

# Ingo Frommholz

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PhD (Dr. rer. nat.)  
Diplom-Informatiker  
FBCS, FHEA

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## Personal Information

Date and Place of Birth June 29, 1969 in Bochum-Wattenscheid, Germany  
Nationality German

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## Research

- Interested in Information Retrieval, Data Science and Digital Libraries, in particular
  - Formal methods for user-oriented information retrieval and access
  - Information retrieval based on quantum probabilities
  - Machine learning and information retrieval
  - Text categorization and clustering
  - Database and information retrieval integration
  - Application of information retrieval in, e.g., digital humanities, digital libraries, bibliometrics, recommender systems, augmented reality, data science and big data, cyberstalking detection
- University of Bedfordshire's PI of the EU H2020 ETN QUARTZ (2016-2020)
- Won the University of Bedfordshire's Rising Star/Research Investment Programme Award (2012)

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## Education

- 2012 **Postgraduate Certificate in Academic Practice (PgCAP)**, *University of Bedfordshire*, Luton, UK.  
60 credit Masters-level programme designed to both support and enhance the engagement of academic staff with their academic responsibilities.
- 2008 **PhD (Dr. rer. nat.) in Computer Science**, *University of Duisburg-Essen*, Duisburg, Germany.  
Thesis: *A Probabilistic Framework for Information Modelling and Retrieval Based on User Annotations on Digital Objects*. First examiner: Prof. Dr. Norbert Fuhr, 2nd examiner: Prof. Dr. Maristella Agosti. **German highest grade (summa cum laude)**.
- 2007 **Certificate in professional teaching competence in higher education**, *University of Duisburg-Essen*, Duisburg, Germany.  
The 200 hours training programme addressed teaching and learning, testing, advising and counselling, evaluating, and innovatively developing study programmes and teaching strategies.
- 2001 **Diploma in Computer Science (Diplom-Informatiker, MSc equivalent)**, *University of Dortmund*, Germany.  
Thesis: *Automatic categorisation of Web documents*. Examiner: Prof. Dr. Norbert Fuhr.  
Main courses during studies: Operating Systems, Computer Networks and Distributed Systems, Databases, Information Retrieval, Business Informatics. **German highest grade (1.0)**.

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## Professional Experience

- 12/2020–Present **Reader in Data Science**, *School of Mathematics and Computer Science, University of Wolverhampton, UK.*
- 02/2011–11/2020 **Lecturer/Senior Lecturer**, *Department of Computer Science and Technology, University of Bedfordshire, Luton, UK.*  
02/2011-07/2012 Lecturer, appointed Senior Lecturer 08/2012
- 2012–2018 **Search and Data Science Consultant**, *Self Employed, London, UK.*
- 11/2008–01/2011 **Postdoctoral Research Associate**, *Information Retrieval Group, School of Computing Science, University of Glasgow, Glasgow, Scotland.*
- 10/2004–10/2008 **Research Assistant**, *Information Systems Group, Faculty of Engineering Sciences, University of Duisburg-Essen, Duisburg, Germany.*
- 3/2006–4/2006 **Visiting researcher**, *Information Management Systems Research Group, University of Padua, Italy.*
- 3/2001–9/2004 **Research Assistant**, *Fraunhofer Integrated Publication and Information Systems Institute (IPSI), Darmstadt, Germany.*
- 11/1999–2/2001 **Software Developer**, *adesso GmbH, Dortmund, Germany.*  
Part time whilst at university.
- 5/1998–10/1999 **Software Developer**, *o.tel.o GmbH, Düsseldorf, Germany.*  
Part time whilst at university.
- 8/1994–4/1998 **Software Developer**, *Lion Ges. für Systementwicklung mbH, Bochum, Germany.*  
Part time whilst at university.

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## Research and Consultancy Projects

- 2016–2020 **QUARTZ**, *University of Bedfordshire, Luton, UK.*  
EU H2020 Marie Curie ITN European Training Network on quantum-based information access and retrieval. PI.
- 2016–2017 **EDISON**, *University of Bedfordshire, Luton, UK.*  
EU H2020 Coordination and Support Action with the purpose of accelerating the creation of the Data Science profession. UoB participates as Data Science Champion University, which I initiated.
- 2012–2018 **NotActivelyLooking.com**.  
Consultancy project on the design and implementation of a search engine for executives (in collaboration with industry partners). Principle investigator and main software developer.
- 2016–2017 **Wardown Park Talking Objects**, *University of Bedfordshire, Luton, UK.*  
Digital Humanities project combining augmented reality and conversational information retrieval (with Luton Culture). PI.
- 2015 **EduVocation**, *University of Bedfordshire, Luton, UK.*  
Teacher recruitment site and information system based on linked open data (UK Innovation Voucher). PI.
- 2013–2015 **Luton Culture World War I project**, *University of Bedfordshire, Luton, UK.*  
Digital Museum and Linked Data project on World War I in conjunction with Luton Museum (AHRC grant, PI).
- 2008–2011 **RENAISSANCE**, *University of Glasgow, Glasgow, UK.*  
EPSRC project on retrieval models based on the quantum theory framework. Main task: evaluation and further extension of an interactive retrieval framework inspired by quantum mechanics.
- 2010–2011 **QONTEXT**, *University of Glasgow, Glasgow, UK.*  
EU Marie Curie FP7-IRSES project on information retrieval and quantum theory. Contributed to the successful research proposal.
- 2008 **LACOSTIR**, *University of Duisburg-Essen, Duisburg, Germany.*  
German Research Foundation project on interactive retrieval. Main tasks: specification of a model for interactive retrieval.

- 2006–2007 **DELOS**, *University of Duisburg-Essen*, Duisburg, Germany.  
EU-FP6 Network of Excellence on Digital Libraries. Main task: design and integration of annotation services into the agent-based Daffodil framework.
- 2006 **KIIB**, *University of Duisburg-Essen*, Duisburg, Germany.  
EU-EUREGIO project on business processes and email classification, in collaboration with d.velop AG, Gescher, Germany. Main task: knowledge transfer, development of a study on email classification in a helpdesk scenario. Main contributor to the successful research proposal.
- 2004–2006 **CLASSIX**, *University of Duisburg-Essen*, Duisburg, Germany.  
German Research Foundation (DFG) project on classification and intelligent search on information in XML. Main task: specification and implementation of an annotation-based retrieval framework for structured documents based on probabilistic logics.
- 2004 **BRICKS**, *Fraunhofer IPSI*, Darmstadt, Germany.  
EU-FP6 integrated project on distributed resources for integrated cultural knowledge services. Main task: specification of annotation services.
- 2002–2003 **VIP-ADVISOR**, *Fraunhofer IPSI*, Darmstadt, Germany.  
EU-FP5 project (IST-2001-32440) on a virtual advisor for personal insurance and finance risk management. Main task: integration of case-based retrieval services for advisory dialogues.
- 2001–2003 **COLLATE**, *Fraunhofer IPSI*, Darmstadt, Germany.  
EU-FP5 project (IST-1999-20882) on the development of a collaboratory for annotation, indexing and retrieval of digitized historical archive material. Main task: design and implementation of context-based retrieval methods based on user annotations, of retrieval Web services and of research prototypes.
- 2001–2003 **SCHOLNET**, *Fraunhofer IPSI*, Darmstadt, Germany.  
EU-FP5 project (IST-1999-20664) on a digital library infrastructure for supporting communication and collaboration among networked scholarly communities. Main task: design and implementation of search user interfaces.

