

kunegis@gmail.com
networkscience.wordpress.com

linkedin.com/in/kunegis
github.com/kunegis

Skills

- **Languages:** French (native), German (native), English (advanced, C2), Dutch (beginner, A2), Spanish (intermediate), Portuguese (beginner).
- **Programming languages:** Major work performed in: C (C90, C99), C++ (experience with C++98, C++14, C++20), Java (SE 6), Matlab (2009), Perl (5), Python (3), shell scripting (POSIX, Bash, KornShell (KSH)); work performed in: Ada, AWK, BASIC, JavaScript, Julia, Logo, Object Pascal, Octave, PHP, Turbo Pascal.
- **Operating systems:** Major work performed on: GNU/Linux (Ubuntu, Red Hat), Windows, AIX; work performed on: FreeBSD, macOS.
- **Source code management and bug tracking:** Bugzilla, CVS, Git, Gitlab/Github/Bitbucket, Jira, Kanban, Subversion/SVN.
- **Build systems and continuous integration/delivery (CI/CD):** Ant, Autoconf/Autoconf/Automake, Cook, Jenkins, Make, Maven, Stu (I am the author).
- **Typesetting and layouting:** CSS, HTML, JSP, Tex/Latex.
- **Query, data processing and representation technologies:** CSV, RDF, relational databases, sed, SQL, XSLT.
- **Programming methodologies and topics:** Agent-oriented programming, agile software development, character encodings, chess programming, data manipulation / data engineering, internationalization, linear programming / optimization, machine learning, message passing, numerical computing, object oriented programming, parsing, regular expressions, scrum, systems programming, visualization / plotting.
- **Networking and organizational skills:** Organisation of conferences, workshops, off-campus meetings, use of Twitter/Facebook for outreach, popularization of scientific topics.
- **Teaching and didactical skills:** Lectures, seminars, projects, supervision of bachelor/master/PhD theses, drafting and correcting exams. I have given both lectures and academic talks in English, French and German.
- **Scientific topics:** Algebraic graph theory, complex networks, data mining, databases / relational algebra, game theory, graph theory, linear algebra, machine learning, matrix decompositions, network science, network theory, random graphs, recommender systems, search engines / information retrieval, semantic web, web science.
- **Research highlights:** First study and large published dataset about social networks with negative ‘enemy’ edges [30], large-scale study of web tracking [12], algebraic analysis of bipartite networks [26] and signed graphs [27], invented a machine learning technique for link prediction [29], introduced the spectral evolution model for networks [25], introduced measures for the skewness of degree distributions [21].

Soft Skills

- **Adaptability:** I have worked both in the industry and in academia. This gives me a unique perspective on the value of programming and management techniques, as well as the experience when to use them.

¹This version of this file is up to date as of February 22, 2023.


- **Communication:** I love to convey ideas to other people. As a scientist, talking about new approaches to problems is second nature to me. As is disseminating results to larger audiences.
- **Teamwork:** I am able to work in teams small and large, with collaborators close and distant, from my own teams as well as from other companies. I have both managed a team of developers, as well as been an individual developer in a team.
- **Creativity:** My usual approach is to go beyond the standard “do what everyone does” and to find novel solutions to problems. This is a core skill for a scientist, which I also strive to apply to software development.
- **Analytic thinking:** Being precise is important to me. “It kind of works” is not enough – things must be shown to work via extensive testing, as well as via theoretical consideration.
- **Eclecticism:** There’s more than one way to do it. I don’t believe that there is one ideal way to solve a given problem. In my career, I have learned and used a large diversity of programming languages in order to give me a broad range of tools to solve real-world computer science problems.

Software Development

- **CREST over SwiftNet** 2023–present
Message passing platform (C, C++)
- **FractAda** 2022
Animated fractal generation (Ada)
- **Flora** 2020–present
Plant collection database and phylogenetic visualization tool (C++20)
- **Tracking Analysis** 2018
Analysis of large-scale web tracking data (shell script, Matlab)
- **Santé** 2018–present
Health data mining and analysis (Python)
- **Social Information Processing** 2014–2017
Cloud infrastructure for intra-department collaboration on computing projects (acquisition and management of 18-machine cloud)
- **REVEAL** 2014–2016
Latent data discovery (Octave)
- **LiquidFeedback** 2014–2015
Extraction and analysis of data from a liquid democracy platform (Python, shell scripting)
- **Polcovar** 2013
Symbolic calculation of the number of arbitrary subgraph counts in Erdős–Rényi graphs (Matlab, Octave)
- **SynGraphy** 2013–2015
A library for graph generation based on arbitrary graph properties (Matlab)
- **Petster** 2013–2017
Crawling and analysis of social media data from pet social networks (shell scripting, Matlab, Python)
- **SocialSensor** 2013–2014
Social media content analysis platform (Java)
- **KONECT-Toolbox** 2012–2022
Toolbox for calculation of network statistics, matrix decompositions and other characteristics (Matlab, Octave)
- **Stu** 2012–present
Build system for large data analysis projects (C++14)
- **KONECT-Web** 2011–present
Website of the KONECT project (HTML, shell scripting, Perl, Octave, Stu)

- **KONECT-Analysis** 2011–2022
Analysis code of KONECT, creation of plots and visualizations (C++11, shell scripting, Matlab, Octave, Julia, Perl)
- **KONECT-Extr** 2010–2019
Extraction library for the 1000+ KONECT network datasets (shell scripting, C99, Perl)
- **ROBUST** 2010–2013
Analysis of business communities (Java)
- **LiveTweet** 2010–2011
Extraction and analysis of Twitter trends (Java, Matlab)
- **Learning Semantic Recommenders** 2010
Link prediction library on network data with semantic relationships (Java)
- **SmartSenior** 2009–2010
Intelligent services for elderly people (Java)
- **WebTV** 2008–2010
Recommender system for smart TVs (Java)
- **Slashdot Zoo** 2008–2009
Crawling Slashdot.org and analysis of friend/foe relationships (shell scripting, Matlab)
- **Universal Recommender** 2007–2010
Library for building recommender systems (Java)
- **Search Results Optimization via Linear Integer Programming** 2006
Search engine using linear integer programming to support hard and soft constraints (Java)
- **DDDC** 2005–2010
Monitoring tool for continuous deployment (shell scripting)
- **PIA – Personal Information Agent** 2002–2010
Search engine and social exchange site for scientific documents (Java, HTML, CSS)
- **BabyChess** 1998–2006
Chess engine and desktop application (C++98)

