

# **2016 IEEE/ACM Joint Conference on Digital Libraries (JCDL 2016)**

**Newark, New Jersey, USA  
19-23 June 2016**



**IEEE Catalog Number: CFP16JCD-POD  
ISBN: 978-1-5090-5254-7**

**Copyright © 2016, Association for Computing Machinery (ACM)  
All Rights Reserved**

***\*\*\*This publication is a representation of what appears in the IEEE  
Digital Libraries. Some format issues inherent in the e-media version may  
also appear in this print version.***

IEEE Catalog Number:	CFP16JCD-POD
ISBN (Print-On-Demand):	978-1-5090-5254-7
ISBN (Online):	978-1-4503-4229-2

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# Table of Contents

JCDL 2016 Conference Organization ..... x

JCDL 2016 Sponsors & Supporters ..... xiv

## Keynote Talks

- Future Digital Libraries: Research and Responsibilities ..... 1  
Maria Zemankova (*National Science Foundation*)
- The State of Practice and Use of Digital Collections: The Digital Public Library of America as a platform for research ..... 3  
Rachel Frick (*Digital Public Library of America (DPLA)*)
- The Energy of Delusion: The New York Art Resources Consortium (NYARC) & The Digital ..... 5  
Stephen Bury (*New York Art Resources Consortium (NYARC)*)

## Paper Session 1: Wikipedia and Newspaper Analysis

- Querylog-based Assessment of Retrievability Bias in a Large Newspaper Corpus ..... 7  
Myriam C. Traub, Thaer Samar, Jacco van Ossenbruggen, Jiyin He (*Centrum Wiskunde & Informatica*), Arjen de Vries (*Radboud University*), Lynda Hardman (*Centrum Wiskunde & Informatica*)
- Digital History Meets Wikipedia: Analyzing Historical Persons in Wikipedia ..... 17  
Adam Jatowt, Daisuke Kawai, Katsumi Tanaka (*Kyoto University*)
- Quality Assessment of Wikipedia Articles without Feature Engineering ..... 27  
Quang Vinh Dang, Claudia-Lavinia Ignat (*Universite de Lorraine & Inria*)
- Glyph Miner: A System for Efficiently Extracting Glyphs from Early Prints in the Context of OCR ..... 31  
Benedikt Budig, Thomas C. van Dijk, Felix Kirchner (*University Library Würzburg*)

## Paper Session 2: Curation and Education

- Enhancing Scholarly Use of Digital Libraries: A Comparative Survey and Review of Bibliographic Metadata Ontologies ..... 35  
Jacob Jett (*University of Illinois at Urbana-Champaign*), Terhi NurmiKKO-Fuller (*University of Oxford*), Timothy W. Cole (*University of Illinois at Urbana-Champaign*), Kevin Page (*University of Oxford*), J Stephen Downie (*University of Illinois at Urbana-Champaign*)
- Data Curation with a Focus on Reuse ..... 45  
Maria Esteva, Sandra Sweat, Robert McLay, Weijia Xu, Sivakumar Kulasekaran (*Texas Advanced Computing Center*)
- Unraveling K-12 Standard Alignment; Report on a New Attempt ..... 55  
Byron Marshall, René Reitsma (*Oregon State University*), Carleigh Samson (*University of Colorado, Boulder*)
- Research on the Follow-up Actions of College Students' Mobile Search ..... 59  
Dan Wu, Shaobo Liang (*Wuhan University*)

## Paper Session 3: Web Archiving

- Routing Memento Requests Using Binary Classifiers ..... 63  
Nicolas J. Bornand, Lyudmila Balakireva, Herbert Van de Sompel (*Los Alamos National Laboratory*)
- The Dawn of Today's Popular Domains: A Study of the Archived German Web over 18 Years ..... 73  
Helge Holzmann, Wolfgang Nejdl, Avishek Anand (*L3S Research Center*)
- ArchiveSpark: Efficient Web Archive Access, Extraction and Derivation ..... 83  
Helge Holzmann (*L3S Research Center*), Vinay Goel (*Internet Archive*), Avishek Anand (*L3S Research Center*)