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## Invited Talks and Tutorials

- 2014–2019 **Information Retrieval and Foraging Autumn School**, Germany.  
Tutorial on information retrieval models.
- 2015 **CLEF 2015**, *Toulouse*, France.  
Invited talk about polyrepresentation in complex (book) search tasks at the 6th International Conference of the CLEF Association, Social Book Search Lab.
- 2012 **Information Retrieval Autumn School**, *Schloss Dagstuhl*, Germany.  
Tutorial on quantum probabilities and quantum information access and retrieval.
- since 2001 **Invited talks at seminars**.  
Several invited talks at university and industry seminars, e.g.: University of Glasgow; UCL London; Queen Mary, University of London; University of Nottingham; Signal AI, London; London Text Analytics Meetup; University of Cologne; University of Regensburg; University of Padua.

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## Research Related and Administrative Activities

### Examiner

- since 2019 Examiner for Deutsche Forschungsgemeinschaft (DFG, German Research Foundation)
- since 2020 External Examiner, University of Strathclyde, Glasgow, UK

### Chair and Senior PC Member, Mentoring

- 2019 **European Conference on Information Retrieval (ECIR 2019)**, *Cologne*, Germany.  
Publicity Chair.
- 2018 **European Conference on Information Retrieval (ECIR 2018)**, *Grenoble*, France.  
Publicity Chair.
- 2018 **ACM SIGIR International Conference on the Theory of Information Retrieval (IC-TIR 2018)**, *Tianjin*, China.  
Publicity Chair.
- 2016 **ACM/IEEE Joint Conference on Digital Libraries (JCDL 2016)**, *Newark*, NJ, USA.  
Publicity Chair.

- 2016 **International Conference on Theory and Practice of Digital Libraries (TPDL 2016)**, *Hannover, Germany*.  
Tutorial chair.
- 2015–2018 **IR workshops at Lernen–Wissen–Adaptivität (LWA-WIR)**.  
2009–2012 Programme chair of the IR workshops held by the IR Special Interest Group of the German Computing Society (GI) in 2009 (Darmstadt), 2010 (Kassel), 2011 (Magdeburg), 2012 (Dortmund), 2015 (Trier), 2016 (Potsdam).
- 2015 **European Conference on Information Retrieval (ECIR 2015)**, *Vienna, Austria*.  
Student mentor.
- 2015 **ACM/IEEE Joint Conference on Digital Libraries (JCDL 2015)**, *Knoxville, Tennessee, USA*.  
Senior PC member.
- 2014 **DL2014: ACM/IEEE Joint Conference on Digital Libraries (JCDL 2014) / International Conference on Theory and Practice of Digital Libraries (TPDL2014)**, *London, UK*.  
Senior PC member and chair of the best student paper committee. In 2014 JCDL and TPDL were held together as the International Digital Libraries Conference (DL2014).
- 2013 **International Conference on Theory and Practice of Digital Libraries (TPDL 2013)**, *Valletta, Malta*.  
Panel chair.
- 2012 **International Conference on Theory and Practice of Digital Libraries (TPDL 2012)**, *Cyprus*.  
Member of the metareview committee.
- 2011 **International Symposium on Quantum Interaction (QI 2011)**, *Aberdeen, Scotland*.  
Proceedings chair.
- 2010 **European Conference on Research and Advanced Technology for Digital Libraries (ECDL 2010)**, *Glasgow, Scotland*.  
Local chair.

### Organiser

- since 2020 **BIRDS – International Workshop on Bridging the Gap Between Information Science, Information Retrieval and Data Science**.  
Co-organiser of the interdisciplinary Information Science, Information Retrieval and Data Science workshop at SIGIR 2020 and CHIIR 2021.
- 2016–2020 **BCS Search Solutions**, *London, UK*.  
Co-organiser of the BCS Search Solutions Conference on Innovations in Search & Information Retrieval.
- since 2015 **BIR/BIRNDL – International Workshop on Bibliometric-enhanced Information Retrieval; The Joint Workshop on Bibliometric-enhanced Information Retrieval and Natural Language Processing for Digital Libraries**.  
Co-organiser of the workshop series held at ECIR, JCDL and SIGIR conferences 2015–2021. Guest editor of corresponding special issues at IJDL and Scientometrics.
- 2017–2019 **FDIA – Future Directions in Information Access**.  
Co-organised a 1-day symposium for PhD students in Information Retrieval. 2017 (Barcelona, Spain), 2018 (Tianjin, China), 2019 (Milan, Italy).
- 2019 **TALMIRI – TALent Meets Information Retrieval Industry**, *Luton, UK*.  
Organised a 1-day symposium to bring together academia and industry.
- 2014–2019 **Information Retrieval and Foraging Autumn School**, *Germany*.  
Co-organiser of annual one week schools on selected information foraging and retrieval topics (2014, 2016–2019 at Schloß Dagstuhl, Germany, 2015 at Castle Katlenburg, Germany)
- 2006 **Heterogeneous Track at the Initiative for the Evaluation of XML Retrieval**.  
Co-organiser of the INEX 2006 Heterogeneous Track.

### Editorial Board, Managing Editor and Guest Editor

- since 2009 **Datenbank-Spektrum Journal**.  
Member of the editorial board of Datenbank-Spektrum, the joint journal of the German special interest groups on databases resp. information retrieval.

- since 2001 **International Journal on Digital Libraries (IJDL).**  
 Managing editor and member of the editorial board of IJDL. Main responsibilities include supervising the whole reviewing life cycle of incoming submissions, including editor and reviewer assignments, and editorial activities.
- 2011 **Guest Editor IJDL Focussed Issue on ECDL 2010.**
- 2017 **Guest Editor IJDL Focussed Issue on Bibliometrics and Information Retrieval.**
- 2018–2020 **Guest Editor of several Scientometrics Special Issues on Bibliometrics and Information Retrieval.**

### Programme Committee and Reviewer

- since 2004 Member of the programme committee and reviewer at the following conferences and workshops: ACM SIGIR, ACM CIKM, ACM/IEEE JCDL, ACM ICTIR, ACM CHIIR, ACL, WWW, ECIR, ECDL/TPDL, IliX, Russian IR Summer School, Quantum Interaction, TIR, KDIR, LWA, LSHC, AIRS, HPCS.
- Reviewer for several journals such as ACM Transactions on Information Systems (TOIS), Elsevier Information Systems, Elsevier Information Processing & Management (IP&M), The Journal of the American Society for Information Science and Technology (JASIST), The Information Retrieval Journal (Springer), The Computer Journal, PLOS ONE, Theoretical Computer Science (Elsevier), Scientometrics (Springer) and The International Journal on Digital Libraries (Springer).

