‘Carnap, Goguen, and the Hyperontologies’, 81 citations on Google Scholar; a FOIS paper developing the basic semantics won the Best Paper Award in 2012 (44 citations on Google

Scholar). Between 2014–16, Kutz was a PI in the FP7 project COINVENT, developing the abstract logic and KR infrastructure for a cognitively motivated model of concept invention.

He is in particular applying logic and ontological modelling in diverse application areas, including in Spatial Reasoning, Cognitive Science, Natural Language Processing, Life Sciences & Chemistry, as well as Design & Computational Creativity.

Research grants and contracts

2018–20 PI, SCORE project, DAAD-MIUR cooperation project, ‘From Image Schemas to Cognitive Robotics: A formal framework and computational models for embodied simulations’; 40K, Partner: University of Bremen, Germany.

2018–20 co-PI, STELLA project, CRC Call 2017, ‘Spatio-temporal Logics for Cognitive Artificial Intelligence’; 100K, Free University of Bozen-Bolzano.

2018–19 PI, ONTORATOR project, RTD Call 2018, ‘Automated Ontology Generator’; 10K, Free University of Bozen-Bolzano.

2017–19 co-PI, CREED project, RTD Call 2017, ‘Coherence and Explanation’; 10K, Free University of Bozen-Bolzano.

2016 Convenor, Creativity Science: Symposium at the ZiF Centre for Interdisciplinary Research, Bielefeld, Germany. Funding of 10K by the ZiF.

2016–18 PI, COCO project, CRC Call 2016, ‘Computational Technologies for Concept Invention’; 70K, Free University of Bozen-Bolzano.

2016/18 PI, RTD LOGIS project, ‘The Logic of Image Schemas’; 20K, Free University of Bozen-Bolzano.

2016 C3GI 2016 and Image Schema Day II, co-funded by **unibz**, 2.5k

2014–16 Principal Investigator: EU Collaborative Project COINVENT (‘Concept Invention Theory’) (ICT STREP, 7 partner institutions, 450K, 2.7 Million Euro total, started March 2014).

2015 PI, CIAO project ‘Concept Invention and Applied Ontology’; 10K, Free University of Bozen-Bolzano.

2013 PI, SpacePortal Project (awarded Euro 29723).

2013 Funding for Shapes 2.0: 15.000 R\$ awarded by CAPES – Coordination for the improvement of Higher-level Personnel; and 5.000 R\$ awarded by the National Council for Scientific and Technological Development (CNPq).

2012 PI, OntoHub/OntoIOp Project, SFB/TR 8 Funding (Euro 25473 awarded);

2011 SFB/TR 8 funding for WoMO 2011 and book publication (Ljubljana, Slovenia) as well as SHAPES 1.0 (Karlsruhe, Germany).

2010 SFB/TR 8 funding for the organisation of WoMO 2010 (Toronto, Canada) and book publication.

2010 Co-authored the II-[OntoSpace] grant proposal for the third phase of the Research Center on Spatial Cognition SFB/TR 8 (named researcher) (2011–2014).

2002 Co-authored the grant proposal for the second phase of the DFG project ‘*Combination of Modal and Description Logics for the Representation of Intensional and Dynamical Knowledge*’ in which I worked as a (named) RA in Liverpool between 2003–2004.

Three High-Impact Publications

I summarise three representative research publications with significant impact.

(I) On the Theory of Logic Combination

E-Connections of Abstract Description Systems.,

O. Kutz, C. Lutz, F. Wolter, and M. Zakharyashev.

Artificial Intelligence, 156(1):1–73, 2004.

E-connections (a technique that I introduced in my PhD thesis) are a logic combination technique in which one can build (global) knowledge bases by connecting local ones written in a variety of logics, using various kinds of ‘bridge formulae’. The intuitive semantics and robustness of the method regarding decidability preservation have made it a popular choice for heterogeneous, distributed modelling problems, in particular concerning different logics of time and space. E-connections have also been heavily used and implemented as a partitioning technique for web ontologies, and are a central theme in the ongoing Workshops on Modular Ontologies (WoMO).

(This paper has **290 citations** on Google Scholar, March 2019.)