## Paper Session 4: Search

- **Low-cost Semantic Enhancement to Digital Library Metadata and Indexing: Simple Yet Effective Strategies** ..... 93  
Annika Hinze, David Bainbridge, Sally Jo Cunningham (*University of Waikato*),  
J. Stephen Downie (*University of Illinois*)
- **Desiderata for Exploratory Search Interfaces to Web Archives in Support of Scholarly Activities** ..... 103  
Andrew Jackson (*The British Library*), Jimmy Lin, Ian Milligan (*University of Waterloo*),  
Nick Ruest (*York University*)
- **Content Selection and Curation for Web Archiving: The Gatekeepers vs. the Masses** ..... 107  
Ian Milligan (*University of Waterloo*), Nick Ruest (*York University*), Jimmy Lin (*University of Waterloo*)
- **Towards Better Understanding of Academic Search** ..... 111  
Madian Khabsa (*Microsoft Research*), Zhaohui Wu, C. Lee Giles (*The Pennsylvania State University*)
- **Investigating Cluster Stability when Analyzing Transaction Logs** ..... 115  
Daniel Grech, Paul Clough (*University of Sheffield*)

## Paper Session 5: Q&A and Gaming

- **Experimental Evaluation of Affective Embodied Agents in an Information Literacy Game** ..... 119  
Yan Ru Guo, Dion Hoe-Lian Goh, Hurizan Bin Hussain Muhamad, Boon Kuang Ong, Zichao Lei (*Nanyang Technological University*)
- **Evaluating the Quality of Educational Answers in Community Question-Answering** ..... 129  
Long T. Le, Chirag Shah (*Rutgers University*), Erik Choi (*Brainly*)
- **Music Information Seeking via Social Q&A: An Analysis of Questions in Music StackExchange Community** ..... 139  
Hengyi Fu (*Florida State university*), Yun Fan (*City University of New York*)

## Paper Session 6: Publication Mining

- **PDFFigures 2.0: Mining Figures from Research Papers** ..... 143  
Christopher Clark, Santosh Divvala (*University of Washington*)
- **Comparing Published Scientific Journal Articles to Their Pre-print Versions** ..... 153  
Martin Klein, Peter Broadwell, Sharon E. Farb, Todd Grappone (*University of California Los Angeles*)
- **Extracting Academic Genealogy Trees from the Networked Digital Library of Theses and Dissertations** ..... 163  
Wellington Dores, Fabrício Benevenuto, Alberto H. F. Laender (*Universidade Federal de Minas Gerais*)
- **Predicting Medical Subject Headings Based on Abstract Similarity and Citations to MEDLINE Records** ..... 167  
Adam K. Kehoe, Vetle I. Torvik (*University of Illinois at Urbana-Champaign*)

## Paper Session 7: Recommendation and Prediction

- **Profiling vs. Time vs. Content: What does Matter for Top-k Publication Recommendation based on Twitter Profiles?** ..... 171  
Chifumi Nishioka (*Leibniz Information Centre for Economics*),  
Ansgar Scherp (*Leibniz Information Centre for Economics (ZBW Kiel) & Kiel University*)
- **Early Prediction of Scholar Popularity** ..... 181  
Masoumeh Nezhadbiglari, Marcos André Gonçalves, Jussara M. Almeida (*Universidade Federal de Minas Gerais*)
- **Evaluating Link-based Recommendations for Wikipedia** ..... 191  
Malte Schwarzer, Moritz Schubotz (*TU Berlin*), Norman Meuschke, Corinna Breitinger (*University of Konstanz*),  
Volker Markl (*TU Berlin*), Bela Gipp (*University of Konstanz*)