### Administrative and Steering Activities

- 2018–2020 **Information and Data Science Subject Cluster Lead**, *University of Bedfordshire*, Luton, UK.  
 Coordinating the Information and Data Science research and teaching activities.
- 2017–2018 **BCS Accreditation**, *University of Bedfordshire*, Luton, UK.  
 Coordinated the successful BCS accreditation application of undergraduate and postgraduate computer science programmes taught at the University of Bedfordshire.
- 2016 **VC's Research & Enterprise Sub Group**, *University of Bedfordshire*, Luton, UK.  
 Member of the Vice Chancellor's sub group to shape the university's research and enterprise strategy.
- 2013–2014 **Data Science Programme Approval**, *University of Bedfordshire*, Luton, UK.  
 Responsible for the design and specification of the successfully approved undergraduate BSc (Hons) Data Science programme at the University of Bedfordshire, including the design and specification of a module on Data Engineering and Retrieval.
- 2013 – 2015 **Staff Representative**, *University of Bedfordshire*, *Institute for Research in Applicable Computing (IRAC)*, Luton, UK.  
 Elected staff representative in the IRAC steering committee.
- 2013–2015 **Deputy Head**, *IRAC Centre for Research in Distributed Technologies (CREDIT)*, *University of Bedfordshire*, Luton, UK.
- since 2011 **Steering Committee, The Chartered Institute for IT (BCS) Information Retrieval Specialist Group.**  
 Elected member of the steering committee and treasurer of the BCS IRSG.
- 2008–2018 **Steering Committee, German Computing Society Information Retrieval Special Interest Group.**  
 Elected member of the steering committee of the IR Special Interest Group of the German Computing Society (Fachgruppe Information Retrieval der Gesellschaft für Informatik).

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### Professional Bodies

- since 2014 **BCS Fellow (FBCS).**
- since 2016 **ACM Member (ACM SIGIR).**
- since 2012 **Fellow of the Higher Education Academy (FHEA).**
- since 2016 **Member of the Engineering Professors' Council (EPC).**

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## Teaching Experience

### Course/Programme Co-ordinator

- since 2021 **MSc Data Science**, *University of Wolverhampton*, UK.  
Co-ordinator of the MSc Data Science online programme.
- 2016–2020 **BSc (Hons) Information and Data Systems**, *University of Bedfordshire*, Luton, UK.  
Co-ordinator of the BSc Information and Data Systems programme at the School of Computer Science and Technology of the University of Bedfordshire.
- 2014–2019 **BSc (Hons) Computing and Data Science**, *University of Bedfordshire*, Luton, UK.  
Co-ordinator of the BSc Computing Data Science programme at the School of Computer Science and Technology of the University of Bedfordshire.
- 2011–2014 **BSc (Hons) Information Systems**, *University of Bedfordshire*, Luton, UK.  
Co-ordinator of the BSc Information Systems programme at the School of Computer Science and Technology of the University of Bedfordshire.
- 2011–2014 **BSc (Hons) Business Information Systems**, *University of Bedfordshire*, Luton, UK.  
Co-ordinator of the BSc Business Information Systems programme at the School of Computer Science and Technology of the University of Bedfordshire (held in conjunction with the UoB Business School).

### Module Co-ordinator and Lecturer

- since 2020 **Databases and Security**, *University of Wolverhampton*, UK.  
Module co-ordinator; delivering lectures on relational and NoSQL databases; responsible for organising laboratory sessions, student assignments and the general assessment of student progress
- 2019–2020 **Data Retrieval, Engineering and Visualisation**, *University of Bedfordshire*, Luton, UK.  
Module co-ordinator; delivering lectures on information and data retrieval, digital libraries and repositories; responsible for organising laboratory sessions, student assignments and the general assessment of student progress; 3rd year undergraduate module
- 2013–2020 **Advanced IT Strategies and Paradigms**, *University of Bedfordshire*, Luton, UK.  
Module co-ordinator; delivering lectures on information retrieval, XML and ontologies; responsible for organising laboratory sessions, student assignments and the general assessment of student progress; 3rd year undergraduate module.
- 2013–2020 **Principles of Programming and Data Structures**, *University of Bedfordshire*, Luton, UK.  
Module co-ordinator; designing and delivering lectures on Java programming; responsible for organising laboratory sessions, student assignments and the general assessment of student progress; 1st year undergraduate module.
- 2011–2016 **(Advanced) Data Modelling and Management**, *University of Bedfordshire*, Luton, UK.  
Module co-ordinator; designing and delivering lectures on UML, databases and data modelling; responsible for organising laboratory sessions, student assignments and the general assessment of student progress; postgraduate module. Responsible for delivery of lectures at partner college in Oman.
- 2014–2016 **Grid Services and Distributed Networking**, *University of Bedfordshire*, Luton, UK.  
Module co-ordinator; designing and delivering lectures on XML, Web Services, Hadoop, grid computing and cloud computing; responsible for organising laboratory sessions, student assignments and the general assessment of student progress; postgraduate module taught at partner college in Oman.
- 2007 **Information Engineering**, *University of Duisburg-Essen*, Duisburg, Germany.  
Module co-ordinator; design and delivery of lectures and tutorials on methods, concepts and systems supporting the information life cycle (creation, management, dissemination and processing), which comprised authoring systems, metadata, databases, information and process modelling, digital preservation, access management, digital libraries and information seeking and retrieval; postgraduate module.

### Lecturer

- since 2017 **Intelligent Systems and Data Mining**, *University of Bedfordshire*, Luton, UK.  
Designing and delivering lectures on semantic search and ontology; responsible for organising laboratory sessions, student assignments and the general assessment of student progress; postgraduate module.

- since 2017 **Mathematics of Data**, *University of Bedfordshire*, Luton, UK.  
Designing and delivering on statistical data analysis; responsible for organising laboratory sessions, student assignments and the general assessment of student progress; 1st year undergraduate module.
- 2011–2016 **Distributed and Parallel Computing**, *University of Bedfordshire*, Luton, UK.  
Designing and delivering lectures on distributed computing, grid computing and cloud computing; responsible for organising laboratory sessions, student assignments and the general assessment of student progress; postgraduate module.
- 2011–2013 **Programming and Modelling**, *University of Bedfordshire*, Luton, UK.  
Designing and delivering lectures on Java programming; responsible for organising laboratory sessions, student assignments and the general assessment of student progress; 1st year undergraduate module.
- 2010/11 **Distributed Information Management / Information Technology**, *University of Glasgow*, Glasgow, UK.  
Delivered and designed lectures on XML; postgraduate and 3rd year undergraduate module.
- 2010/11 **General Readings in Computer Science**, *University of Glasgow*, Glasgow, UK.  
Marking students' presentations; postgraduate module.
- 2006–2008 **Modelling Methods in Computer Science**, *University of Duisburg-Essen*, Duisburg, Germany.  
Delivered and designed tutorials and occasional lectures; exam marking; undergraduate module.
- 2008 **Information Retrieval**, *University of Duisburg-Essen*, Duisburg, Germany.  
Delivered and designed tutorials and lectures; postgraduate module.
- 2008 **Information Mining**, *University of Duisburg-Essen*.  
Delivered and designed tutorials and lectures; postgraduate module.