(II) On the Logic for the Semantic Web

The Even More Irresistible SROIQ.

I. Horrocks, O. Kutz, and U. Sattler.

Proc. of the 10th Conference on Principles of Knowledge Representation and Reasoning (KR-06).

Morgan Kaufmann, 2006.

Extending earlier work on expressive description logics (DLs), this paper pushed the expressive limits further adding features that were particularly requested by practitioners, without yielding undecidability or breaking basic implementation features of tableaux-based methods. The logic SROIQ here defined was adopted as the logical core of the Web Ontology Language OWL 2 DL, and is now a W3C recommendation. The logic SROIQ is now the baseline for research on expressive DLs.

(This paper has **1005 citations** on Google Scholar, March 2019.)

(III) On Heterogeneous Knowledge Representation

Carnap, Goguen, and the Hyperontologies: Logical Pluralism and Heterogeneous Structuring in Ontology Design.

O. Kutz, T. Mossakowski, and D. Luecke.

Logica Universalis, Special Issue on ‘Is Logic Universal?’, Volume 4, Number 2, 255–333, 2010.

We here summarise several years of work on structuring, modularisation, and combination problems in the area of ontology engineering and formal modelling in heterogeneous logical environments, with Goguen and Burstall’s theory of institutions as the central theoretical backbone; this paper provides the general theoretical framework for the design of the Distributed Ontology, Modeling and Specification language DOL, which was adopted formally by the Object Management Group OMG as an international standard in 2016.

(This paper has **83 citations** on Google Scholar, March 2019.)

List of Publications

March 2019

Oliver Kutz

12 Selected Publications

- **A Computational Framework for Concept Blending.**
M. Eppe, E. Maclean, R. Confalonieri, O. Kutz, M. Schorlemmer, E. Plaza, K.-U. Kühnberger. *Artificial Intelligence*, Volume 256, March 2018, 105–129, Elsevier, 2018.
- **Orchestrating a Network of Mereo(topo)logical Theories**
C. Maria Keet and Oliver Kutz. In *K-CAP 2017 Knowledge Capture*, December 4th-6th, Austin, Texas, United States, 2017. **K-CAP 2017 Best Paper Award**
- **Image schemas in computational conceptual blending.**
M. M. Hedblom, O. Kutz, F. Neuhaus. *Cognitive Systems Research*, 39: 42–57, 2016.
- **A categorical approach to networks of aligned ontologies.**
M. Codescu, T. Mossakowski, O. Kutz.
Journal on Data Semantics (JODS), Springer, 2017.
- **Three Semantics for the Core of the Distributed Ontology Language.**
T. Mossakowski, C. Lange, and O. Kutz. In *Proc. of the 7th International Conference on Formal Ontology in Information Systems (FOIS 2012)*, Graz, Austria, 2012.
(**FOIS Best Paper Award**; also presented at IJCAI-13 Best Paper Track)
- **Ontological Modelling of Form and Function in Architectural Design.**
M. Bhatt, J. Hois, and O. Kutz. *Journal of Applied Ontology*, 7(3): 233–267, 2012.
- **A Modular Consistency Proof for Dolce.**
O. Kutz and T. Mossakowski. In *Proc. of Twenty-Fifth Conference on Artificial Intelligence (AAAI-11)*, held in San Francisco, California, August 7–11, AAAI Press, 2011.
- **Carnap, Goguen, and the Hyperontologies—Logical Pluralism and Heterogeneous Structuring in Ontology Design.**
O. Kutz, T. Mossakowski, and D. Luecke. *Logica Universalis*, Special Issue on ‘Is Logic Universal?’, Volume 4, Number 2, 255–333, 2010.
- **Logically Possible Worlds and Counterpart Semantics for Modal Logic.**
M. Kracht and O. Kutz. In Dale Jacquette, editor, *Handbook of the Philosophy of Logic*, volume 5 of *Handbook of the Philosophy of Science*, pages 963–1018. Elsevier, 2007.
- **The Even More Irresistible SROIQ.**
I. Horrocks, O. Kutz, and U. Sattler. In *Proc. of the 10th Conference on Principles of Knowledge Representation and Reasoning (KR-06)*. Morgan Kaufmann, 2006.
- **\mathcal{E} -Connections of Abstract Description Systems.**
O. Kutz, C. Lutz, F. Wolter, and M. Zakharyashev. *Artificial Intelligence*, 156(1):1–73, 2004.
- **Logics of metric spaces.**
O. Kutz, H. Sturm, N.-Y. Suzuki, F. Wolter, and M. Zakharyashev. *ACM Transactions on Computational Logic (TOCL)*, 4(2):260–294, 2003.

