

Curriculum Vitæ: Dr Christoph LANGE

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Born 30 September, 1980 in Wittlich, Germany; Nationality: German

Honorary Research Fellow
School of Computer Science
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Short Statements

Myself: I am broadly interested in organising knowledge in a formal, structured way in order to get added value from it. I am a creative and diligent worker and networker, experienced in organising events to build and connect international scientific communities. New collaborations benefit from my diverse skills and connections.

My Research: I provide people (scientists, engineers, businesspersons) and organisations with methodologies and tools that enable them to organise their knowledge about their field in a structured way, so that they can • discover new relationships among their topics of interest, • have their assumptions validated automatically, and • publish their results in a comprehensible, convincing and reusable way.

Each section lists the most recent event/publication/office first. Hyperlinks to further information are used throughout (for on-screen viewing) but appear in printer-friendly black.

Studies and Research Positions

- from 3/2014 Senior researcher, Fraunhofer Institute for Intelligent Analysis and Information Systems, Germany; Organized Knowledge. Projects: Linked data based crime analysis (BMBF, public security – protection against organised crime; 2015–2017); development of a concept in the BMBF programme “innovations for municipalities and regions in demographic change” (2014–2015); enterprise linked data integration for WDR public broadcaster (2014).
- from 11/2013 Senior postdoc/research group leader, University of Bonn, Germany; Enterprise Information Systems (chair: Prof. Sören Auer). Projects: Opening Scholarly Communication in Social Sciences (DFG¹, Open Access Transformation, 2015–2017); WDAqua – Answering Questions using Web Data (EU H2020 Marie Skłodowska Curie ITN; 2015–2018; assistant coordinator); OpenAIRE2020 (EU H2020 e-Infrastructures; 2015–2018); SeReCo – Semantics, Reasoning and Coordination (Franco-German Doctoral College; 2015–2017); Diachron – Managing the Evolution and Preservation of the Data Web (EU FP7 ICT; 2013–2016).
- from 5/2012 Research fellow (from 11/2013: honorary research fellow), University of Birmingham, UK; EPSRC² project “Formal Representation and Proof for Cooperative Games: A Foundation for Complex Social Behaviour”. Principal investigators: Dr Manfred Kerber, Dr Colin Rowat – my specific achievement: leading research and organisation connecting the computer science and economics communities
- 6/2011–4/2012 Postdoctoral researcher, University of Bremen, Germany; member of the OntoIOp (Ontology Integration and Interoperability) ISO 17347 standardisation project team, EU FP7 Integrating Project OASIS (Open architecture for Accessible Services Integration and Standardisation). Principal investigators: Prof. Till Mossakowski, Prof. John Bateman – my specific achievement: ensured semantic web and linked data compliance, and thus scalability and decentral extensibility, of the standard
- 11/2010–8/2011 Coordinator (= research manager), Research Center for Advanced Systems Engineering (CASE), Jacobs University Bremen, Germany – my specific achievement: organised a retreat to interconnect the early career researchers within the Centre

¹German Research Foundation

²Engineering and Physical Sciences Research Council

- 11/2009–5/2011 Research associate funded by the DFG project LATIN (Logic Atlas and Integrator). Principal investigators: Prof. Michael Kohlhase (Jacobs University Bremen), Prof. Till Mossakowski (DFKI³ Bremen) – my specific achievement: specified and implemented a systematic model of how readers of formal mathematical publications can interact with web services
- 9/2006–3/2011 PhD studies in computer science at Jacobs University Bremen (formerly International University Bremen). Thesis: “Enabling Collaboration on Semiformal Mathematical Knowledge by Semantic Web Integration”; defended 3/2011, published in “Studies on the Semantic Web” (AKA/IOS) 10/2011, not graded. Committee: Prof. Michael Kohlhase, Prof. Peter Baumann (both Jacobs Univ.), Prof. Stefan Decker (National Univ. of Ireland, Galway; Digital Enterprise Research Institute)
- 4/2008–10/2008 visiting researcher at Digital Enterprise Research Institute, Galway, Ireland
- 10/2001–8/2006 studies in computer science (minor subject: mathematics) at the University of Trier, Germany, graduated with a Diploma degree (like MSc), mark “excellent, with distinction”
- 3/2004 pre-degree (Vordiplom), grade 1.1 on a scale from 1 (best) to 5 (worst)