### Thesis Supervision and Mentoring

- 2011–2015 **A Probabilistic Approach for Cluster Based Interactive Information Retrieval**, *University of Bedfordshire*, UK.  
Director of studies of the successful PhD thesis of Dr Kamran Abbasi.
- 2013–2017 **A Methodology for Contextual Recommendation using Artificial Neural Networks**, *University of Bedfordshire*, UK.  
Director of studies of the successful PhD thesis of Dr Mustafa Ghulam.
- 2012–2020 **A Conceptual Framework to Support Cross-cultural User Experience Design for Web Search**, *University of Bedfordshire*, UK.  
Director of Studies of the PhD thesis of MSc Karen Chessum.
- 2011–2015 **A Framework for Evaluating e-Government Success**, *University of Bedfordshire*, UK.  
2nd supervisor of the successful PhD thesis of Dr Obaid Almalki.
- 2012–2018 **A Computer Assisted Analysis of Literary Text: From Feature Analysis To Judgements of Literary Merit**, *University of Bedfordshire*, UK.  
2nd supervisor of the successful PhD thesis of Dr Tess Crosbie.
- since 2018 **A Quantum Model for Interactive Search and Retrieval based on Information Foraging Theory**, *University of Bedfordshire*, UK.  
2nd supervisor of the PhD thesis of Amit Kumar Jaiswal.
- since 2012 **A Novel Linked Data Powered Recommendation System for the Cultural Heritage Domain (working title)**, *University of Bedfordshire*, UK.  
Director of studies of the PhD thesis of MSc Nick Collis (part time).
- since 2017 **Interactive Personalised Image Search (working title)**, *University of Bedfordshire*, UK.  
2nd supervisor of the PhD thesis of MSc Mohammed Mahmoud Artemi.
- 2014–2020 **Information Retrieval in Translational Bioinformatics (a novel framework)**, *University of Bedfordshire*, UK.  
2nd supervisor of MSc Faris Abomelha.
- 2017–2018 **Developing and Evaluating a Cost-effective Solution for Augmented Reality Conversational Agents for Museums**, *University of Bedfordshire*, UK.  
Director of studies of the successful MSc by Research project of MSc Sebastian Grygiel.

- 2017–2020 **Use of machine learning to reduce false fire alarms**, *University of Bedfordshire*, UK.  
Director of studies of the MSc by Research project of BSc (Hons) Usman Ali.
- 2011–2012 **Balancing Exploration and Exploitation in Learning to Rank Online**, *University of Amsterdam*, The Netherlands.  
In the context of the ECIR 2011 student mentoring program I was appointed the mentor of Dr Katja Hofmann's successful PhD thesis.
- 2010–2011 **Cognitive IR models for patent search**, *University of Glasgow*, Glasgow, UK.  
I have been assisting in supervising the successful PhD of Dr. Erik Graf about human information processing and information retrieval (supervisor: M. Lalmas).
- since 2011 **MSc and BSc project supervision**, *University of Bedfordshire*, Luton, UK.  
I have been supervising several MSc and BSc projects on information retrieval and high-throughput computing, personal digital assistants, business information systems, distributed systems and computer networks.
- 2008–2009 **Email-based Expert Search for Helpdesks**, *University of Duisburg-Essen*, Duisburg, Germany.  
Diploma (master) thesis of Dipl.-Inform. Evgenia Nikiforova
- 2008–2009 **Annotations in Daffodil**, *University of Duisburg-Essen*, Duisburg, Germany.  
Bachelor thesis of BSc Simeon Gerenski.
- 2008 **Multifacet-Classification of Emails in a Helpdesk Scenario**, *University of Duisburg-Essen*, Duisburg, Germany.  
Diploma (master) thesis of Dipl.-Inform. Thomas Beckers
- 2007 **Sentiment Classification in Discussions**, *University of Duisburg-Essen*, Duisburg, Germany.  
Diploma (master) thesis of Dipl.-Inform. Marc Lechtenfeld, now PhD student at the University of Duisburg-Essen.
- 2004 **A dynamic, context-based Retrieval Web Service**, *Darmstadt University of Technology*, Darmstadt, Germany.  
Diploma (master) thesis of Dipl.-Inform. Thomas Fritz.
- 2002 **Context-based Retrieval with Discourse Structure Relations**, *Darmstadt University of Technology*, Darmstadt, Germany.  
Diploma (master) thesis of Dipl.-Inform. Gaby Lang.

### PhD and MSc by Research Examiner/Reviewer

- 2019 **External examiner Ph.D Thesis “Language-Independent Methods for Identifying Cross-Lingual Similarity in Wikipedia” by Monica Paramita**, *University of Sheffield*, Sheffield, UK.
- 2016 **Internal examiner Ph.D Thesis “Using Social Media for Supporting Decision-Making in Managing Public Relations: The Case of Abu Dhabi Police” by Mansour Alkhyeli**, *University of Bedfordshire*, Luton, UK.
- 2015 **External examiner Ph.D Thesis “Co-occurrence Rate Networks – An alternative theory for undirected graphical models” by Zheming Zhu**, *University of Twente*, Enschede, The Netherlands.
- 2015 **External reviewer Ph.D Thesis “Semantic Models for Question Answering” by Piero Molino**, *Dipartimento di Informatica, Università Degli Studi Di Bari Aldo Moro*, Bari, Italy.
- 2018 **External examiner MRes “User Engagement with Generous Interfaces for Digital Cultural Heritage” by Rob Speakman**, *Edge Hill University*, Ormskirk, UK.

### Technical Skills

Platforms	Mac OS X, Linux, Solaris, Windows, MS-DOS, AIX, AmigaOS	Programming Languages	Java, Perl, PHP, Python, R, C, Unix Shell (Bash, sh), Prolog, SQL, PL/SQL, Scheme, Modula 2, Assembler (M6510 (C64), MC68000 (Amiga)), Basic
Databases	MySQL, Oracle, Informix	Markup	HTML, XML, XML schema, RDF(S), OWL



Information Retrieval MG4J, HySpirit, probabilistic Datalog, Solr/Lucene, Terrier, FAST

Tools Hadoop, J2EE, Eclipse, Jetty, Apache Tomcat, Apache Web server, Oracle Forms, Cyrus IMAP server, L<sup>A</sup>T<sub>E</sub>X, CVS, SVN, GIT, Maven, Protégé, Microsoft Office, Open Office, Inkscape

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## Own Software Projects

- POLAR Prototype of an object-oriented logic-based probabilistic framework for annotation-based document retrieval and discussion search, based on probabilistic Datalog.
- JaySpirit Java API for the HySpirit retrieval framework (which is written in Perl and C). Available at <https://github.com/ifromm/jayspirit>.
- Executive Search Java implementation (Web service, middleware) of a search engine for executives, combining database and retrieval technology.
- Daffodil I was responsible for the annotation services in the Daffodil system.
- COLLATE I designed and implemented the search and retrieval module in the COLLATE prototype.
- Further Projects During my time as a software developer I was responsible for the design and implementation of several software modules in different projects. In my consultancy projects I develop advanced search services.

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## Languages

German **native**  
English **fluent**

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## Publications

### Refereed Publications

Nicholas Collis and Ingo Frommholz. AQUACOLD: A Novel Crowdsourced Linked Data Question Answering System. In *Proceedings Second Workshop on Bridging the Gap between Information Science, Information Retrieval and Data Science (BIRDS 2021)*, 2021.

Nicholas Collis and Ingo Frommholz. Crowdsourced Linked Data Question Answering with AQUACOLD. In *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL 2021)*. ACM, 2021.