Theses

- **\mathcal{E} -Connections and Logics of Distance.**
O. Kutz. *PhD thesis*, The University of Liverpool, 2005.
- **Kripke-Typ Semantiken für die modale Prädikatenlogik.**
O. Kutz. *Master's thesis*, Fachbereich Mathematik, Humboldt-Universität zu Berlin, 2000.

Book Chapters

- **Image Schemas and Concept Invention.**
M. M. Hedblom, O. Kutz, and F. Neuhaus. In Confalonieri, R., Pease, A., Schorlemmer, M., Besold, T., Kutz, O., Maclean, E., Kaliakatsos-Papakostas, M. (Eds.). *Concept Invention: Foundations, Implementation, Social Aspects and Applications*, Computational Synthesis and Creative Systems, Springer, 2018.
- **Conceptual Blending in DOL: Evaluating Consistency and Conflict Resolution.**
M. Codescu, F. Neuhaus, T. Mossakowski, O. Kutz, and Danny de Jesús Gómez-Ramírez. In Confalonieri, R., Pease, A., Schorlemmer, M., Besold, T., Kutz, O., Maclean, E., Kaliakatsos-Papakostas, M. (Eds.). *Concept Invention: Foundations, Implementation, Social Aspects and Applications*, Computational Synthesis and Creative Systems, Springer, 2018.
- **E pluribus unum—Formalisation, Use-Cases, and Computational Support for Conceptual Blending.**
O. Kutz, J. Bateman, T. Mossakowski, F. Neuhaus, and M. Bhatt. In T. R. Besold et al., editors, *Computational Creativity Research: Towards Creative Machines*, Atlantis/Springer, Thinking Machines, 2015.
- **Proof Complexity of Non-Classical Logics.**
O. Beyersdorff and O. Kutz.
Chapter based on ESSLLI-2010 course material, Association for Logic, Language and Information (FoLLI), Springer, 2012.
www.informatik.uni-bremen.de/~okutz/proofcomplexity.pdf
- **Logically Possible Worlds and Counterpart Semantics for Modal Logic.**
M. Kracht and O. Kutz. In Dale Jacquette, editor, *Handbook of the Philosophy of Logic*, volume 5 of *Handbook of the Philosophy of Science*, pages 963–1018. Elsevier, 2007.
- **The Semantics of Modal Predicate Logic II. Modal Individuals Revisited.**
M. Kracht and O. Kutz. In Reinhard Kahle, editor, *Intensionality*, volume 22 of *ASL Lecture Notes in Logic*, pages 60–97. A. K. Peters, Los Angeles, 2005.
- **New Semantics for Modal Predicate Logics.**
O. Kutz. In Benedikt Löwe, Wolfgang Malzkorn, and Thoralf Räscher, editors, *Foundations of the Formal Sciences II: Applications of Mathematical Logic in Philosophy and Linguistics*, volume 17 of *Trends in Logic*, pages 151–162, Dordrecht, Boston, London, 2003. Kluwer Academic Publishers.