Full Scholarships/Stipends (see below for other grants)

- 6/2007–8/2009 full PhD student scholarship from German National Academic Foundation⁴; funding included the 2008 visit to DERI Galway, Ireland (see above), and trips to several conferences
- 8/2006–6/2007 full PhD student scholarship from Jacobs University Bremen
- 4/2003–8/2006 full student scholarship from Konrad Adenauer Foundation
- 6/2004–8/2006 student scholarship from German National Academic Foundation

Research Experience and Awards

Selected Archival Publications (all with international peer-review):

- S. Vahdati, F. Karim, J.-Y. Huang, C. Lange: Mapping Large Scale Research Metadata to Linked Data: A Performance Comparison of HBase, CSV and XML. MeTadata and Semantics Research Conf., Springer CCIS, 2015.
- M. Caminati, M. Kerber, C. Lange, C. Rowat: Sound Auction Specification and Implementation. ACM Conf. Economics and Computation, 2015.
- J. Debattista, S. Londoño, C. Lange, S. Auer: Quality Assessment of Linked Datasets using Probabilistic Approximation. ESWC⁵, Springer LNCS⁶, 2015. **Nominated for best paper award.**
- N. Friesen, C. Lange: Semantische Suche in einer digitalen Bibliothek. Wie die Deutsche Digitale Bibliothek von semantischen Technologien profitiert. In Ege, Humm, Reibold: Corporate Semantic Web. Wie semantische Anwendungen in Unternehmen Nutzen stiften, Springer X.media.press, 2015.
- S. Vahdati, C. Lange, S. Auer: OpenCourseWare Observatory – Does the Quality of OpenCourseWare Live up to its Promise? ACM Conf. Learning Analytics and Knowledge, 2015.
- C. Lange, A. Di Iorio: Semantic Publishing Challenge. Assessing the Quality of Scientific Output. Semantic Web Evaluation Challenges at ESWC, Springer CCIS, 2014.
- C. Lange, M. Caminati, M. Kerber, T. Mossakowski, C. Rowat, M. Wenzel, W. Windsteiger: A Qualitative Comparison of the Suitability of Four Theorem Provers for Basic Auction Theory. CICM⁷, Springer LNCS, 2013.
- C. Lange: Ontologies and Languages for Representing Mathematical Knowledge on the Semantic Web. Semantic Web Journal (4.2), 2013.
- T. Mossakowski, O. Kutz, C. Lange: Three Semantics for the Core of the Distributed Ontology Language. FOIS⁸, IOS Press, 2012. **Best paper award**, ext'd abstract published in IJCAI⁹ 2013.
- J. Gičeva, C. Lange, F. Rabe: Integrating Web Services into Active Mathematical Documents. In Carotte/Dixon/Sacerdoti Coen/Watt: CICM, Springer LNCS, 2009.

³German Research Centre for Artificial Intelligence

⁴German: Studienstiftung des deutschen Volkes

⁵Extended (formerly: European) Semantic Web Conference

⁶Lecture Notes in Computer Science

⁷Conference on Intelligent Computer Mathematics

⁸Formal Ontology in Information Systems

⁹International Joint Conference on Artificial Intelligence

Invited Talks/Keynotes: Baltic DB&IS 2014; SFB/TR¹⁰ 8 Spatial Cognition, University of Bremen; Initiative for Computational Economics summer school 2012; Mathematisch-Naturwissenschaftlicher Unterricht¹¹ (MNU) 2008

Tutorials: 2× Linked Enterprise Data Integration (Fraunhofer IAIS executive training); Web Intelligence Summer School 2014; INFORMATIK 2013

Further Publications (mostly with international peer review; full list and details at <http://www.iai.uni-bonn.de/~langec/publications.pdf>):

Journals: Archive of Formal Proofs (2015); Applied Ontology (IOS, 2014); Networks and Systems Management (Springer, 2008)

