

Julia Stoyanovich, PhD

- College of Computing & Informatics • Drexel University • 3141 Chestnut Street •
- Philadelphia, PA 19104 • Mobile: 1 (917) 470-8199 • Email: stoyanovich@drexel.edu •

Current Affiliations

- Since 09/2012 Assistant Professor of Computer Science
College of Computing and Informatics
Drexel University, Philadelphia, PA USA
- Since 04/2016 Affiliated Faculty
Center for Information Technology Policy (CITP)
Princeton University, Princeton, NJ USA

Past Academic Appointments

- 09/2012 – 08/2013 Assistant Professor
College of Information Science and Technology (The iSchool)
Drexel University, Philadelphia, PA USA
- 09/2012 – 05/2013 Assistant Professor (part-time)
Skolkovo Institute of Science and Technology (Skoltech)
Moscow, Russia
- 11/2011 – 08/2012 Visiting Scholar
11/2009 – 10/2011 Postdoctoral Researcher, Computing Innovations Fellow
Department of Computer and Information Science
University of Pennsylvania, Philadelphia, PA USA

Education

- PhD in Computer Science*
Columbia University
09/2004 – 10/2009
- ✓ Thesis “Search and Ranking in Semantically Rich Applications.”
 - ✓ Advised by Professor Kenneth A. Ross
- MS in Computer Science*
Columbia University
09/2003 – 05/2004
- ✓ Fully funded through a research assistantship
 - ✓ GPA: 4.0/4.0
- BS in Computer Science*
BS in Mathematics and Statistics
University of Massachusetts Amherst
09/1995 – 08/1998
- ✓ Graduated magna cum laude, GPA 3.73/4.0
 - ✓ Phi Kappa Phi Honor Society
 - ✓ Recipient of the 1997 Du Bois Research Scholarship

Publications

Journal articles

1. “A System for Management and Analysis of Preference Data” (vision paper), M. Jacob, B. Kimelfeld, J. Stoyanovich, *PVLDB 7(12)*, 2014.
2. “Putting Lipstick on Pig: Enabling Database-style Workflow Provenance”, Y. Amsterdamer, S.B. Davidson, D. Deutch, T. Milo, J. Stoyanovich, V. Tannen, *PVLDB 5(4)*, 2011. (18.1% accepted)

3. "AnnotCompute: Annotation-Based Exploration and Meta-analysis of Biological Experiments", J. Zheng, J. Stoyanovich, J. Liu, E. Manduchi, C.J. Stoeckert, Jr., *The Journal of Biological Databases and Curation*, 2011. (3.372 impact factor, 4.510 five-year impact factor)
4. "Efficient Network-Aware Search in Collaborative Tagging Sites", S. Amer-Yahia, M. Benedikt, L. Lakshmanan, J. Stoyanovich, *PVLDB (1)*, 2008. (16.8% accepted)
5. "A Faceted Query Engine Applied to Archaeology", K.A. Ross, A. Janevski, J. Stoyanovich, *Internet Archaeology*, 04/2007.
6. "MutaGeneSys: Making Diagnostic Predictions Based on Genome-Wide Association Data in Genotype Studies", J. Stoyanovich, I. Pe'er, *Bioinformatics*, 12/2007. (4.981 impact factor, 8.136 five-year impact factor)