Amit Kumar Jaiswal, Haiming Liu, and Ingo Frommholz. Reinforcement Learning-driven Information Seeking: A Quantum Probabilistic Approach. In Ingo Frommholz, Haiming Liu, and Massimo Melucci, editors, *Proceedings First Workshop on Bridging the Gap between Information Science, Information Retrieval and Data Science (BIRDS 2020)*, pages 16–29. CEUR-WS.org, 2020.

Amit Kumar Jaiswal, Haiming Liu, and Ingo Frommholz. Utilising Information Foraging Theory for User Interaction with Image Query Auto-Completion. In *Proceedings European Conference on Information Retrieval (ECIR 2020)*. Springer, 2020.

Amit Kumar Jaiswal, Haiming Liu, and Ingo Frommholz. Effects of Foraging in Personalized Content-based Image Recommendation. In *Proceedings of the 2nd International Workshop on Explainable Recommendation and Search (EARS 2019) at SIGIR 2019*, 2019.

Amit Kumar Jaiswal, Haiming Liu, and Ingo Frommholz. Information Foraging for Enhancing Implicit Feedback in Content-based Image Recommendation. In *Proceedings of the 11th Forum for Information Retrieval Evaluation (FIRE 2019)*, pages 65–69, Kolkata, India, 2019. ACM.

Amit Kumar Jaiswal, Guilherme Holdack, Ingo Frommholz, and Haiming Liu. Quantum-like Generalization of Complex Word Embedding: a lightweight approach for textual classification. In *Proceedings Lernen Wissen Daten Analysen (LWDA 2018)*, 2018.

Waleed Alabbas, Haider Al-Khateeb, Ali Mansour, Gregory Epiphaniou, and Ingo Frommholz. Classification of Colloquial Arabic Tweets in real-time to detect high-risk floods. In *Proceedings International Conference on Social Media, Wearable and Web Analytics (Social Media 2017)*. IEEE, 2017.

Nick Collis and Ingo Frommholz. Aquacold – a crowdsourced query understanding and query construction tool for the linked data web. In Philipp Mayr, Douglas Tudhope, Koraljka Golub, Christian Wartena, and Ernesto William De Luca, editors, *Proc. of the 17th European Networked Knowledge Organization Systems Workshop (NKOS 2017) at TPD 2017*, pages 74–86, Thessaloniki, Greece, 2017. CEUR-WS.org.

Ingo Frommholz, Haider Al-Khateeb, Martin Potthast, Zinnar Ghasem, Mitul Shukla, and Emma Short. On textual analysis and machine learning for cyberstalking detection. *Datenbank-Spektrum*, 16(2):127–135, 2016.

Ingo Frommholz and Thomas Roelleke. Scalable DB+IR technology: Processing probabilistic datalog with HySpirit. *Datenbank-Spektrum*, 16(1):39–48, 2016.

Ghulam Mustafa and Ingo Frommholz. Comparing contextual and non-contextual features in ANNs for movie rating prediction. In Ralf Krestel, Davide Mottin, and Emmanuel Müller, editors, *Proceedings of the Conference "Lernen, Wissen, Daten, Analysen", Workshop Information Retrieval*, Potsdam, Germany, 2016. CEUR-WS.org.

Muhammad Kamran Abbasi and Ingo Frommholz. Cluster-based polyrepresentation as science modelling approach for information retrieval. *Scientometrics*, 102(3):2301–2322, 2015.

Muhammad Kamran Abbasi and Ingo Frommholz. Polyrepresentative clustering: A study of simulated user strategies and representations. In Philipp Mayr, Ingo Frommholz, and Peter Mutschke, editors, *Proc. of the 2nd Workshop on Bibliometric-enhanced Information Retrieval (BIR2015)*, pages 47–54, Vienna, Austria, 2015. CEUR-WS.org.

Zinnar Ghasem, Ingo Frommholz, and Carsten Maple. A Machine Learning Framework to Detect And Document Text-based Cyberstalking. In Claus-Peter Klas and Ingo Frommholz, editors, *Proceedings Information Retrieval Workshop at Lernen-Wissen-Adaptivität (LWA 2015)*, number October, pages 348–355, Trier, Germany, 2015. CEUR-WS.org.

Zinnar Ghasem, Ingo Frommholz, and Carsten Maple. A hybrid approach to combat email-based cyberstalking. In *The Fourth International Conference on Future Generation Communication Technologies (FGCT 2015)*, pages 106–111, Luton, UK, 2015. IEEE.

Zinnar Ghasem, Ingo Frommholz, and Carsten Maple. Machine learning solutions for controlling cyberbullying and cyberstalking. *Journal of Information Security Research*, 6(2):55–64, 2015.

Zinnar Ghasem, Ingo Frommholz, and Carsten Maple. A new approach for selecting informative features for text classification. In Claus-Peter Klas and Ingo Frommholz, editors, *Proceedings Information Retrieval Workshop at Lernen-Wissen-Adaptivität (LWA 2015)*, number October, pages 382–389, Trier, Germany, 2015. CEUR-WS.org.

Ghulam Mustafa and Ingo Frommholz. Performance comparison of Top N recommendation algorithms. In *The Fourth International Conference on Future Generation Communication Technologies (FGCT 2015)*, pages 100–105, Luton, UK, 2015. IEEE.

Muhammad Kamran Abbasi and Ingo Frommholz. Exploiting information needs and bibliographics for polyrepresentative document clustering. In *Proceedings of the Bibliometrics-enhanced Information Retrieval Workshop at ECIR 2014*, pages 21–28, 2014.

Karen Chessum, Haiming Liu, and Ingo Frommholz. Applying cross-cultural theory to understand users' preferences on interactive information retrieval platform design. In *Proceedings euroHCIR 2014*, 2014.

Ingo Frommholz and Muhammad Kamran Abbasi. On clustering and polyrepresentation. In *Proceedings of the European Conference on Information Retrieval (ECIR 2014)*, pages 618–623, 2014.

Ingo Frommholz, David Graves, Haiming Liu, Ashwin Kumar, and Gordon Brady. Great War stories told by the people – crowdsourced cultural heritage in digital museums. In *Proceedings Digital Libraries 2014 (ACM/IEEE Joint Conference on Digital Libraries (JCDL 2014) and International Conference on Theory and Practice of Digital Libraries (TPDL 2014))*, pages 419–420, 2014.

Obaid Almalki, Yanqing Duan, Ingo Frommholz, and Markus Haag. Identifying the Relevance of Personal Values to e-Government Portals' Success: Insights from a Delphi Study. In *Proc. of the International Conference on Information and Social Science (ISS 2013)*, pages 97–112, 2013.

Birger Larsen, Christina Lioma, Ingo Frommholz, and Hinrich Schütze. Preliminary study of technical terminology for the retrieval of scientific book metadata records categories and subject descriptors. In *SIGIR 2012: Proceedings of the 35th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval*, pages 1131–1132, August 2012.

Obaid Almalki, Janqing Duan, and Ingo Frommholz. An exploratory study on e-government systems success in Saudi Arabia. In *Proceedings of the 12th European Conference on eGovernment (ECEG 2012)*, pages 38–46, July 2012.