Education

- [E1] **Dr. rer. nat.**, University of Koblenz–Landau, Germany 2011    
(Computer science, PhD-equivalent)
Thesis: *On the Spectral Evolution of Large Networks*
- [E2] **Dipl.-Inform.**, Technical University of Berlin 2006 
(Computer science, Master-equivalent)
Thesis: *Using Integer Linear Programming for Search Results Optimization*
- [E3] **Vordiplom**, Technical University of Berlin 2003
(Computer science, Bachelor-equivalent)
Studiengang: Informatik
- [E4] **Baccalauréat**, Lycée Français de Berlin 1999
(French high school diploma)
Série scientifique
- [E5] **Abitur**, Lycée Français de Berlin 1999
(German high school diploma)
Leistungskurse: Mathematik, Physik
- [E6] **Diplôme national du brevet**, Lycée Français de Berlin 1996
Série collège

Positions	Dev/Systems Engineer	2023–present
	Society for Worldwide Interbank Financial Telecommunication	
	Postdoctoral Researcher	2017–2019
	Namur Center for Complex Systems (naXys), University of Namur	
	Postdoctoral Researcher	2011–2016
	Institute for Web Science and Technologies, University of Koblenz–Landau	
	Visiting Postdoctoral Researcher	2013
	Networks and Operating Systems Group, University of Cambridge	
	Research Assistant	2010–2011
	Institute for Web Science and Technologies, University of Koblenz–Landau	
Research Projects	Research Assistant	2006–2010
	DAI Laboratory, Technical University of Berlin	
	Student Research Assistant	2002–2006
	DAI Laboratory, Technical University of Berlin	
	Intern, Air Traffic Control Tower	1997
	Berlin-Tempelhof Airport	
	• KONECT	2011–present
	Koblenz Network Collection	
	• IDEES (ERDF/FEDER – Wallonia/Wallonie)	2017–2019
	L’Internet de Demain pour développer les Entreprises, l’Économie et la Société	
	• REVEAL (EU FP7-ICT)	2014–2016
	Revealing Hidden Concepts in Social Media	
	• SIP (DFG WGI)	2014–2016
	Social Information Processing – Cloud Infrastructure at the Univ. of Koblenz–Landau	
	• SocialSensor (EU FP7-ICT)	2013–2014
	Sensing User Generated Input for Improved Media Discovery and Experience	
	• KONECT Cloud	2012–2013
	Large Scale Network Mining in the Cloud	
	• ROBUST (EU FP7-ICT)	2010–2013
	Risk and Opportunity Management of Huge-Scale Business Community Cooperation	
	• WeKnowIt (EU FP7-ICT)	2010
	Emerging, Collective Intelligence for Personal, Organisational and Social Use	
	• MULTIPLA (DFG)	2010
	Multi-Ontology Learning: Crossing the Boundaries of Domains and Languages	
	• LSR	2010
	Learning Semantic Recommenders	
	• UCPM	2010
	User Centric Profile Management	
	• SERUM	2010
	Semantic Recommenders Based on Large Unstructured Datasets	
	• Connected Living	2009–2010
	Innovationszentrum “Vernetztes Leben” – Innovation Center “Connected Living”	
	• SmartSenior	2009–2010
	Subproject Service Infrastructure and Usability Engineering – Intelligent Services for Elderly People	
	• WebTV	2009–2010
	Semantic TV Recommendations	
	• PIA	2006–2010
	Personal Information Agent	

Lecturing	<ul style="list-style-type: none"> • Graph Theory (Théorie des graphes, in French), Mathematics (BSc), Univ. of Namur, First Quadrimester 2017/18, 2018/19. • Network Theory and Dynamic Systems (in English), Web Science (MSc), Univ. of Koblenz–Landau, Summer Term 2014, 2015, 2016. • Introduction to Database Systems (Grundlagen der Datenbanken, in German), Computer Science (BSc), Univ. of Koblenz–Landau, Winter Term 2012/13, 2013/14, 2014/15, 2015/16.
Other Teaching	<ul style="list-style-type: none"> • Advanced Topics in Network Science (Seminar), Univ. of Koblenz–Landau, Summer Term 2016. • Learning Analytics: Aspects of Machine Learning and Empirical Psychology in E-Learning (Learning Analytics: Aspekte des Machine Learnings und empirischer Psychologie beim E-Learning, Proseminar), Univ. of Koblenz–Landau, Winter Term 2015/2016. • Recommender Systems (Seminar), Univ. of Koblenz–Landau, Summer Term 2015. • Distributed Scalable Network Analysis (Research Lab), Univ. of Koblenz–Landau, Winter Term 2014/2015. • Advanced Topics in Network Theory (Seminar), Univ. of Koblenz–Landau, Summer Term 2014. • Network Theory and Dynamic Systems, Web Science (MSc), tutoring, Univ. of Koblenz–Landau, Summer Term 2013, 2014. • Social Networks (Soziale Netzwerke, Proseminar), Univ. of Koblenz–Landau, Summer Term 2012, 2013. • Introduction to Database Systems (Grundlagen der Datenbanken), tutoring, Computer Science (BSc), Univ. of Koblenz–Landau, Winter Term 2010/2011, 2011/2012.
Supervised Theses	<ul style="list-style-type: none"> • Marcel Reif. Automatische Erkennung von exakten und Near-Duplikaten in einer Netzwerkdatenbank, <i>BSc</i>, Univ. of Koblenz–Landau, 2016.  • Nils Geilen. Entwicklung eines Systems zur Vorhersage von Nutzeraktivität auf den Diskussionsseiten der Wikipedia, <i>BSc</i>, Univ. of Koblenz–Landau, 2015.  • Jesús Cabello González. Berechnung und Approximation von Kürzeste-Pfad-Statistiken in großen Netzwerken für KONECT, <i>BSc</i>, Univ. of Cádiz, 2014.  • Julia Preusse. Analysis of the WebUni Online Student Community, <i>Dipl.-Inform.</i>, Otto von Guericke Univ. Magdeburg, 2010.  • Stephan Spiegel. A Hybrid Approach to Recommender Systems based on Matrix Factorization, <i>Dipl.-Inform.</i>, Tech. Univ. Berlin, 2009.  • Christian Banik. Recommending Wiki Articles using Collaborative Filtering, <i>Dipl.-Inform.</i>, Tech. Univ. Berlin, 2009.  • Iris Breddin. Untersuchung der Klassifizierbarkeit und Klassifikation von Schweißnahtdaten, <i>Dipl.-Inform.</i>, Tech. Univ. Berlin, 2008. 
Conference Organization	<ul style="list-style-type: none"> • Joint International Workshop on Social Influence Analysis and Mining Actionable Insights from Social Networks (SocInf+MAISoN) at the Int. Jt. Conf. on Artif. Intell. and Eur. Conf. on Artif. Intell. (IJCAI-ECAI), 2018, Stockholm, Sweden, Program Chair.  • WeST Off-Campus Meeting (OCM), 2016, La Roche-en-Ardenne, Belgium, Chair.  • INFORMATIK (largest German computer science conference), 2013, Koblenz, Germany, Publicity Chair.  • Web Science Conference, 2011, Koblenz, Germany, Publicity Chair.  • Special Session on Uncertainty in Network Mining (UNM) at the Int. Conf. on Inf. Processing and Manag. of Uncertainty in Knowl.-based Syst. (IPMU), 2010, Dortmund, Germany, Technical Chair. 