Books: PhD thesis published in Studies on the Semantic Web series, IOS (see above)

Book chapters: Pellegrini, Sack, Auer: Linked Enterprise Data (Springer, 2014); Endres-Niggemeyer: Semantic Mashups – Intelligent Reuse of Web Resources (Springer, 2013); Rech/Decker/Ras: Emerging Technologies for Semantic Work Environments (IGI, 2008); Kohlhase: OMDoc – An open markup format for mathematical documents (Springer LNCS, 2006)

Conferences: Knowledge Engineering and Semantic Web 2015; CICM 2014, 2013, 2012, 2011, 2010; ESWC demo track 2011, 2010, 2008; SEMANTiCS/I-Semantics 2014, 2010; I-Know 2014 (poster); Workshop on Algebraic Development Techniques 2012; Terminology and Knowledge Engineering 2012; AEGIS¹² 2011; LaRC¹³ 2011; WebSci 2010 (poster)

Challenges: Elsevier Executable Papers 2011

Workshops etc.: Optimal Control and Dynamic Games 2015; Linked Data on the Web (WWW 2014); Automated Reasoning 2014, 2013 (invited paper); Linking and Contextualizing Publications and Datasets (Theory and Practice of Digital Libraries 2013, invited paper, CCIS proceedings); Enabling Domain Experts to use Formalised Reasoning (AISB¹⁴ 2013); Semantic Web in 10 Years from Now (ISWC¹⁵ 2012); Modular Ontologies (Logic Programming and Non-monotonic Reasoning 2013, invited paper; FOIS 2012); Mathematical Practice and Cognition (AISB/IACAP¹⁶ 2012); Semantic Publication (ESWC 2011) incl. LNCS post-proceedings; 3× Semantic Wiki (ESWC 2010, 2008, 2006); Ontology Repositories and Editors (ESWC 2010); 2× Knowledge and Experience Management (LWA¹⁷, German Society for Computer Science (GI), 2009, 2008); 2× AI Mashup Challenge (2010, 2009); JEM¹⁸ (ICWL¹⁹ 2009); 3× OpenMath (CICM 2010, 2009, 2007); Scripting for the Semantic Web (ESWC 2009); Social Data on the Web (ISWC 2008); 2× SCooP²⁰ (2008, 2007); 2× Mathematical User Interfaces (CICM 2008, 2007); Bridging the Gap between Semantic Web and Web 2.0 (ESWC 2007)

Standardisation Activities:

- “Distributed Ontology, Modeling and Specification Language (DOL)”. started 6/2011; answer to “Ontology, Model and Specification Integration and Interoperability (OntoIOP)” OMG Request For Proposals, 12/2014.

Research Grants (funding amount for my institution given, unless stated otherwise):

- € 170,300 from DFG programme Open Access Transformation, for a project on Opening Scholarly Communication in Social Sciences (with Sören Auer, University of Bonn, and Philipp Mayr, GESIS), 2015.
- € 13,750 from the Franco-German University (DFH-UFA), for a Web Intelligence summer school on Answering Questions (with Sören Auer, University of Bonn, and Pierre Maret, Université Jean Monnet, Saint-Étienne, France), 2015.
- € 616,250 from BMBF programme public security – protection against organised crime, for a project on Linked data based crime analysis (with Sören Auer, Fraunhofer IAIS), 2015.

¹⁰Transregional Collaborative Research Centre

¹¹Mathematical/Scientific Education

¹²Open Accessibility Everywhere: Groundwork, Infrastructure, Standards

¹³Terminology, Languages, and Content Resources

¹⁴Convention of the Society the Study of Artificial Intelligence and Simulation of Behaviour

¹⁵International Semantic Web Conference

¹⁶World Congress of the AISB and the International Association for Computing and Philosophy