Ingo Frommholz, Benjamin Piwowarski, Mounia Lalmas, and Keith van Rijsbergen. Processing queries in session in a quantum-inspired IR framework. In *Proceedings of the 33rd European Conference on IR Research (ECIR 2011)*, pages 751–754. Springer, 2011. **Nominated for best poster award.**

Fabrizio Smeraldi, Miguel Martinez-Alvarez, Ingo Frommholz, and Thomas Roelleke. Logical modelling of quantum- and geometrically-inspired IR. In *Proceedings of the 2nd Italian Information Retrieval (IIR) Workshop*, 2011.

David Zellhöfer, Ingo Frommholz, Ingo Schmitt, Mounia Lalmas, and Keith van Rijsbergen. Towards quantum-based DB+IR processing based on the principle of polyrepresentation. In *Proceedings of the 33rd European Conference on IR Research (ECIR 2011)*, pages 729–732. Springer, 2011. **Nominated for best poster award.**

Benjamin Piwowarski, Ingo Frommholz, Mounia Lalmas, and Keith Van Rijsbergen. What can quantum theory bring to information retrieval? In *Proc. 19th International Conference on Information and Knowledge Management (CIKM 2010)*, pages 59–68, October 2010.

Dawei Song, Mounia Lalmas, Keith van Rijsbergen, Ingo Frommholz, Benjamin Piwowarski, Jun Wang, P Zhang, Guido Zuccon, Peter Bruza, Sachi Arafat, Leif Azzopardi, Alvaro Huertas-Rosero, Y Hou, Massimo Melucci, and Stefan Rüger. How quantum theory is developing the field of information retrieval. In *Proceedings Quantum Interaction 2010*, October 2010.

Ingo Frommholz, Birger Larsen, Benjamin Piwowarski, Mounia Lalmas, Peter Ingwersen, and Keith van Rijsbergen. Supporting polyrepresentation in a quantum-inspired geometrical retrieval framework. In *Proceedings of the 2010 Information Interaction in Context Symposium*, pages 115–124, New Brunswick, August 2010. ACM. **Shortlisted for best paper award.**

Benjamin Piwowarski, Ingo Frommholz, Mounia Lalmas, and Keith van Rijsbergen. Exploring a multidimensional representation of documents and queries. In *Proceedings of the 9th RIAO Conference (RIO 2010)*, Paris, France, June 2010.

Benjamin Piwowarski, Ingo Frommholz, Yashar Moshfeghi, Mounia Lalmas, and Keith van Rijsbergen. Filtering documents with subspaces. In *Proceedings of the 32nd European Conference on Information Retrieval (ECIR 2010)*, pages 615–618, January 2010. **Best poster award!**

Erik Graf, Ingo Frommholz, Mounia Lalmas, and Keith van Rijsbergen. Knowledge modeling in prior art search. In Hamish Cunningham, Allan Hanbury, and Stefan Rüger, editors, *Proceedings of the First Information Retrieval Facility Conference, IRFC 2010*, volume 6107 of *Lecture Notes in Computer Science*, pages 31–46, Berlin, Heidelberg, 2010. Springer Berlin Heidelberg.

Thomas Beckers, Ingo Frommholz, and Ralf Bönning. Multi-facet classification of e-mails in a helpdesk scenario. In Thomas Mandl and Ingo Frommholz, editors, *Proc. of the GI Information Retrieval Workshop at LWA 2009*, 2009.

Ingo Frommholz and Keith Van Rijsbergen. Towards a geometrical model for polyrepresentation of information objects. In Thomas Mandl and Ingo Frommholz, editors, *Proc. of the GI Information Retrieval Workshop at LWA 2009*, 2009.

Ingo Frommholz and Marc Lechtenfeld. Determining the polarity of postings for discussion search. In *Proc. of the "Information Retrieval 2008" Workshop at LWA 2008, Würzburg, Germany*, October 2008.

Norbert Fuhr, Matthias Jordan, and Ingo Frommholz. Combining cognitive and system-oriented approaches for designing IR user interfaces. In *Proceedings of the 2nd International Workshop on Adaptive Information Retrieval (AIR 2008)*, October 2008.

Ingo Frommholz. Annotation-based document retrieval with probabilistic logics. In Norbert Fuhr, Laszlo Kovacs, and Carlo Meghini, editors, *Research and Advanced Technology for Digital Libraries. Proc. of the 11th European Conference on Digital Libraries (ECDL 2007)*, Lecture Notes in Computer Science, pages 321–332, Heidelberg et al., September 2007. Springer.

Ingo Frommholz and Norbert Fuhr. Evaluation of relevance and knowledge augmentation in discussion search. In Julio Gonzalo, Costantino Thanos, M Felisa Verdejo, and Rafael C Carrasco, editors, *Research and Advanced Technology for Digital Libraries. Proc. of the 10th European Conference on Digital Libraries (ECDL 2006)*, Lecture Notes in Computer Science, pages 279–290, Heidelberg et al., September 2006. Springer.

Maristella Agosti, Nicola Ferro, Ingo Frommholz, Emanuele Panizzi, Wolfgang Putz, and Ulrich Thiel. Integration of the DiLAS annotation service into digital library infrastructures. In Ann Blandford and Jeremy Gow, editors, *Proc. Digital Libraries in the Context of Users' Broader Activities Workshop (CUBA) at JCDL 2006*, June 2006.

Ingo Frommholz and Norbert Fuhr. Probabilistic, object-oriented logics for annotation-based retrieval in digital libraries. In Michael Nelson, Cathy Marshall, and Gary Marchionini, editors, *Proc. of the 6th ACM/IEEE Joint Conference on Digital Libraries (JCDL 2006)*, pages 55–64, New York, 2006. ACM.

Ingo Frommholz. What did the others say? Probabilistic indexing and retrieval models in annotation-based discussions. *TCDL Bulletin*, 2(2), 2006.

Maristella Agosti, Hanne Albrechtsen, Nicola Ferro, Ingo Frommholz, Preben Hansen, Nicola Orio, Emanuele Panizzi, Annelise Mark Pejtersen, and Ulrich Thiel. DiLAS: a digital library annotation service. In *Proceedings of Annotation for Collaboration – A Workshop on Annotation Models, Tools and Practices*, 2005.

Ingo Frommholz, Predrag Knežević, Bhaskar Mehta, Claudia Niedereé, Thomas Risse, and Ulrich Thiel. Supporting information access in next generation digital library architectures. In Maristella Agosti, Hans-Jörg Schek, and Can Türker, editors, *Digital Library Architectures: Peer-to-Peer, Grid, and Service-Oriented. Proceedings of the Sixth Thematic Workshop of the EU Network of Excellence DELOS*, pages 49–60, Cagliari, Italy, June 2004.

Maristella Agosti, Nicola Ferro, Ingo Frommholz, and Ulrich Thiel. Annotations in digital libraries and laboratories – facets, models and usage. In Rachel Heery and Liz Lyon, editors, *Research and Advanced Technology for Digital Libraries. Proc. European Conference on Digital Libraries (ECDL 2004)*, Lecture Notes in Computer Science, pages 244–255, Heidelberg et al., 2004. Springer.

Ingo Frommholz, Ulrich Thiel, and Thomas Kamps. Annotation-based document retrieval with four-valued probabilistic datalog. In Thomas Rölleke and Arjen P de Vries, editors, *Proceedings of the first SIGIR Workshop on the Integration of Information Retrieval and Databases (WIRD'04)*, pages 31–38, Sheffield, UK, 2004.