Articles

- [1] [Understanding Social Networks using Transfer Learning](#). Jun Sun, Steffen Staab, Jérôme Kunegis, *IEEE Comput. Mag.*, 51(6):52–60, 2018. 
- [2] [On the Ubiquity of Web Tracking: Insights from a Billion-Page Web Crawl](#). Sebastian Schelter, Jérôme Kunegis, *J. of Web Sci.*, 4(4):53–66, 2018.     
- [3] [The Problem of Action at a Distance in Networks and the Emergence of Preferential Attachment from Triadic Closure](#). Jérôme Kunegis, Fariba Karimi, Jun Sun, *J. of Interdiscip. Methodol. and Issues in Sci.*, 2, Graphs and Social Systems, 2017.    
- [4] [Continuous-Time Quantum Walks on Directed Bipartite Graphs](#). Beat Tödtli, Monika Laner, Jouri Semenov, Beatrice Paoli, Marcel Blattner, Jérôme Kunegis, *Phys. Rev. A*, 94(5):052338, 2016.   
- [5] [Linguistic Neighbourhoods: Explaining Cultural Borders on Wikipedia through Multilingual Co-editing Activity](#). Anna Samoilenko, Fariba Karimi, Daniel Edler, Jérôme Kunegis, Markus Strohmaier, *Eur. Phys. J. Data Sci.*, 5:9, 2016.    
- [6] [Glaubwürdigkeit und Vertrauen von Online-News](#). Ines C. Vogel, Jutta Milde, Karin Stengel, Steffen Staab, Christoph Carl Kling, Jérôme Kunegis, *Datenschutz und Datensicherheit*, 40(5):312–316, 2015. 
- [7] [Exploiting the Structure of Bipartite Graphs for Algebraic and Spectral Graph Theory Applications](#). Jérôme Kunegis, *Internet Math.*, 11(3):201–321, 2015.  
- [8] [Spectral Evolution in Dynamic Networks](#). Jérôme Kunegis, Damien Fay, Christian Bauckhage, *Knowl. and Inf. Syst.*, 37(1):1–36, 2013. 
- [9] [Discriminating Graphs through Spectral Projections](#). Damien Fay, Hamed Haddadi, Steve Uhlig, Liam Kilmartin, Andrew W. Moore, Jérôme Kunegis, Marios Iliofotou, *Comput. Netw.*, 55(15):3458–3468, 2011. 
- [10] [Ein gradualisiertes Community-Modell zur Bildung wissenschaftlicher Gemeinschaften](#). Michael Hahne, Corinna Jung, Jérôme Kunegis, Andreas Lommatzsch, André Paus, In: *Analyse sozialer Netzwerke und Social Software – Grundlagen und Anwendungsbeispiele*, 2007.  

Conference Papers





- [11] [‘Dark Germany’: Hidden Patterns of Participation in Online Far-Right Protests Against Refugee Housing](#). Sebastian Schelter, Jérôme Kunegis, In: *Proc. Int. Conf. on Soc. Inform.*, pp. 277–288, 2017.  
- [12] [Tracking the Trackers: A Large-Scale Analysis of Embedded Web Trackers](#). Sebastian Schelter, Jérôme Kunegis, In: *Proc. Int. Conf. on Web and Soc. Media*, pp. 679–682, 2016.    
- [13] [Private-Collective Invention and Open Source Software: Longitudinal Insights from Linux Kernel Development](#). Dirk Homscheid, Jérôme Kunegis, Mario Schaarschmidt, In: *Proc. IFIP Conf. on e-Business, e-Services and e-Society*, pp. 299–313, 2015.  
- [14] [Voting Behaviour and Power in Online Democracy: A Study of LiquidFeedback in Germany’s Pirate Party](#). Christoph Carl Kling, Jérôme Kunegis, Heinrich Hartmann, Markus Strohmaier, Steffen Staab, In: *Proc. Int. Conf. on Weblogs and Soc. Media*, pp. 208–217, 2015. (Won Best Paper Honorable Mention)     
- [15] [Detecting Non-Gaussian Geographical Topics in Tagged Photo Collections](#). Christoph Carl Kling, Jérôme Kunegis, Sergej Sizov, Steffen Staab, In: *Proc. Int. Conf. on Web Search and Data Min.*, pp. 603–612, 2014.  
- [16] [Preferential Attachment in Online Networks: Measurement and Explanations](#). Jérôme Kunegis, Marcel Blattner, Christine Moser, In: *Proc. Web Sci. Conf.*, pp. 205–214, 2013.    
- [17] [What Is the Added Value of Negative Links in Online Social Networks?](#) Jérôme Kunegis, Julia Preusse, Felix Schwagereit, In: *Proc. Int. World Wide Web Conf.*, pp. 727–736, 2013.   