## **Posters and Demos**

- **Context Matters: Towards Extracting a Citation's Context Using Linguistic Features** .... 201  
Daniel Duma, Charles Sutton, Ewan Klein (*University of Edinburgh*)
- **Knowledge Curation Discussions and Activity Dynamics in a Short Lived Social Q&A Community** ..... 203  
Hengyi Fu, Besiki Stilia (*Florida State University*)
- **Avoiding the Drunkard's Search: Investigating Collection Strategies for Building a Twitter Dataset** ..... 205  
Clare Llewellyn, Laura Cram, Adrian Favero (*University of Edinburgh*)
- **BIBSURF: Discover Bibliographic Entities by Searching for Units of Interest, Ranking and Filtering** ..... 207  
Trond Aalberg (*NTNU*), Tanja Merčun, Maja Žumer (*University of Ljubljana*)
- **Mining Advisor-Advisee Relationships in Scholarly Big Data: A Deep Learning Approach** ..... 209  
Wei Wang, Jiaying Liu, Shuo Yu, Chenxin Zhang, Zhenzhen Xu, Feng Xia (*Dalian University of Technology*)
- **Who are the Rising Stars in Academia?** ..... 211  
Jun Zhang, Zhaolong Ning, Xiaomei Bai, Wei Wang, Shuo Yu, Feng Xia (*Dalian University of Technology*)
- **Can you learn it? Probably! Developing Learning Analytics Tools in R** ..... 213  
Giorgio Maria Di Nunzio (*University of Padua*)
- **Characterizing Users Tagging Behavior in Academic Blogs** ..... 215  
Lei Li, Chengzhi Zhang (*Nanjing University of Science & Technology*)
- **Towards Identifying Potential Research Collaborations from Scientific Research Networks using Scholarly Data** ..... 217  
Yanet Garay, Monika Akbar, Ann Q. Gates (*University of Texas at El Paso*)
- **Personal Video Collection Management Behavior** ..... 219  
Sally Jo Cunningham, David M. Nichols, Judy Bowen (*University of Waikato*)
- **Knowledge Extraction for Literature Review** ..... 221  
Tatiana Erekhinskaya, Mithun Balakrishna, Marta Tatu, Steven Werner, Dan Moldovan (*Lymba Corporation*)
- **Question Identification and Classification on an Academic Question Answering Site** .... 223  
Bolanle Ojokoh (*Federal University of Technology*), Tobore Igbe (*Rom-Flex Communication Technology*), Ayobami Araoye, Friday Ameh (*Federal University of Technology*)
- **Increasing Datasets Discoverability in an Engineering Data Platform using Keyword Extraction** ..... 225  
Parthasarathy Gopavarapu, Line C. Pouchard, Santiago Pujol (*Purdue University*)
- **Semantic Bookworm: Mining Literary Resources Revisited** ..... 227  
Annika Hinze, Michael Coleman, Sally Jo Cunningham, David Bainbridge (*University of Waikato*)
- **Making Literature Review and Manuscript Writing Tasks Easier for Novice Researchers through Rec4LRW System** ..... 229  
Aravind Sesagiri Raamkumar, Schubert Foo, Natalie Pang (*Nanyang Technological University*)
- **Can Academic Conferences Promote Research Collaboration?** ..... 231  
Xiaoyan Su, Wei Wang, Shuo Yu, Chenxin Zhang, Teshome Megersa Bekele, Feng Xia (*Dalian University of Technology*)
- **Coagmento 2.0: A System for Capturing Individual and Group Information Seeking Behavior** ..... 233  
Matthew Mitsui, Chirag Shah (*Rutgers University*)
- **Semantometrics: Towards Fulltext-based Research Evaluation** ..... 235  
Drahomira Herrmannova, Petr Knoth (*N/A*)
- **A Supervised Learning Algorithm for Binary Domain Classification of Web Queries using SERPs** ..... 237  
Alexander C. Nwala, Michael L. Nelson (*Old Dominion University*)