Books | Journal Special Issues

- **Formal Ontology in Information Systems, Proceedings of the Tenth International Conference (FOIS 2018).**
S. Borgo, P. Hitzler and O. Kutz (eds). Cape Town, South Africa, September 17-21, 2018. *Frontiers in Artificial Intelligence and Applications*, Volume 306, IOS Press, 2018.
<https://www.iospress.nl/book/formal-ontology-in-information-systems-9/>
- **Concept Invention: Foundations, Implementation, Social Aspects and Applications.**
R. Confalonieri, A. Pease, M. Schorlemmer, T. Besold, O. Kutz, E. Maclean, M. Kaliakatsos (eds.). *Computational Synthesis and Creative Systems*, Springer, 2018.
<https://www.springer.com/de/book/9783319656014>
- **Formal Ontology in Information Systems, Proceedings of the Eighth International Conference (FOIS 2014).**
P. Garbacz and O. Kutz (eds). Rio de Janeiro, Brazil, September 22-26, 2014. *Frontiers in Artificial Intelligence and Applications*, Vol. 267, IOS Press, 2014.
- **Modular Ontologies.**
O. Kutz and J. Hois (editors) *Applied Ontology*, Volume 7, Issue 2, Special Issue, 2012.
<https://content.iospress.com/journals/applied-ontology/7/2>
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- **Conceptual Blending in \mathcal{EL}^{++}** R. Confalonieri, M. Schorlemmer, O. Kutz, R. Peñaloza, E. Plaza and M. Eppe.
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O. Kutz, D. Lücke, and T. Mossakowski. *1st International Workshop on Foundations of Computer Science as Logic-Related, (ICTAC-08)*, Istanbul, Turkey, 2008.
- **Heterogeneously Structured Ontologies—Integration, Connection, and Refinement.**
O. Kutz, D. Lücke, and T. Mossakowski. *Knowledge Representation Ontology Workshop, KROW-08*, Sydney, Australia, CRPIT Vol-90, 2008.
- **Ontologizing Metadata for Assistive Technologies—The OASIS Repository.**
A. Garcia Castro, I. Normann, J. Hois, and O. Kutz. *1st International Workshop on Ontologies in Interactive Systems (Ontoract-08)*, Liverpool, UK, 2008. IEEE.
- **Shapes of Alignments: Construction, Combination, and Computation.**
O. Kutz, T. Mossakowski and M. Codescu. In *ESWC workshop WORM-08, ‘Ontologies: Reasoning and Modularity’*, Tenerife, June 2008. CEUR Workshop Proceedings, Vol. 348.
- **Modules in Transition: Conservativity, Composition, and Colimits.**
O. Kutz and T. Mossakowski. In *2nd International Workshop on Modular Ontologies, W&MO-07*, Whistler, Canada, 2007.
- **Modular Ontology Languages Revisited.**
B. Cuenca-Grau and O. Kutz. In *SWeCKa-07, IJCAI Workshop on Semantic Web for Collaborative Knowledge Acquisition*, Hyderabad, India, 2007.

- **A Case for Abductive Reasoning over Ontologies.**
C. Elsenbroich, O. Kutz, and U. Sattler. In *Proc. of OWL: Experiences and Directions (OWLED-06)*, Athens, Georgia, USA, November 10th-11th, 2006.
- **Will my Ontologies Fit Together?**
B. Cuenca-Grau, I. Horrocks, O. Kutz, and U. Sattler. In *Proc. of the International Workshop on Description Logics (DL-06)*, Lake District, UK, 2006.
- **The Irresistible *STRQ*.**
I. Horrocks, O. Kutz, and U. Sattler. In *Proc. of OWL: Experiences and Directions, Galway, Ireland, November 11th-12th*, 2005.
- **\mathcal{E} -Connections of Description Logics.**
O. Kutz, C. Lutz, F. Wolter, and M. Zakharyashev. In *Proc. of the International Workshop on Description Logics (DL-03)*, p. 178–187, Rome, 2003.
- **A note on concepts and distances.**
O. Kutz, F. Wolter, and M. Zakharyashev. In *Proc. of the International Workshop on Description Logics (DL-2001)*, Stanford, 2001.