- [18] [Centrality and Mode Detection in Dynamic Contact Graphs; a Joint Diagonalisation Approach](#). Damien Fay, Jérôme Kunegis, Eiko Yoneki, In: *Proc. Int. Conf. on Advances in Soc. Netw. Anal. and Min.*, pp. 41–48, 2013. 
- [19] [Structural Dynamics of Knowledge Networks](#). Julia Preusse, Jérôme Kunegis, Matthias Thimm, Thomas Gottron, Steffen Staab, In: *Proc. Int. Conf. on Weblogs and Soc. Media*, pp. 506–515, 2013. 
- [20] [Predicting Directed Links using Nondiagonal Matrix Decompositions](#). Jérôme Kunegis, Jörg Fliege, In: *Proc. Int. Conf. on Data Min.*, pp. 948–953, 2012. 
- [21] [Fairness on the Web: Alternatives to the Power Law](#). Jérôme Kunegis, Julia Preusse, In: *Proc. Web Sci. Conf.*, pp. 175–184, 2012. 
- [22] [Diversity Dynamics in Online Networks](#). Jérôme Kunegis, Sergej Sizov, Felix Schwagereit, Damien Fay, In: *Proc. Conf. on Hypertext and Soc. Media*, pp. 255–264, 2012. (Nelson Newcomer Award Nominee) 
- [23] [Searching Microblogs: Coping with Sparsity and Document Quality](#). Nasir Naveed, Thomas Gottron, Jérôme Kunegis, Arifah Che Alhadi, In: *Proc. Int. Conf. on Inf. and Knowl. Manag.*, pp. 183–188, 2011. 
- [24] [Bad News Travels Fast: A Content-based Analysis of Interestingness on Twitter](#). Nasir Naveed, Thomas Gottron, Jérôme Kunegis, Arifah Che Alhadi, In: *Proc. Web Sci. Conf.*, 2011. 
- [25] [Network Growth and the Spectral Evolution Model](#). Jérôme Kunegis, Damien Fay, Christian Bauckhage, In: *Proc. Int. Conf. on Inf. and Knowl. Manag.*, pp. 739–748, 2010. (Won Student Travel Award) 
- [26] [The Link Prediction Problem in Bipartite Networks](#). Jérôme Kunegis, Ernesto W. De Luca, Şahin Albayrak, In: *Proc. Int. Conf. in Inf. Process. and Manag. of Uncertain. in Knowl.-based Syst.*, pp. 380–389, 2010. 
- [27] [Spectral Analysis of Signed Graphs for Clustering, Prediction and Visualization](#). Jérôme Kunegis, Stephan Schmidt, Andreas Lommatzsch, Jürgen Lerner, In: *Proc. SIAM Int. Conf. on Data Min.*, pp. 559–570, 2010. (Won Student Travel Fellowship Award) 
- [28] [Connecting Senior Citizens through Interactive TV](#). Barış Karataş, Torsten Schmidt, Jérôme Kunegis, Till Plumbaum, In: *Proc. Ambient Assist. Living*, 2010. 
- [29] [Learning Spectral Graph Transformations for Link Prediction](#). Jérôme Kunegis, Andreas Lommatzsch, In: *Proc. Int. Conf. on Mach. Learn.*, pp. 561–568, 2009. 
- [30] [The Slashdot Zoo: Mining a Social Network with Negative Edges](#). Jérôme Kunegis, Andreas Lommatzsch, Christian Bauckhage, In: *Proc. Int. World Wide Web Conf.*, pp. 741–750, 2009. 
- [31] [Alternative Similarity Functions for Graph Kernels](#). Jérôme Kunegis, Andreas Lommatzsch, Christian Bauckhage, In: *Proc. Int. Conf. on Pattern Recognit.*, 2008. 
- [32] [Modeling Collaborative Similarity with the Signed Resistance Distance Kernel](#). Jérôme Kunegis, Stephan Schmidt, Christian Bauckhage, Martin Mehlitz, Şahin Albayrak, In: *Proc. Eur. Conf. on Artif. Intell.*, pp. 261–265, 2008. 
- [33] [Assessing the Value of Unrated Items in Collaborative Filtering](#). Jérôme Kunegis, Andreas Lommatzsch, Martin Mehlitz, Şahin Albayrak, In: *Proc. Int. Conf. on Digital Inf. Manag.*, pp. 212–216, 2007. 
- [34] [Adapting Ratings in Memory-Based Collaborative Filtering using Linear Regression](#). Jérôme Kunegis, Şahin Albayrak, In: *Proc. Int. Conf. on Inf. Reuse and Integration*, pp. 49–54, 2007. 
- [35] [Collaborative Filtering using Electrical Resistance Network Models with Negative Edges](#). Jérôme Kunegis, Stephan Schmidt, In: *Proc. Industrial Conf. on Data Min.*, pp. 269–282, 2007. (Best Paper Nominee) 