¹⁷Lernen, Wissen, Adaption

¹⁸Joining Educational Mathematics

¹⁹International Conference on Web-based Learning

²⁰JEM Seminar on Scientific Communities of Practice

- € 414,383 from BMWi programme Smart Data – innovations from data, for a project on semantic analysis of complex events (with Sören Auer, Fraunhofer IAIS), 2015.
- € 1,245,433 from EU H2020, for Marie Skłodowska Curie ITN WDAqua – Answering Questions using Web Data (with Sören Auer, University of Bonn and Fraunhofer IAIS), 2014. University of Bonn is coordinator; overall budget € 3,855,922.
- € 133,000 from EU H2020 e-Infrastructures, for OpenAIRE2020 (with Sören Auer, University of Bonn), 2014.
- € 124,900 from the Franco-German University (DFH-UFA), for a Franco-German Doctoral College (with Sören Auer, University of Bonn and Fraunhofer IAIS, and Pierre Maret, Université Jean Monnet and École des Mines, Saint-Étienne, France), 2014.
- € 49,456 from BMBF programme innovations for municipalities and regions in demographic change, for developing a concept (with Sören Auer, University of Bonn), 2015.
- € 13,025 from the Franco-German University (DFH-UFA), for a Web Intelligence summer school on Web of Data (with Sören Auer, University of Bonn, and Pierre Maret, Université Jean Monnet, Saint-Étienne, France), 2014.
- Computer Science Small Grant, London Mathematical Society Scheme 7; £400 for collaborative research with Manfred Kerber (official applicant) and Marco B. Caminati (collaborator from Italy), 6–7/2013
- experienced with various further funding schemes of the EU (FET Open, Marie Curie Individual Fellowship), the London Mathematical Society, the DFG, the DAAD²¹, and IRCSET²².

Academic Self-Governance

2015	search committee on semantic retrieval (University of Bonn)
11/2014	ERC: reviewed a consolidator grant proposal
7/2014	Natural Artificial Intelligence programme, NWO ²³ : reviewed proposals
from 6/2013	technical editor of CEUR-WS.org open access publishing service; developer of ceur-make, a free collection of proceedings generation scripts, since 2012
11–12/2012	<u>M</u> athematical <u>K</u> nowledge <u>M</u> anagement <u>I</u> nterest <u>G</u> roup: election commissioner
from 7/2012	executive board of the OpenMath Society: member at large
from 1/2012	German National Academic Foundation: admission committee
7/2006–7/2003	University of Trier: elected student representative for computer science

Further Academic Service

(see above for invited talks and tutorials)

Journal Editorial Board Memberships: Web Semantics, International Journal on Semantic Web and Information Systems (IGI), Ontology Development and Applications (eSci Publishing)

Journal Special Issues Edited: Mathematics in Computer Science, “Enabling Domain Experts to use Formalised Reasoning” (Do-Form, 2014)

Organisation Committee Memberships:

Conferences: ESWC (2015, 2014; evaluation challenges track: semantic publishing challenge); Computer Science Conference for University of Bonn Students (2015: senior advisor; 2014: general chair); Ontology Summit 2014 (Big Data and Semantic Web Meet Applied Ontology; co-chair of Track B “Making use of Ontologies: Tools, Services, and Techniques”); CICM 2013 (systems & projects track chair)

Workshops etc.: Diachron @ ESWC 2015; 4× Semantic Publishing @ ESWC (2014, 2013, 2012, 2011); 3× OpenMath @ CICM (2013, 2012, 2010); Symposium “Enabling Domain Experts to use Formalised Reasoning” (Do-Form) @ AISB 2013; Ontologies Come of Age in the Semantic Web (OCAS) @ ISWC 2011; Mathematical Wikis @ ITP²⁴ 2011; Content Math Training Camp @ CICM 2010; 3×

²¹German Academic Exchange Service

²²Irish Research Council for Science, Engineering & Technology

²³Netherlands Organisation for Scientific Research

²⁴Interactive Theorem Proving

Semantic Wiki @ ESWC (2010, 2009, 2008); Ontology Repositories and Editors (ORES) and AI Mashup Challenge @ ESWC 2010; Knowledge and Experience Management @ LWA, German Society of Computer Science (GI), 2009

Programme Committee Memberships in addition to the above:

Conferences: 4× ISWC semantic web in use track (2015, incl. posters & demos; 2014, **best reviewer award**; 2013; 2012); 9× SEMANTiCS (formerly I-SEMANTICS; 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2007; 2015, 2013 incl. poster/demo track; 2014 incl. poster track; 2012 incl. PhD track); 5× **Web Intelligence, Mining and Semantics** (2015: Applications & Case Studies, 2014 incl. Applications & Case Studies, 2013, 2012, 2011); 2× **International Conf. on Web Engineering** (2015, doctoral symposium 2011); 3× ESWC (2015, 2014; ontologies track 2013); 3× **Building and Exploring Web Based Environments (WEB)**; 2015, 2014, 2013); WWW 2014 (poster track); **Formal Ontology in Information Systems** 2014; 4× CICM (systems & data track 2015; MKM track 2014; systems & projects track 2014, 2012, 2011); 3× **Balisage Markup Conf.** (2012, 2011, 2010)

Workshops etc.: **Negative or Inconclusive Results in Semantic Web @ ESWC** 2015; **Semantics, Analytics, Visualisation: Enhancing Scholarly Data @ WWW** 2015; 2× **Linked Data on the Web** (WWW 2015, 2014); **OpenMath @ CICM** 2014; **Linked Data Quality** (2014 @ SEMANTiCS); 3× **Semantic Web Collaborative Spaces** (2014 @ ISWC, 2013 @ ESWC, 2012 @ WWW); **Mathematical User Interfaces (MathUI) @ CICM** 2014; **Spontaneous and Ephemeral Social Networks @ Mobile & Wireless Networking** 2014; **Knowledge Discovery in Ontologies @ Web Intelligence Congress** 2014; 5× **Knowledge and Experience Management** (2014, 2013, 2012, 2011, 2010); **Workshop on Modular Ontologies @ Logic Programming and Non-Monotonic Reasoning** 2013; 4× **AI Mashup Challenge @ ESWC** (2014, 2013, 2012, 2011); **Semantic Repositories @ ISWC** 2010

External Reviews:

Journals: **Information Sciences** (2015); **Artificial Intelligence Tools** (2015); **Automated Reasoning** (2013); **Semantic Web and Information Systems** (2013); 2× **Applied Ontology** (2013, 2012); **Future Internet** (2012); **Central European J. of Computer Science** (2011); **Software Practice and Experience** (2011)

Conferences (selection): 3× ISWC (2014, 2011, 2008); **International Joint Conference on Automated Reasoning** 2012; ESWC 2012; **Conf. Logic for Programming, Artificial Intelligence and Reasoning** 2010; 3× CICM (2010, 2009, 2007); **International Symposium on Symbolic and Algebraic Computation** 2010

Teaching and Supervision Experience

2014/15	winter semester: in charge of lecture and exam, coordinated lab and seminar, semantic data web technologies for MSc in computer science, University of Bonn (9+9+4 ECTS credits); reviewed one MSc thesis
2014	summer semester: general chair of the Computer Science Conference for University of Bonn Students; supervising collaborative lab project work, enterprise information systems for MSc in computer science, University of Bonn
2013/14	winter semester: supervising collaborative lab project work, giving some of the lectures, semantic web technologies for MSc in computer science, University of Bonn (9+9 ECTS credits); reviewed one MSc thesis
2013–2015	co-supervised 4 PhD students at the University of Bonn
2013–2015	co-supervised 5 MSc students at the University of Bonn
2013–2015	co-supervised 3 student assistants at the University of Bonn
2013	spring term: lectures on version control and unit testing, marking collaborative project work; Team Java for 2 nd year BSc in computer science (developing software projects in small teams), University of Birmingham (10 ECTS credits)
2012	autumn term: creating homework and exam exercises, marking collaborative project work, supervising tutors; Java programming for MSc in computer science, University of Birmingham (20 ECTS credits)
2012	external reviewer of one MSc thesis at Jacobs University Bremen
2012	co-supervised one two-student programming project at the University of Bremen