Miscellanea: Invited Papers, Deliverables, Technical Reports, Extended Abstracts

- **On the Role of Universal Logic in Concept Invention.**
O. Kutz, F. Neuhaus, K.U. Kühnberger. In: *Handbook of the 5th World Congress and School on Universal Logic*, 2015.
- **Logic in Applied Ontology.**
O. Kutz and S. Borgo. In J.-Y. Beziau, editor, *Encyclopaedia of Logic*, College Publications, invited chapter, forthcoming 2017.
- **COINVENT: Concept Invention Theory - Ontologies and Semantic Web Technologies for Concept Invention.**
M. Schorlemmer, A. Smaill, K.-U. Kühnberger, O. Kutz, S. Colton, E. Cambouropoulos, A. Pease In 5th European Semantic Web Conference (ESWC 2014), EU Project Networking Session, May 27, Crete, Greece, 2014.
- **Connected Alignments: Consistency Propagation and Modularity.**
O. Kutz, I. Normann, and T. Mossakowski. *Technical Report*, The University of Bremen, 2012. <http://www.informatik.uni-bremen.de/~okutz/conalign.pdf>
- **Biomedical ontologies facing the disunity of science.**
A. Sojic and O. Kutz. In *Proc. of the Int. Conference on the Collective Dimension of Science, CDS-11*, Nancy, December 2011.
- **Three Extended Abstracts for the 14th Congress on Logic, Methodology and Philosophy of Science, CLMPS, Nancy, 2011.**
O. Kutz and J. Hois. Steering Ontological Blending.
J. Hois and O. Kutz. Towards Linguistically-Grounded Spatial Logics.
O. Kutz. Logical Pluralism in Ontology Design. CLMPS Affiliated Symposium on ‘Ontology between Philosophy and Computer Science’.

- **Making Heterogeneous Ontologies Interoperable Through Standardisation.**
C. Lange, T. Mossakowski, C. Galinski, and O. Kutz. In *Proc. of AEGIS 2nd International Conference Accessibility Reaching Everywhere*, Brussels, November 28–30, 2011.
- **Ontologiebasierte Routenplanung für eine aktivitätsorientierte Elektromobilität mit OpenStreetMap.**
T. Mossakowski, M. Codescu, O. Kutz. In *Proc. of 16. Magdeburger Logistiktagung*, University of Magdeburg, Germany, 29.6–1.7 2011.
- **Ontologies and Reasoning for Ambient Assisted Living.**
I. Normann, F. Dylla, J. Hois, O. Kutz, M. Bhatt, M. Schmitt, W. Putz, S. Weber. In *Online proceedings of the 1st OASIS International Conference*, Florence, Italy, 2009.
- **Similarity-Connections between Natural Language and Spatial Situations.**
J. Hois, O. Kutz, and J. Bateman. *Workshop on Spatial Language in Context: Computational and Theoretical Approaches to Situation Specific Meaning, (SC-08)* (extended abstract), Freiburg, Germany. 2008.
- **Conservativity in Structured Ontologies.**
O. Kutz and T. Mossakowski. *Technical Report*, The University of Bremen, 2008.
<http://www.informatik.uni-bremen.de/~okutz/OntoStruc-TR.pdf>
- **The OWL in the CASL—Designing Ontologies Across Logics.**
O. Kutz, D. Lücke, T. Mossakowski, and I. Normann. *Technical Report*, The University of Bremen, 2008. <http://www.informatik.uni-bremen.de/~okutz/OWLinCASL-TR.pdf>
- **Modular Ontology Languages Revisited.**
B. Cuenca-Grau and O. Kutz. *Technical Report*, The University of Manchester, 2007.
<http://www.cs.man.ac.uk/~okutz/TRm01.pdf>
- **Will my Ontologies Fit Together?**
B. Cuenca-Grau, I. Horrocks, O. Kutz, and U. Sattler. *Technical Report*, The University of Manchester, 2006. <http://www.cs.man.ac.uk/~okutz/ontologies.pdf>
- **The Even More Irresistible SROIQ.**
I. Horrocks, O. Kutz, and U. Sattler. *Technical Report*, The University of Manchester, 2006. <http://www.cs.man.ac.uk/~okutz/sroi-q-TR.pdf>
- **The Irresistible SRIQ.**
I. Horrocks, O. Kutz, and U. Sattler. *Technical Report*, The University of Manchester, 2005. <http://www.cs.man.ac.uk/~okutz/sri-q-tr.pdf>

Publications about the Applicant

Several media have written about our work on computational creativity and related research projects and conferences.