	[36] A Multi-agent Framework for Personalized Information Filtering . Andreas Lommatzsch, Martin Mehlitz, Jérôme Kunegis, In: <i>Proc. German e-Science</i> , 2007.	 
	[37] Using Novel IR Measures to Learn Optimal Cluster Structures for Web Information Retrieval . Martin Mehlitz, Jérôme Kunegis, Şahin Albayrak, In: <i>Proc. Int. Conf. on Web Intell.</i> , pp. 312–316, 2007.	
	[38] Scalable Bandwidth Optimization in Advance Reservation Networks . Stephan Schmidt, Jérôme Kunegis, In: <i>Proc. Int. Conf. on Netw.</i> , pp. 95–100, 2007.	
	[39] A New Evaluation Measure for Information Retrieval Systems . Martin Mehlitz, Christian Bauckhage, Jérôme Kunegis, Şahin Albayrak, In: <i>Proc. Int. Conf. on Syst., Man and Cybern.</i> , pp. 1200–1204, 2007.	
Workshop Papers	[40] Predicting User Roles in Social Networks using Transfer Learning with Feature Transformation . Jun Sun, Jérôme Kunegis, Steffen Staab, In: <i>Proc. Int. Conf. on Data Min. Workshops</i> , pp. 128–135, Int. Workshop on Data Min. in Netw., 2016.	  
	[41] KONECT – The Koblenz Network Collection . Jérôme Kunegis, In: <i>Proc. Int. Conf. on World Wide Web Companion</i> , pp. 1343–1350, Web Obs. Workshop, 2013.	   
	[42] Online Dating Recommender Systems: The Split-complex Number Approach . Jérôme Kunegis, Gerd Gröner, Thomas Gotttron, In: <i>Proc. RecSys Workshop on Recomm. Syst. and the Soc. Web</i> , pp. 37–44, 2012.	   
	[43] KONECT Cloud – Large Scale Network Mining in the Cloud . Jérôme Kunegis, In: <i>Proc. Spring 2012 Future SOC Lab Day</i> , pp. 107–110, HPI Technical Report Series, 2012.	   
	[44] Link Prediction on Evolving Data using Tensor Factorization . Stephan Spiegel, Jan Clausen, Şahin Albayrak, Jérôme Kunegis, In: <i>Proc. Int. Conf. on Data Min. Workshops</i> , pp. 262–269, Workshop on Behav. Informat., 2011.	 
	[45] Multilingual Ontology-based User Profile Enrichment . Ernesto W. De Luca, Till Plumbaum, Jérôme Kunegis, Şahin Albayrak, In: <i>Proc. Int. Conf. on World Wide Web Companion</i> , pp. 41–42, Workshop on the Multiling. Semant. Web, 2010.	
	[46] Hydra: A Hybrid Recommender System [Cross-Linked Rating and Content Information] . Stephan Spiegel, Jérôme Kunegis, Fang Li, In: <i>Proc. Int. Workshop on Complex Netw. Meet Inf. and Knowl. Manag.</i> , pp. 75–80, 2009.	
	[47] On the Scalability of Graph Kernels Applied to Collaborative Recommenders . Jérôme Kunegis, Andreas Lommatzsch, Christian Bauckhage, Şahin Albayrak, In: <i>Proc. Eur. Conf. on Artif. Intell. Workshops</i> , pp. 35–38, Workshop on Recomm. Syst., 2008.	 
	[48] Resource-Aware Update Policy for Highly Dynamic P2P Networks . Dragan Milošević, Jérôme Kunegis, Şahin Albayrak, In: <i>Proc. Int. Conf. on Web Intell. and Intell. Agent Tech. Workshops</i> , pp. 419–423, Int. Workshop on P2P Comput. and Auton. Agents, 2007.	
Reference Works	[49] Spectral Evolution of Social Networks . Jérôme Kunegis, <i>Encyclopedia of Soc. Netw. Anal. and Min.</i> , Springer, 2013, 2017.	
	[50] Social Network Datasets . Jérôme Kunegis, <i>Encyclopedia of Soc. Netw. Anal. and Min.</i> , Springer, 2013, 2017.	
Abstracts	[51] The Role of Cultural Importance in Sister City Relationships . Mridul Seth, Jérôme Kunegis, Renaud Lambiotte, In: <i>Proc. Wiki Workshop</i> , 2018.	
	[52] SynGraphy: Succinct Summarisation of Large Networks via Small Synthetic Representative Graphs . Jérôme Kunegis, Pawan Kumar Jun Sun, Giuseppe Pirrò, In: <i>Proc. Int. Sch. and Conf. on Netw. Sci.</i> , 2018.	

- [53] [SynGraphy: Succinct Summarisation of Large Networks via Small Synthetic Representative Graphs](#). Jérôme Kunegis, Pawan Kumar, Jun Sun, Giuseppe Pirrò, Anna Samoilenko, In: *Proc. Belg. Netw. Res. Meet.*, 2017.  
- [54] [Socio-semantic Aspects of Wikipedia Usage across Five Languages](#). Yérali Gandica, Jérôme Kunegis, In: *Proc. Eur. Conf. on Soc. Netw.*, 2017. 
- [55] [Linguistic Neighbourhoods: Explaining Cultural Borders on Wikipedia Through Multilingual Co-editing Activity](#). Anna Samoilenko, Fariba Karimi, Daniel Edler, Jérôme Kunegis, Markus Strohmaier, In: *Proc. Int. Conf. on Comput. Soc. Sci.*, 2017. 
- [56] [‘Dark Germany’: Temporal Characteristics and Connectivity Patterns in Online Far-Right Protests Against Refugee Housing](#). Sebastian Schelter, Jérôme Kunegis, In: *Proc. Web Sci. Conf. Extended Abstracts*, 2017.  
- [57] [The Problem of Action at a Distance in Networks and the Emergence of Preferential Attachment from Triadic Closure](#). Jérôme Kunegis, Fariba Karimi, Jun Sun, In: *Proc. Int. Sch. and Conf. on Netw. Sci.*, 2017.  
- [58] [A Random Graph Model based on a Given Set of Networks](#). Jérôme Kunegis, Jun Sun, Eiko Yoneki, In: *Proc. Int. Sch. and Conf. on Netw. Sci.*, 2016. 
- [59] [Social Networking by Proxy: Analysis of Dogster, Catster and Hamsterster](#). Daniel Dünker, Jérôme Kunegis, In: *Proc. Int. Conf. on World Wide Web Companion*, pp. 361–362, 2015.  
- [60] [Twitter as a Political Network – Predicting the Following and Unfollowing Behavior of German Politicians](#). Julia Perl, Claudia Wagner, Jérôme Kunegis, Steffen Staab, In: *Proc. Web Sci. Conf.*, 2015. 
- [61] [Linguistic Influence Patterns within the Global Network of Wikipedia Language Editions](#). Anna Samoilenko, Fariba Karimi, Jérôme Kunegis, Daniel Edler, Markus Strohmaier, In: *Proc. Web Sci. Conf.*, 2015. 
- [62] [KONECT – The Koblenz Network Collection](#). Jérôme Kunegis, Steffen Staab, Daniel Dünker, In: *Proc. Int. Sch. and Conf. on Netw. Sci.*, 2012. 
- [63] [LiveTweet: Monitoring and Predicting Interesting Microblog Posts](#). Arifah Che Alhadi, Thomas Gottron, Jérôme Kunegis, Nasir Naveed, In: *Proc. Eur. Conf. on Inf. Retrieval Demonstrations*, pp. 569–570, 2012.  
- [64] [Time-Aware Centrality in Contact Network Analysis](#). Eiko Yoneki, Damien Fay, Jérôme Kunegis, In: *Proc. Eur. Conf. on Complex Syst.*, pp. 58, 2011. 
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- [67] [Challenges in Mining Social Media: Sparsity and Quality](#). Thomas Gottron, Nasir Naveed, Jérôme Kunegis, Arifah Che Alhadi, In: *Proc. Challenges in Document Min. (Dagstuhl Seminar 11171)*, 2011.
- [68] [Exploiting Hierarchical Tags for Context-awareness](#). Alan Said, Jérôme Kunegis, Ernesto W. De Luca, Şahin Albayrak, In: *Proc. Workshop on Exploiting Semantic Annotations for Inf. Retrieval*, pp. 35–36, 2010.  