• <b>How to Identify Specialized Research Communities Related to a Researcher's Changing Interests</b> .....	239
Hamed Alhoori ( <i>Northern Illinois University</i> )	
• <b>Visualizing Published Metadata in Large Aggregations</b> .....	241
Unmil P. Karadkar, Geoffrey A. Potter, Shengwei Wang ( <i>The University of Texas at Austin</i> )	
• <b>MemGator - A Portable Concurrent Memento Aggregator: Cross-Platform CLI and Server Binaries in Go</b> .....	243
Sawood Alam, Michael L. Nelson ( <i>Old Dominion University</i> )	
• <b>Leveraging Tweet Ranking in an Optimization Frameworkfor Tweet Timeline Generation</b> .....	245
Lili Yao, Feifan Fan, Yansong Feng, Dongyan Zhao ( <i>ICST of Peking University</i> )	
• <b>Evaluating Cost of Cloud Execution in a Data Repository</b> .....	247
Zhiwu Xie, Yinlin Chen, Julie Speer, Tyler Walters ( <i>Virginia Polytechnic Institute and State University</i> )	
• <b>Games for Crowdsourcing Mobile Content: An Analysis of Contribution Patterns</b> .....	249
Dion Hoe-Lian Goh, Ei Pa Pa Pe-Than, Chei Sian Lee ( <i>Nanyang Technological University</i> )	
• <b>A Methodology to Evaluate Triple Confidence and Detect Incorrect Triples in Knowledge Bases</b> .....	251
Haihua Xie ( <i>Peking University, State Key Lab of Digital Publishing Tech &amp; Postdoctoral Workstation of the Zhongguancun Haidian Science Park</i> ), Xiaoqing Lu, Zhi Tang ( <i>Peking University</i> ), Mao Ye ( <i>Beijing Founder Apabi Technology Limited</i> )	
• <b>Open Datasets for Evaluating the Interpretation of Bibliographic Records</b> .....	253
Joffrey Decourselle, Fabien Duchateau ( <i>LIRIS, UMR5205, Université Lyon 1</i> ), Trond Aalberg ( <i>NTNU</i> ), Naimdjion Takhirov ( <i>Westerdals - Oslo School of Arts, Communication and Technology</i> ), Nicolas Lumineau ( <i>LIRIS, UMR5205, Université Lyon 1</i> )	
• <b>An Example of Automatic Authority Control</b> .....	255
Anna Knyazeva ( <i>Tomsk Polytechnic University</i> ), Oleg Kolobov ( <i>Institute of High Current Electronics SB RAS</i> ), Igor Turchanovsky ( <i>Tomsk Polytechnic University</i> )	
• <b>User Activity Characterization in a Cultural Heritage Digital Library System</b> .....	257
Cyrille Suire, Axel Jean-Caurant, Vincent Courboulay, Jean-Christophe Burie, Pascal Estrailleur ( <i>University of La Rochelle</i> )	
• <b>A Mathematical Information Retrieval System Based on RankBoost</b> .....	259
Ke Yuan, Liangcai Gao, Yuehan Wang, Xiaohan Yi, Zhi Tang ( <i>ICST of Peking University</i> )	
• <b>Using Co-authorship Networks for Author Name Disambiguation</b> .....	261
Fakhri Momeni, Philipp Mayr ( <i>GESIS - Leibniz Institute for the Social Sciences</i> )	
• <b>Real-time Filtering on Interest Profiles in Twitter Stream</b> .....	263
Yue Fei, Chao Lv, Yansong Feng, Dongyan Zhao ( <i>Peking University</i> )	
• <b>Preliminary Exploration of the Effect of Time Constraint on Search Interactions on Webpages</b> .....	265
Chang Liu ( <i>Peking University</i> ), Tao Xu ( <i>State University of New York, University at Albany</i> )	
• <b>Exploiting Network Analysis to Investigate Topic Dynamics in the Digital Library Evaluation Domain</b> .....	267
Leonidas Papachristopoulos ( <i>'Athena' Research Centre</i> ), Michalis Sfakakis ( <i>Ionian University</i> ), Nikos Kleidis ( <i>Athens University of Economics &amp; Business</i> ), Giannis Tsakonas ( <i>University of Patras</i> ), Christos Papatheodorou ( <i>Ionian University</i> )	
• <b>Inventor Name Disambiguation for a Patent Database Using a Random Forest and DBSCAN</b> .....	269
Kunho Kim ( <i>The Pennsylvania State University</i> ), Madian Khabsa ( <i>Microsoft Research</i> ), C. Lee Giles ( <i>The Pennsylvania State University</i> )	
• <b>Big Data Processing of School Shooting Archives</b> .....	271
Mohamed Farag, Pranav Nakate, Edward A. Fox ( <i>Virginia Tech</i> )	
• <b>InterPlanetary Wayback: The Permanent Web Archive</b> .....	273
Sawood Alam, Mat Kelly, Michael L. Nelson ( <i>Old Dominion University</i> )	