2012–2011	co-supervised 3 student assistants at the University of Bremen
2010–2008	co-supervised one student assistant at Jacobs University Bremen
2011–2008	co-supervised 9 BSc theses at Jacobs University Bremen <ul style="list-style-type: none"> • 4 of them accepted at international conferences/workshops, 2 of them with archival proceedings (M. Cîrlănuaru 2011, J. Gičeva 2009) • graduates went on to: Vrije Universiteit Amsterdam (A. Dumitrache, BSc 2011), University of Cambridge (M. Cîrlănuaru, BSc 2011), Microsoft (C. David, BSc 2010, MSc at Jacobs University 2012), ETH Zürich (J. Gičeva, BSc 2009)
2011	co-supervised one undergraduate student's summer internship at DFKI Bremen
2008	co-supervised 2 undergraduate students' summer internships at DERI Galway
2007	co-supervised 2 undergraduate students' summer internships at Jacobs University Bremen
2007	spring and fall semester: creating and marking homework and exams; General Computer Science I/II lecture, Jacobs University Bremen (2×5 ECTS credits)

Memberships in Academic Societies

by appointment: OpenMath Society (since 2007)

other: Society for the Study of Artificial Intelligence and Simulation of Behaviour (AISB; since 2012), German Society of Computer Science (GI; since 2007)

Professional Work Experience

from 3/1998 authored numerous contributions to books and magazines of Computer- und Literaturverlag (C&L), a German IT publisher, including two articles explaining Semantic Web foundations to a non-scientific audience (freeX magazine 2/2012 and 1/2012); edited two books on wikis and blogs in 2005/06

Honorary Offices

9/2006–3/2008 Graduate Students Association at Jacobs University Bremen: secretary on the executive board, food committee representative

from 11/2003 Wikipedia: active participation (mainly German and English editions, administrator in the German edition (2004–2012), username Langec), reduced activity from 2006

Community Service (Zivildienst)

8/2000–6/2001 guest house of Himmerod Abbey, Rhineland-Palatinate, Germany

School Education

9/1991–6/2000 grammar school (Gymnasium), Wittlich, Germany; graduated with Abitur, GPA 1.0 on a scale from 1 to 5; successfully participated in Youth Research Competition (Jugend forscht) on regional/state level in 2000, 1998, 1997

Work-Related Skills

Languages: German (native; published in German technical magazines), English (highly proficient, fluent; PhD from an English-speaking university, worked in the UK), French (basic knowledge)

Computing:

Scientific Software: theorem provers (Isabelle/HOL: advanced; various first-order provers: basic), ontology editors (Protégé: advanced), computer algebra systems (Mathematica: intermediate)

Programming: object-oriented (Java: advanced; C/++/#: basic), scripting (Unix Shell: highly advanced; JavaScript: advanced; Perl, Python, Ruby: intermediate), XML processing (XSLT and XQuery: highly advanced), functional (Scala, ML: intermediate), logical (Prolog: basic), databases (SQL: intermediate), other (Lisp: basic)

Software Engineering: revision control (Subversion: highly advanced, including administration; git: intermediate), project management (Trac: highly advanced, incl. admin.; GitHub: advanced), build automation (make: advanced; ant: intermediate), testing (JUnit: intermediate), IDEs (Eclipse: advanced)

Publishing and Collaborative Authoring: document markup (L^AT_EX, HTML: advanced), wikis (MediaWiki: highly advanced, incl. admin.; several others: intermediate to advanced), content management (Drupal: intermediate)

Operating systems: Linux (highly advanced, incl. admin. and webmastering), Mac OS X (advanced), Windows up to 8 (advanced)

Other Skills and Interests

Music: choir (active university choir member 2006–2012), classical guitar, mandolin orchestra (member of state-level orchestras 2001–2008)

Youth Work: one-week course for youth workers (Jugendleiterkurs) taken in 2004, member of the national executive board of youths in the Association of German Plucked String Musicians (Bundesjugendleitung im Bund deutscher Zupfmusiker; 2002–2006)

Sports: hiking, rowing (vice president of Jacobs University Rowing Team 2007/08)

Misc.: German/European history and politics, Christianity, philosophy

References

... are available on request.

Bonn, 29th June 2015