Other Publications




- [69] [SynGraphy: Succinct Summarisation of Large Networks via Small Synthetic Representative Graphs](#). Jérôme Kunegis, Pawan Kumar, Jun Sun, Anna Samoilenko, Giuseppe Pirrò, *CoRR*, abs/2302.07755, 2023. 
- [70] [Modeling the Evolution of Networks as Shrinking Structural Diversity](#). Jérôme Kunegis, *CoRR*, abs/2009.09764, 2020. 
- [71] [Handbook of Network Analysis \[KONECT project\]](#). Jérôme Kunegis, *CoRR*, abs/1402.5500(v4), 2017.  

	[72] Social Networking by Proxy: A Case Study of Catster, Dogster and Hamsterster . Daniel Dünker, Jérôme Kunegis, <i>CoRR</i> , abs/1501.04527, 2015. 
	[73] Applications of Structural Balance in Signed Social Networks . Jérôme Kunegis, <i>CoRR</i> , abs/1402.6865, 2014. 
	[74] DecLiNe – Models for Decay of Links in Networks . Julia Preusse, Jérôme Kunegis, Matthias Thimm, Sergej Sizov, <i>CoRR</i> , abs/1403.4415, 2014. 
	[75] Polcovar: Software for Computing the Mean and Variance of Subgraph Counts in Random Graphs . Jérôme Kunegis, <i>CoRR</i> , abs/1402.5835, 2014.  
	[76] On Joint Diagonalisation for Dynamic Network Analysis . Damien Fay, Jérôme Kunegis, Eiko Yoneki, Technical report, University of Cambridge, 2011.  
	[77] Semantic Engine . Andreas Lommatzsch, Jérôme Kunegis, Torsten Schmidt, Stefan Marx, White paper, 2010.  
	[78] The Universal Recommender . Jérôme Kunegis, Alan Said, Winfried Umbrath, White paper, 2009.  
Keynotes and Invited Talks	[T1] Cats, Dogs, and Hamsters: The Secret Online Network of Pet Owners, DataBeers Brussels , 2017.  
	[T2] Algebraic Graph-theoric Measures of Conflict , <i>Journée Graphes et Systèmes Sociaux</i> (Seminar on Graphs and Soc. Syst.), 2016.  
	[T3] Measuring Conflict in Signed Social Networks, Application of Netw. Theory on Comput. Soc. Sci. (Workshop), 2015.
	[T4] Large Network Collections: The Power of Many Datasets, Int. Workshop on Soc. Netw. Anal. (ARS) , 2015. 
	[T5] Network Analysis Tools for Online Communities: The Koblenz Network Collection . Keynote, Workshop on Metrics, Anal. and Tools for Online Community Manag. (MAMA), 2013.  
Academic Tutorials	[T6] Network Analysis in the Age of Large Network Dataset Collections – Challenges, Solutions and Applications . Jérôme Kunegis, Renaud Lambiotte, Int. Conf. on Inf. and Knowl. Manag., 2017.  
	[T7] Web Science in Practice: Web Observatories . Jérôme Kunegis, Steffen Staab, WSTNet Web Sci. Summer Sch., 2016.   
Other Talks	[T8] Prediction of Network Semantics from Network Structure: Approaches Based on Large Network Collections. Univ. of Mons, 2018.
	[T9] What Is the Difference between a Social and a Hyperlink Network? – How the Type of Network Can Be Determined from the Network Structure Alone . Workshop on Network Comparison, Univ. of Oxford, 2017. 
	[T10] Measuring the Conflict in a Social Network with Friends and Foes: A Recent Algebraic Approach . Tech. Univ. Berlin, 2017. 
	[T11] The New KONECT Project at the University of Namur . Univ. of Namur, 2017. 
	[T12] Generating Networks with Realistic Properties Based on a Given (Set of) Network(s), and a Short Overview of the KONECT Project . Univ. of Namur, 2016. 
	[T13] It's Really about Hamsters . Int. Conf. on Weblogs and Soc. Media Sci. Slam, 2016. (Won First Prize)   
	[T14] KONECT: The Koblenz Network Collection – Towards a Broad Analysis of Complex Systems . ETH Zürich, 2015. 
	[T15] Modeling the Evolution of Networks as Shrinking Structural Diversity . Univ. of Koblenz–Landau, 2015. 
	[T16] Trust in Networks . KoMePol Project, 2013. 
	[T17] Observing the Web: The Koblenz Network Collection . Bournemouth Univ., 2013. 