• <b>Improving Similar Document Retrieval Using a Recursive Pseudo Relevance Feedback Strategy</b> .....	275
Kyle Williams, C. Lee Giles ( <i>The Pennsylvania State University</i> )	
• <b>Curve Separation for Line Graphs in Scholarly Documents</b> .....	277
Sagnik Ray Choudhury, Shuting Wang, C. Lee Giles ( <i>The Pennsylvania State University</i> )	

## Panels

• <b>Issues of Dealing with Fluid Data in Digital Libraries</b> .....	279
Soo-yeon Hwang ( <i>Rutgers University</i> ), Melissa Cragin ( <i>University of Illinois at Urbana-Champaign</i> ), Michael Lesk ( <i>Rutgers University</i> ), Yu-Hung Lin ( <i>Rutgers University Libraries</i> ), Daniel O'Connor ( <i>Rutgers University</i> )	
• <b>Preserving Born-digital News: Challenges and opportunities for collection and access of born-digital journalism</b> .....	281
Edward McCain ( <i>University of Missouri</i> ), Martin Klein ( <i>University of California, Los Angeles</i> ), Matthew Weber ( <i>Rutgers, The State University of New Jersey</i> )	

## Tutorials

• <b>Introduction to Digital Libraries</b> .....	283
Edward A. Fox ( <i>Virginia Tech</i> )	
• <b>Introduction to the Digital Public Library of America API</b> .....	285
Unmil P. Karadkar ( <i>The University of Texas at Austin</i> ), Audrey Altman, Mark Breedlove, Mark Matienzo ( <i>Digital Public Library of America</i> )	
• <b>Information Extraction for Scholarly Digital Libraries</b> .....	287
Kyle Williams, Jian Wu, Zhaohui Wu, C. Lee Giles ( <i>The Pennsylvania State University</i> )	

## Workshop Summaries

• <b>ACHS'16: First International Workshop on Accessing Cultural Heritage at Scale</b> .....	289
Paul D. Clough, Paula Goodale ( <i>University of Sheffield</i> ), Maristella Agosti ( <i>University of Padua</i> ), Séamus Lawless ( <i>Trinity College Dublin</i> )	
• <b>Physical Samples and Digital Libraries</b> .....	291
Unmil P. Karadkar ( <i>The University of Texas at Austin</i> ), Kerstin Lehner ( <i>Columbia University</i> ), Chris Lenhardt ( <i>University of North Carolina at Chapel Hill</i> )	
• <b>WADL 2016: Third International Workshop on Web Archiving and Digital Libraries</b> .....	293
Edward A. Fox, Zhiwu Xie ( <i>Virginia Tech</i> ), Martin Klein ( <i>University of California Los Angeles</i> )	
• <b>5th International Workshop on Mining Scientific Publications (WOSP 2016)</b> .....	295
Petr Knoth ( <i>Mendeley Ltd.</i> ), Drahomira Herrmannova, Lucas Anastasiou, Nancy Pontika ( <i>The Open University</i> )	
• <b>Joint Workshop on Bibliometric-enhanced Information Retrieval and Natural Language Processing for Digital Libraries (BIRNDL 2016)</b> .....	299
Guillaume Cabanac ( <i>University of Toulouse</i> ), Muthu Kumar Chandrasekaran ( <i>NUS School of Computing</i> ), Ingo Frommholz ( <i>University of Bedfordshire</i> ), Kokil Jaidka ( <i>Adobe Systems Inc.</i> ), Min-Yen Kan ( <i>NUS School of Computing</i> ), Philipp Mayr ( <i>GESIS - Leibniz Institute for the Social Sciences</i> ), Dietmar Wolfram ( <i>University of Wisconsin-Milwaukee</i> )	

<b>Author Index</b> .....	301
---------------------------	-----