The European project COINVENT has enjoyed broad media coverage. A summary can be found here https://www.coinvent.uni-osnabrueck.de/en/publicationsmedia/other_media_public_appearances.html

Interview with Academia, September 2017

<http://www.academia.bz.it/articles/wie-man-maschinen-das-nachdenken-beibringt>

The outcomes and relevance of the JOWO conference was discussed and published in an interview for Academia under the title ‘Wie man Maschinen das Nachdenken beibringt’.

Interview for the organisation of TriCoLore 2018, December 2018

<https://www.unibz.it/en/news/130572-koennen-roboter-kreativ-malen>

In connection with the organisation of the TriCoLore event (<https://tricolore.inf.unibz.it>), the intersection of robotics, human cognition and creativity, and ontology research was discussed in ‘Können Roboter kreativ sein?’.

Further Data

Invited Talks | International Lecturing | Outreach

August 2018 ESSLLI 2018 Lecturer. Course on ‘Logic, ontology and planning: the robot’s knowledge’ (with Stefano Borgo).

February 2018 Invited Speaker. International Symposium on Logic, Algebra and Category Theory (LAC 2018), Melbourne, Australia. <http://www2.math.kyushu-u.ac.jp/~lac2018/>

October 2017 Invited Speaker. International Conference on Computational Approaches to Diversity in Interaction and Meaning. An Interdisciplinary Conference Organised by the ESSENCE Network, 7th–9th October, 2017, San Servolo, Italy

September 2016 Invited Speaker. *From Computational Creativity to Creativity Science.* An International Conference at the ZiF Centre for Interdisciplinary Research, 19–22 September 2016, Bielefeld, Germany.

September 2016 LUNA 2016. Participation in the Long Night of Science (LUNA 2016), presenting the outcomes of the COINVENT project concerning computational creativity research to the general public, Bozen-Bolzano, September 30.

August 2016 ESSLLI 2016 Lecturer. Course on ‘The Distributed Ontology Language DOL’ (with Till Mossakowski).

June 2016 ISAO 2016. 3rd Interdisciplinary School on Applied Ontology, Bozen-Bolzano, June 27 – July 1, 2016. General Chair and Coordinator of Scientific Program.

April 2016 Invited tutorial on ‘Computational Analogy-Making, Concept Blending, and Related Forms of Non-Classical Reasoning’ at the FIERCES ON BICA 2016: First International Early Research Career Enhancement School on Biologically Inspired Cognitive Architectures.¹²

2014 Invited Speaker. Computational Creativity, Concept Invention, and General Intelligence, Workshop at ECAI 2014, 19th of August, 2014, Prague, Czech Republic.

¹²website: <http://easychair.org/smart-program/FIERCESONBICA2016/>

- 2013 Invited Tutorial** on ‘Connecting Logics’, 4th World Congress and School on Universal Logic, Rio de Janeiro, Brazil, March 29–April 7, 2013.¹³
- 2012 Invited Speaker.** 3rd World Congress on the Square of Opposition, Beirut, Lebanon, June 26–29, 2012.¹⁴
- 2012 Invited tutorial** on ‘ \mathcal{E} -Connections for Spatial Modelling’ at the 4th Indian School on Logic and its Applications, Manipal University, India, January 9–20, 2012.¹⁵
- 2011 Invited Speaker.** Symposium on Ontology between Philosophy and Computer Science (14th Congress of Logic, Methodology and Philosophy of Science, Nancy, July 19–26, 2011);
- 2011 Invited Speaker.** OASIS Symposium at ISWC 2011, Bonn, Germany.
- 2010 Invited Lecturer:** ESSLLI 2010 (*22nd European Summer School in Logic, Language and Information, Copenhagen, August 9–20, 2010*) advanced course entitled ‘Proof Complexity of Non-Classical Logics’ (with Olaf Beyersdorff, University of Leeds) (see <http://www.informatik.uni-bremen.de/~okutz/esslli10/>).

¹³website: <http://www.uni-log.org/start4.html>

¹⁴website: <http://www.square-of-opposition.org/start3.html>

¹⁵website: <http://ali.cmi.ac.in/isla2012/>