- [T18] [Eight Formalisms for Defining Graph Models](#). Univ. of Koblenz–Landau, 2013. 
- [T19] [Diversity vs Uniformity: Understanding the Evolution of Large Networks](#). RO-BUST Project, 2012. 
- [T20] [Linguistic Network Analysis with the Koblenz Network Collection](#). Workshop on Modeling Linguist. Networks, 2012. 
- [T21] Growth and Decay: Using Machine Learning to Predict the Web’s Future, Workshop on Artif. Intell. on the Web, 2012.
- [T22] Models of Like, Dislike, Similarity and Dissimilarity using Split-complex Numbers, Univ. Coll. Dublin, 2012.
- [T23] [Why Is Beyoncé More Popular Than Me: Fairness, Diversity and Other Measures of Network Equality](#). Univ. of Freiburg, 2012. 
- [T24] Fairness on the Web: Alternatives to the Power Law. Leibniz-Institut für Sozialwissenschaften, Cologne, 2012.
- [T25] [KONECT – The Koblenz Network Collection](#). WSTNet Meeting, 2012. 
- [T26] On the Spectral Evolution of Large Networks. Univ. Coll. Cork, 2011.
- [T27] [Spectral Analysis of the Vector Space Model \(and Explicit Semantic Analysis\)](#). Jérôme Kunegis, Thomas Gottron, Univ. of Koblenz–Landau, 2011. 
- [T28] On the Spectral Evolution of Large Networks. Fraunhofer IAIS, St. Augustin, 2011.
- [T29] On the Spectral Evolution of Large Networks. Tech. Univ. Berlin, 2011.
- [T30] The Slashdot Zoo: Mining a Social Network with Negative Edges. Data and Knowl. Engineering Research Colloquium, Otto von Guericke Univ. Magdeburg, 2010.
- [T31] The Slashdot Zoo: Mining a Social Network with Negative Edges. Univ. of Koblenz–Landau, 2010.
- [T32] The Slashdot Zoo: Mining a Social Network with Negative Edges. Univ. of Hannover, 2010.
- [T33] [Kernel Methods](#). Competence Center for Information Retrieval and Machine Learning (CC IRML) Journal Club, DAI Laboratory, 2008. 
- [T34] [PIA+COMM – an Intelligent Search Engine](#). Michael Hahne, Corinna Jung, Jérôme Kunegis, Andreas Lommatzsch and André Paus. Workshop on the Formation of Soc. Netw. in Soc. Software Applications, INFORMATIK, 2006. 
- [T35] [Research at the DAI Laboratory](#). 2006. 
- [T36] [Schach und Computer](#). Seminar *Geschichte der Entwicklung des Computers*, Tech. Univ. Berlin, 2005. 
- [T37] [Wettkampf Kasparow – Deep Blue](#). Ahmad Haj Fares and Jérôme Kunegis. Seminar *Computerschach*, 2003. 

Posters without Publication

- [P1] Linguistic Neighbourhoods: Explaining Cultural Borders on Wikipedia through Multilingual Co-editing Activity. Anna Samoilenko, Fariba Karimi, Daniel Edler, Jérôme Kunegis, Markus Strohmaier, Int. Sch. and Conf. on Netw. Sci. (NetSciX), 2016. (Won Best Poster Award)  
- [P2] Do You Use Stu? Soon, You’ll Do. Jérôme Kunegis, WeST Institute Off-Campus Meeting (OCM), 2016. 
- [P3] Social Network Observatory. Jérôme Kunegis, Markus Strohmaier, Steffen Staab. Computat. Soc. Sci. Winter Symp. (CSSWS), 2015. 
- [P4] Quantifying Cultural Similarity through Language Co-occurrences in Wikipedia Editing Activity. Anna Samoilenko, Fariba Karimi, Daniel Edler, Jérôme Kunegis, Markus Strohmaier. Comput. Soc. Sci. Winter Symp. (CSSWS), 2015.
- [P5] Polarisation in Voting Platforms: A Case Study of LiquidFeedback in the German Pirate Party. Manuel Mittler, Christoph Carl Kling, Jérôme Kunegis, Markus Strohmaier, Comput. Soc. Sci. Winter Symp. (CSSWS), 2015.

- [P6] Twitter as a Political Network – Predicting the Following and Unfollowing Behavior of German Politicians. Julia Perl, Claudia Wagner, Jérôme Kunegis, Steffen Staab, Web Sci. Conf., 2015.
- [P7] Online Delegative Democracy: A Case Study of the German Pirate Party’s Voting Platform. Christoph Carl Kling, Jérôme Kunegis, Heinrich Hartmann. Comput. Soc. Sci. Winter Symp. (CSSWS), 2014.
- [P8] Social Networking By Proxy: A Case Study of Catster, Dogster and Hamsterster. Comput. Soc. Sci. Winter Symp. (CSSWS), 2014.
- [P9] A Theory-Driven Approach for Link and Unlink Predictions in Directed Social Networks. Julia Perl, Claudia Wagner, Jérôme Kunegis, Steffen Staab. Comput. Soc. Sci. Winter Symp. (CSSWS), 2014.
- [P10] Large Scale Network Analysis [KONECT – The Koblenz Network Collection]. Jérôme Kunegis, Tag der Computervisualistik (CV-Tag), University of Koblenz–Landau, 2013. 
- [P11] Need Networks? KONECT – The Koblenz Network Collection. Eur. Summer Sch. on Inf. Retrieval (ESSIR), 2011.
- [P12] KONECT – The Koblenz Network Collection. Web Sci. Conf., 2011.
- [P13] Uncovering Multi-modal Spread Modes using Joint Diagonalization in Dynamic Human Contact Networks. Damien Fay, Jérôme Kunegis, Eiko Yoneki. Interdiscip. Workshop on Inf. and Decision in Soc. Netw., 2011.
- [P14] On the Spectral Evolution of Large Networks. Postersession für Nachwuchswissenschaftler/innen, Univ. of Koblenz–Landau, 2011. 
- [P15] On the Spectral Evolution of Large Networks. SIAM Conf. on Data Min. Doctoral Forum (SIAM SDM), 2010. 