Marcello L'Abbate, Ingo Frommholz, Ulrich Thiel, and Erich Neuhold. Using case based retrieval techniques for handling anomalous situations in advisory dialogues. In Fernando Galindo, Makoto Takizawa, and Roland Traummüller, editors, *Proceedings of the 15th International Conference on Database and Expert Systems Application (DEXA 2004)*, pages 539–548, 2004.

Erich Neuhold, Claudia Niedereé, Avaré Stewart, Ingo Frommholz, and Bhaskar Mehta. The role of context for information mediation in digital libraries. In *Proc. of the 7th International Conference on Asian Digital Libraries: International Collaboration and Cross-Fertilization (ICADL 2004)*, pages 133–143, 2004.

Ulrich Thiel, Holger Brocks, Ingo Frommholz, Andrea Dirsch-Weigand, Jürgen Keiper, Adelheit Stein, and Erich Neuhold. COLLATE - a laboratory supporting research on historic european films. *International Journal on Digital Libraries (IJDL)*, 4(1):8–12, 2004.

Ingo Frommholz, Holger Brocks, Ulrich Thiel, Erich Neuhold, Luigi Iannone, Giovanni Semeraro, Magarita Berardi, and Michaela Ceci. Document-centered collaboration for scholars in the humanities - the COLLATE system. In Panos Constantopoulos and Ingeborg T Solvberg, editors, *Research and Advanced Technology for Digital Libraries. Proc. European Conference on Digital Libraries (ECDL 2003)*, Lecture Notes in Computer Science, pages 434–445, Heidelberg et al., 2003. Springer.

Ingo Frommholz, Holger Brocks, Ulrich Thiel, and Adelheit Stein. Kontextbasiertes Retrieval unter Verwendung verknüpfter Annotationen. In *32. GI-Jahrestagung, Informatik 2002*, pages 161–165, Heidelberg et al., October 2002. Springer.

Holger Brocks, Adelheit Stein, Ulrich Thiel, Ingo Frommholz, and Andrea Dirsch-Weigand. How to incorporate collaborative discourse in cultural digital libraries. In *Proceedings of the ECAI 2002 Workshop on Semantic Authoring, Annotation & Knowledge Markup (SAAKM02)*, Lyon, France, July 2002.

Ingo Frommholz. Categorizing web documents in hierarchical catalogues. In *23th European Conference on Information Retrieval Research (ECIR 2001)*, March 2001.

## Books and Book Sections

Ingo Frommholz, Haiming Liu, Massimo Melucci, Nicholas J. Belkin, Gareth J. F. Jones, Noriko Kando, and Gabriella Pasi. *Joint Proceedings of Bridging the Gap between Information Science, Information Retrieval and Data Science (BIRDS 2021) + Workshop on Evaluation of Personalisation in Information Retrieval (WEPIR 2021)*. CEUR-WS.org, 2021.

Ingo Frommholz, Philipp Mayr, Guillaume Cabanac, and Suzan Verberne. *Proceedings of the 11th International Workshop on Bibliometric-enhanced Information Retrieval (BIR 2021)*. CEUR-WS.org, 2021.

Guillaume Cabanac, Ingo Frommholz, and Philipp Mayr, editors. *Proceedings of the 10th International Workshop on Bibliometric-enhanced Information Retrieval co-located with 42nd European Conference on Information Retrieval (ECIR 2020)*. CEUR-WS.org, Lisbon, Portugal, 2020.

Ingo Frommholz, Haiming Liu, and Massimo Melucci. *Proceedings of the First Workshop on Bridging the Gap between Information Science, Information Retrieval and Data Science (BIRDS 2020)*. CEUR-WS.org, 2020.

Guillaume Cabanac, Ingo Frommholz, and Philipp Mayr, editors. *Proceedings of the 8th International Workshop on Bibliometric-enhanced Information Retrieval (BIR) co-located with the 41st European Conference on Information Retrieval (ECIR 2019)*. CEUR-WS.org, 2019.

Ingo Frommholz, Haiming Liu, and Yashar Moshfeghi, editors. *Proceedings of the 9th PhD Symposium on Future Directions in Information Access co-located with 12th European Summer School in Information Retrieval (ESSIR 2019)*. CEUR-WS.org, Milan, Italy, 2019.

Philipp Mayr, Ingo Frommholz, and Guillaume Cabanac. *Proceedings of the Seventh Workshop on Bibliometric-enhanced Information Retrieval co-located with the 40th European Conference on Information Retrieval (ECIR 2018)*. CEUR-WS.org, Grenoble, France, 2018.

Philipp Mayr, Ingo Frommholz, and Guillaume Cabanac. *Proceedings of the Fifth Workshop on Bibliometric-enhanced Information Retrieval co-located with the 39th European Conference on Information Retrieval (ECIR 2017)*. CEUR-WS.org, Aberdeen, Scotland, 2017.

Guillaume Cabanac, Muthu Kumar Chandrasekaran, Ingo Frommholz, Kokil Jaidka, Min-Yen Kan, Philipp Mayr, and Dietmar Wolfram, editors. *Proceedings of the Joint Workshop on Bibliometric-enhanced Information Retrieval and Natural Language Processing for Digital Libraries (BIRNDL) co-located with the Joint Conference on Digital Libraries 2016 (JCDL 2016)*. CEUR-WS.org, Newark, NJ, USA, 2016.

Philipp Mayr, Ingo Frommholz, and Guillaume Cabanac, editors. *Proceedings of the Third Workshop on Bibliometric-enhanced Information Retrieval co-located with the 38th European Conference on Information Retrieval (ECIR 2016)*, Padua, Italy, 2016. CEUR-WS.org.

Philipp Mayr, Ingo Frommholz, and Peter Mutschke, editors. *Proceedings of the Second Workshop on Bibliometric-enhanced Information Retrieval co-located with the 37th European Conference on Information Retrieval (ECIR 2015)*. CEUR-WS.org, 2015.

Ingo Frommholz, Muhammad Kamran Abbasi, Dunja Mladenić, Marko Grobelnik, and Frederik Aström. Automated Tools for Subject Information Organization: Selected Topics. In Koraljka Golub, editor, *Subject Information Access - an Interdisciplinary Approach*, chapter 4, pages 107–148. Libraries Unlimited, 2014.

Dawei Song, Massimo Melucci, Ingo Frommholz, Peng Zhang, Lei Wang, and Sachi Arafat, editors. *Proceedings of the Fifth International Quantum Interaction Symposium (QI 2011)*, Aberdeen, UK. Springer, LNCS edition, July 2011.

Mounia Lalmas, Joemon Jose, Andreas Rauber, Fabrizio Sebastiani, and Ingo Frommholz, editors. *Research and Advanced Technology for Digital Libraries 14th European Conference, ECDL 2010, Glasgow, UK, September 6-10, 2010. Proceedings*. Springer, LNCS edition, September 2010.

Ingo Frommholz, Keith van Rijsbergen, Fabio Crestani, and Mounia Lalmas. Towards a geometrical cognitive framework. In Birger Larsen, Jesper Schneider, Fredrik Aström, and Balázs Schlemmer, editors, *The Janus Faced Scholar. A Festschrift in Honour of Peter Ingwersen*, pages 43–48. July 2010.