Conference publications

1. "Data, Responsibly" (tutorial), J. Stoyanovich, S. Abiteboul, G. Miklau, EDBT 2016.
2. "Collaborative Access Control in WebdamLog", V. Z. Moffitt, J. Stoyanovich, S. Abiteboul, G. Miklau, *SIGMOD 2015*.
3. "Rule-based Application Development using Webdamlog" (demonstration), S. Abiteboul, E. Antoine, G. Miklau, J. Stoyanovich, J. Testard, *SIGMOD 2013*.
4. "Understanding Local Structure in Ranked Datasets", J. Stoyanovich, S. Amer-Yahia, S.B. Davidson, M. Jacob, T. Milo, *CIDR 2013*.
5. "Search and Result Presentation in Scientific Workflow Repositories", (full paper) S.B. Davidson, X. Huang, J. Stoyanovich, X. Yuan, *SSDBM 2013*.
6. "Learning to Explore Scientific Workflow Repositories", (short paper) J. Stoyanovich, P. Dhillon, B. Lyons, S.B. Davidson, *SSDBM 2013*.
7. "Learning Feature Weights from Positive Cases", S. Gunawardena, R. O. Weber, J. Stoyanovich, *ICCBR 2013*.
8. "Introducing Access Control in Webdamlog" (invited submission), S. Abiteboul, E. Antoine, G. Miklau, J. Stoyanovich, V. Zaychik Moffitt, *DBPL 2013*.
9. "Viewing the Web as a Distributed Knowledge Base" (invited submission), S. Abiteboul, E. Antoine, J. Stoyanovich, *ICDE 2012*.
10. "Deriving Probabilistic Databases with Inference Ensembles", J. Stoyanovich, S.B. Davidson, T. Milo, V. Tannen, *ICDE 2011*.
11. "Making Interval-based Clustering Rank-aware", J. Stoyanovich, S. Amer-Yahia, T. Milo, *EDBT 2011*.
12. "On Provenance and Privacy" (invited submission), S.B. Davidson, S. Khanna, S. Roy, J. Stoyanovich, V. Tannen, Y. Chen, *ICDT 2011*.
13. "Enabling Privacy in Provenance-aware Workflow Systems", S.B. Davidson, S. Khanna, S. Roy, J. Stoyanovich, V. Tannen, Y. Chen, T. Milo, *CIDR 2011*.
14. "SkylineSearch: Semantic Ranking and Result Visualization for PubMed" (demonstration), J. Stoyanovich, M. Lodha, W. Mee, K.A. Ross, *SIGMOD 2011*.
15. "Semantic Ranking and Result Visualization for Life Sciences Publications", J. Stoyanovich, W. Mee, and K.A. Ross, *ICDE 2010*.
16. "Rank-Aware Clustering for Structured Datasets", J. Stoyanovich, S. Amer-Yahia, *CIKM 2009*.
17. "Schema Polynomials and Applications", K.A. Ross, J. Stoyanovich, *EDBT 2008*.
18. "From del.icio.us to x.qui.site: Recommendations in Social Tagging Sites" (demonstration), S. Amer-Yahia, A. Galland, J. Stoyanovich, C. Yu, *SIGMOD 2008*.

19. "A Faceted Query Engine Applied to Archaeology" (demonstration), K.A. Ross, A. Janevski, J. Stoyanovich, *VLDB 2005*.
20. "Symmetric Relations and Cardinality Bounded Multisets in Database Systems", K.A. Ross and J. Stoyanovich, *VLDB 2004*.

Workshop publications

1. "Analyzing Crowd Rankings", J. Stoyanovich, M. Jacob, X. Gong, *WebDB 2015*.
2. "Keyword Search in Workflow Repositories with Access Control", S.B. Davidson, S.M. Lee, J. Stoyanovich, *AMW 2011*.
3. "Exploring Repositories of Scientific Workflows", J. Stoyanovich, B. Taskar, S. Davidson, *WANDS 2010*.
4. "Leveraging Tagging to Model User Interests in del.icio.us", J. Stoyanovich, S. Amer-Yahia, C. Marlow, C. Yu. *AAAI Spring Symposium on Social Information Processing (AAAI-SIP) 2008*.
5. "EntityAuthority: Semantically-Enriched Graph Based Authority Propagation", J. Stoyanovich, S. Bedathur, K. Berberich, G. Weikum, *WebDB 2007*.

Editorials and Popular Press

1. "Plaidoyer pour une analyse *responsable* des données" (op-ed, in French), S. Abiteboul, J. Stoyanovich, Le Monde, October 12, 2015.
2. "Data, Responsibly" (editorial), S. Abiteboul, J. Stoyanovich, ACM SIGMOD blog, <http://wp.sigmod.org/?p=1900>
3. "The Elephant in the Room: Getting Value from Big Data" (editorial), S. Abiteboul, X. L. Dong, O. Etzioni, D. Srivastava, G. Weikum, J. Stoyanovich, F.M. Suchanek, *WebDB 2015*.

Patents

1. "Automatically and Adaptively Determining Execution Plans for Queries with Parameter Markers", W. Fan, G. Lohman, V. Markl, N. Megiddo, J. Rao, D. Simmen, J. Stoyanovich. US Patent 7,958,113. Assignee: IBM. (cited by 16)
2. "Social Behavior Analysis and Inferring Social Networks for a Recommendation System", S. Amer-Yahia, E. Gabrilovich, B. Pang, J. Stoyanovich, C. Yu. US Patent 8,073,794 (Dec 6, 2011). Assignee: Yahoo! Inc. (cited by 5)

Funding Proposals (Awarded)

1. NSF Grant No.1464327: CRII: Managing preference data. Award Period: 05/01/2015-04/30/2017. Julia Stoyanovich: PI. Award amount \$174,888.
2. BSF Grant No. 2014391: Aggregation methods for partial preferences. Award Period: 09/01/2015-08/31/2017. Julia Stoyanovich: US PI; Benny Kimelfeld: Israeli PI. Award amount \$60,000.
3. NSF Grant No. 1539856: USICCS (BSF supplement): Aggregation methods for partial preferences. Award Period: 09/01/2015-08/31/2017. Julia Stoyanovich: PI. Award amount \$50,000.
4. Drexel Office of the Provost and the Steinbright Career Development Center. Research co-op award. Award Period: 04/07/2014-08/31/2014. Julia Stoyanovich: PI. Award amount \$7,215.
5. NSF Grant No. 0937060: CRA Computing Innovations Fellowship: Data exploration in biological repositories. Award Period: 11/01/2009-10/31/2011. Julia Stoyanovich: CIFellow, Susan B. Davidson: mentor. Award amount \$267,500.