Demonstrations

- [D1] Schülerinformationstage, Institute for Web Science and Technologies, Univ. of Koblenz–Landau, 2011, 2013, 2015, 2016. 
- [D2] Institute for Web Science and Technologies, conference booth. [INFORMATIK 2013](#).
- [D3] LiveTweet: Monitoring and Predicting Interesting Microblog Posts, [Eur. Conf. on Inf. Retrieval \(ECIR\)](#), 2012. 
- [D4] PIA, Spree, CeBIT, 2010.
- [D5] PIA+COMM, CeBIT, 2007. 
- [D6] PIA, Lange Nacht der Wissenschaften Berlin/Potsdam, 2006.

Program Committees

- [Int. Conf. on Complex Netw. and Their Applications](#) [*Workshop* in 2016], 2016, 2017, 2018.
- [Int. AAAI Conf. on Web and Soc. Media \(ICWSM\)](#), 2016.
- [Workshop on Soc. News on the Web \(SNOW\)](#) at the World Wide Web Conf. (WWW), 2014, 2016.
- [Workshop on Soc. Semant. Anal. \(SALSA\)](#), 2016.
- [#FAIL! – The Workshop Series](#) at the Internet Research Conf. (IR), 2015.
- [Web Sci. Track](#), Int. World Wide Web Conf. (WWW), 2014, 2015.
- [#FAIL! – The Workshop Series](#) at the Web Sci. Conf. (WebSci), 2015.
- [Web Sci. Conf.](#), 2011, 2012, 2013, 2014.
- [Workshop on Connecting Online & Offline Life \(COOL\)](#) at the World Wide Web Conf. (WWW), 2014.
- [Int. Joint Conf. on Artif. Intell. \(IJCAI\)](#), 2013.
- [Web Sci. Education Workshop](#) at the Web Sci. Conf., 2013.
- [Conf. on Semant. Tech. and Inf. Retrieval \(STAIR\)](#), 2013.

- [Int. Workshop on Semant. Personalized Inf. Manag. \(SPIM\)](#) at the Int. Conf. on Web Search and Data Min. (WSDM), 2013.
- [Eur. Conf. on Inf. Retrieval \(ECIR\)](#), 2013.
- [Workshop on Metrics, Anal. and Tools for Online Community Manag. \(MAMA\)](#), at INFORMATIK, 2013
- [Eur. Conf. on Inf. Retrieval \(ECIR\)](#), poster track, 2012.
- [Conf. on Natural Language Processing \(KONVENS\)](#), 2012.
- [Workshop on Personalized Inf. Manag.: Linking Soc. and Semant. Web \(SPIM\)](#) at the Int. Conf. on Web Engineering (ICWE), 2012.
- [Int. Conf. on Inf. and Knowl. Manag. \(CIKM\)](#), 2011.
- [Int. Conf. on Knowl. Discovery and Data Min. \(KDD\)](#), research track, 2011.
- [Challenge on Context-aware Movie Recomm. \(CAMRa\)](#) at the Conf. on Recomm. Syst. (RecSys), 2010.
- [Special Session on Uncertainty in Netw. Min. \(UNM\)](#) at the Int. Conf. on Inf. Processing and Manag. of Uncertainty in Knowl.-based Syst. (IPMU), 2010.

Other Reviewing

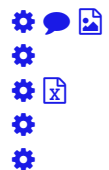
- Royal Military Academy, Belgium, 2018.
- [Netw. Sci.](#), 2015, 2016.
- [ACM Comput. Surveys](#), 2014, 2015.
- [The J. of Web Sci.](#), 2014, 2018.
- [ACM Trans. on Internet Tech. \(TOIT\)](#), 2014.
- Special Issue on “Propagation Phenomenon in Complex Networks: Theory and Practice”, New Generation Comput., 2014.
- [Int. Semant. Web Conf. \(ISWC\)](#), 2013.
- [Int. Conf. on Comput. Stat. \(COMPSTAT\)](#), 2012.
- [Int. J. of Comput. and Telecommunications Netw. \(COMNET\)](#), 2012.
- [IEEE Trans. on Neural Netw. \(TNN\)](#), 2011.
- [J. on Auton. Agents and Multi-agent Syst. \(AAMAS\)](#), Special Issue on Agent Mining, 2011.
- [ACM Trans. on Knowl. Discovery from Data \(TKDD\)](#), 2011.
- [TV Content Anal. \(TVCA\)](#), 2011.
- [Workshop on Ontologies and Lexical Resources \(OntoLex\)](#) at the Int. Conf. on Comput. Linguist. (COLING), 2010.

Volunteering

- [WSTNet Web Science Summer School \(WWSSS\)](#), Koblenz, 2016.
- [Festival of Ideas](#), Cambridge, 2013.
- [International Semantic Web Conference \(ISWC\)](#), Bonn, 2011
- [European Summer School on Information Retrieval \(ESSIR\)](#), Koblenz, 2011.

Software Authorship














- [Stu](#), build automation (C++14)
- [KONECT Toolbox](#), network analysis toolbox (Matlab, C99)
- [Polcovar](#), counting subgraph patterns in random graphs (Matlab)
- [Universal Recommender](#), recommendation library (Java)
- [BabyChess](#), chess engine and GUI (C++98)
- *More: see github.com/kunegis*



Mentions in Media

- [Die Abstimmungssoftware LiquidFeedback in der Piratenpartei: wegweisend für Demokratie 2.0?](#) (in German), www.piratenpartei.de, May 2015.
- [Come ha funzionato davvero la democrazia liquida dei Pirati tedeschi](#) (in Italian), [Wired Italia](#), April 2015.



-  Publication is available
  Publication is available on arXiv
  Poster is available
  Slides are available
  Publication has 100+ citations
  Publication/event has an accompanying website
  Dataset is available
  Source code is available
  Video of talk is available
  A blog article was written about the topic
  Publication has media coverage
  I won a prize for this work
  Nomination for a prize