Ulrich Thiel, Holger Brocks, Andrea Dirsch-Weigand, André Everts, Ingo Frommholz, and Adelheit Stein. Queries in context: Access to digitized historic documents in a collaborative for the humanities. In Matthias Hemmje, Claudia Niedereé, and Thomas Risse, editors, *From Integrated Publication and Information Systems to Virtual Information and Knowledge Environments. Essays Dedicated to Erich J. Neuhold on the Occasion of His 65th Birthday*, pages 117–127. Springer, 2005.

## Unrefereed Publications and Studies

Ingo Frommholz, Guillaume Cabanac, Philipp Mayr, and Suzan Verberne. Report on the 11th Bibliometric-enhanced Information Retrieval Workshop (BIR 2021). *SIGIR Forum*, 55(1):1–9, 2021.

Ingo Frommholz, Haiming Liu, and Massimo Melucci. BIRDS 2021: Bridging the Gap between Information Science, Information Retrieval and Data Science. In Falk Scholer, Paul Thomas, David Elswiler, Hideo Joho, Noriko Kando, and Catherine Smith, editors, *CHIIR '21: Proceedings of the 2021 Conference on Human Information Interaction and Retrieval*, pages 349–350, Canberra, Australia, 2021. ACM.

Ingo Frommholz, Haiming Liu, and Massimo Melucci. Report on the 2nd Workshop on Bridging the Gap between Information Science, Information Retrieval and Data Science (BIRDS 2021). *SIGIR Forum*, 55(1):1–6, 2021.

Guillaume Cabanac, Ingo Frommholz, and Philipp Mayr. Bibliometric-Enhanced Information Retrieval 10th Anniversary Workshop Edition. In *Proceedings European Conference on Information Retrieval (ECIR 2020)*, pages 641–647, Lisbon, Portugal, 2020.

Sergio Nunes, Suzanne Little, Sumit Bhatia, Ludovico Boratto, Guillaume Cabanac, Ricardo Campos, Francisco M. Couto, Stefano Faralli, Ingo Frommholz, Adam Jatowt, Alpio Jorge, Mirko Marras, Philipp Mayr, and Giovanni Stilo. ECIR 2020 Workshops: Assessing the impact of going online. *SIGIR Forum*, 54(1), 2020.

Guillaume Cabanac, Ingo Frommholz, and Philipp Mayr. Bibliometric-Enhanced Information Retrieval: 8th International BIR Workshop. In *Proceedings European Conference on Information Retrieval (ECIR 2019)*, pages 394–399, Cologne, Germany, 2019. Springer.

Guillaume Cabanac, Ingo Frommholz, and Philipp Mayr. Bibliometric-enhanced information retrieval: preface. *Scientometrics*, 116(2):1225–1227, 2018.

Philipp Mayr, Ingo Frommholz, and Guillaume Cabanac. Report on the 7th International Workshop on Bibliometric-enhanced Information Retrieval (BIR 2018). *SIGIR Forum*, 52(1):135–139, 2018.

Philipp Mayr, Ingo Frommholz, Guillaume Cabanac, Muthu Kumar Chandrasekaran, Kokil Jaidka, Min-Yen Kan, and Dietmar Wolfram. Introduction to the special issue on bibliometric-enhanced information retrieval and natural language processing for digital libraries (BIRNDL). *International Journal on Digital Libraries*, 19(2):1–5, 2017.

Philipp Mayr, Ingo Frommholz, and Guillaume Cabanac. Report on the 5th International Workshop on Bibliometric-enhanced Information Retrieval (BIR 2017). *SIGIR Forum*, 51(1):29–35, 2017.

Guillaume Cabanac, Muthu Kumar Chandrasekaran, Ingo Frommholz, Kokil Jaidka, Min-Yen Kan, Philipp Mayr, and Dietmar Wolfram. Report on the Joint Workshop on Bibliometric-enhanced Information Retrieval and Natural Language Processing for Digital Libraries (BIRNDL 2016). *SIGIR Forum*, 50(2):36–43, 2016.

Philipp Mayr, Ingo Frommholz, and Guillaume Cabanac. Editorial for the 3rd bibliometric-enhanced information retrieval workshop at ECIR 2016. In *Proceedings BIR 2016 Workshop on Bibliometric-enhanced Information Retrieval*, pages 1–4. CEUR-WS.org, 2016.

Philipp Mayr, Ingo Frommholz, and Peter Mutschke. Editorial for the bibliometric-enhanced information retrieval workshop at ECIR 2015. In *Proceedings of the Second Workshop on Bibliometric-enhanced Information Retrieval (BIR 2015)*, pages 1–4, Vienna, Austria, 2015. CEUR-WS.org.

Ingo Frommholz, Andreas Rauber, and Fabrizio Sebastiani. Guest Editors' introduction to the focussed issue on the 14th European Conference on Digital Libraries (ECDL 2010). *International Journal on Digital Libraries*, 2(12), 2011.

Benjamin Piwowarski, Ingo Frommholz, Mounia Lalmas, and Keith Van Rijsbergen. Exploring a multidimensional representation of documents and queries (extended version), 2010. Extended version of our RIAO 2010 paper. Available at <http://arxiv.org/pdf/1002.3238v2.pdf>.

Ingo Frommholz and Ray R Larson. Report on the INEX 2006 heterogeneous collection track. In *SIGIR Forum*, volume 41, June 2007.

Ingo Frommholz and Ray R Larson. The heterogeneous collection track at INEX 2006. LNCS, pages 312–317, Heidelberg et al., 2007. Springer.

Ingo Frommholz and Norbert Fuhr. KI-Methoden zur Email-Archivierung – Technologische Studie zum “Inbox-Szenario”, November 2006. Study examining the application of machine learning and AI methods for archiving emails, on behalf of d.velop AG, Germany. Available at [http://www.is.informatik.uni-duisburg.de/bib/pdf/ir/Frommholz\\_Fuhr\\_06b.pdf](http://www.is.informatik.uni-duisburg.de/bib/pdf/ir/Frommholz_Fuhr_06b.pdf). In German.

Ingo Frommholz. Applying the annotation view on messages for discussion search. In E M Voorhees and Lori P Buckland, editors, *The Fourteenth Text REtrieval Conference (TREC 2005)*, Gaithersburg, MD, USA, 2005. NIST.

Ingo Frommholz and Matthias Hemmje. Ausarbeitung von Lösungsansätzen für die Erstellung eines Thesaurus-basierten Geologischen Informationssystems des Bayerischen Geologischen Landesamts München – Technologische Studie, December 2001. Study examining means for migrating a geological database into a European information system/thesaurus, on behalf of the Bavarian Environment Agency in Munich, Germany. In German.

## Theses

Ingo Frommholz. *A Probabilistic Framework for Information Modelling and Retrieval Based on User Annotations on Digital Objects*. Phd thesis, University of Duisburg-Essen, 2008. Available at [http://www.is.inf.uni-due.de/bib/docs/Frommholz\\_08.html.en](http://www.is.inf.uni-due.de/bib/docs/Frommholz_08.html.en).

Ingo Frommholz. Automatische Kategorisierung von Web-Dokumenten. Diploma thesis, University of Dortmund, January 2001.