6. Google Research Award: Identifying ranked agreement among raters. Award Period: 12/01/2011-12/31/2012. Julia Stoyanovich: PI. Award amount \$10,000.

Research Experience

- 09/2012 – currently Assistant Professor of Computer Science
College of Computing & Informatics
Drexel University, Philadelphia, PA, USA
- ✓ Preference data management and analysis
 - ✓ Fairness and transparency in data analysis
 - ✓ Querying and analysis of evolving graphs
 - ✓ Personalized information discovery
- 11/2011 – 08/2012 Visiting Scholar
- 11/2009 – 10/2011 Postdoctoral Researcher / Computing Innovations Fellow
Department of Computer and Information Science
University of Pennsylvania, Philadelphia, PA, USA
Supervised by Professor Susan B. Davidson
- ✓ Scientific workflows and provenance
 - Exploring repositories of scientific workflows
 - Managing and querying workflow provenance
 - Security and privacy
 - ✓ Search and ranking in semantic context
 - Rank-aware clustering
 - Modeling ranked agreement
 - ✓ Probabilistic data management: deriving probabilistic databases from incomplete data
- 09/2003 – 10/2009 Graduate Research Assistant
Department of Computer Science
Columbia University, New York NY USA
Advised by Professor Kenneth A. Ross
- ✓ Doctoral thesis “Search and Ranking in Semantically Rich Applications”
 - ✓ Research in data representation in complex domains, in scope of two projects
 - Computational Tools for Modeling, Visualizing and Analyzing Archaeological Sites
 - MAGNet: Multiscale Analysis of Genomic and Cellular Networks
- Summer 2008 Research Intern
- Summer 2007 Community Systems and Social Systems Groups
Yahoo! Research, New York NY USA
Supervised by Dr. Sihem Amer-Yahia
- ✓ Data representation and processing techniques for social information sites
 - ✓ Rank-aware exploration of structured datasets
- Summer 2006 Research Intern
Databases and Information Systems Group
Max-Planck Institut für Informatik, Saarbruecken, Germany
Supervised by Professor Gerhard Weikum
- ✓ Semantically enriched ranking for graphs such as Wikipedia and the Web
- Summer 2005 Research Intern
Advanced Optimization Group

IBM Almaden Research Center, San Jose, CA, USA
Supervised by Jun Rao, Volker Markl, and Guy Lohman

- ✓ Novel query optimization techniques for the DB2 optimizer

02/1998 – 08/1998 Undergraduate Research Assistant
01/1996 – 03/1997 Center for Knowledge Communication
Department of Computer Science, UMass Amherst, MA USA
Supervised by Dr. Joseph Beck

- ✓ Example generation strategies and UI design for an Intelligent Mathematics Tutor

Teaching Experience

- ✓ Computer Science Drexel University Instructor, Summer 2014, Summer 2015
Database Theory (CS 500)
- ✓ Computer Science Drexel University Instructor, Spring 2015
Database Systems (CS 461)
- ✓ The iSchool Drexel University Instructor, Fall 2012, Winter 2013
Database Systems (INFO 210)
- ✓ Computer and Information Science University of Pennsylvania Instructor, Spring 2012
Data structures and algorithms with Java (CIS 121)
Instructor, Fall 2010
Advanced topics in databases: information discovery in massive datasets (CIS 650), co-taught with Susan Davidson
- ✓ Computer Science Columbia University Instructor, Summer 2009
Object-oriented programming and design in Java (COMS 1007)
Teaching Assistant, Spring 2006 and Spring 2007
Advanced database systems (COMS 6111)
- ✓ Joint EDBT / RussIR Summer School Saint Petersburg, Russia Instructor, Summer 2011
Top-K processing for search and information discovery in social applications, co-taught with Sihem Amer-Yahia
- ✓ Encoda Systems, New York, NY Instructor, Spring 2003
Technical seminars on foundations of relational database systems
- ✓ Science Enrichment Program University of Massachusetts Amherst Teaching Assistant, Summer 1996
Introduction to programming, a course for high-school students

Industry Experience

08/2001 – 08/2003 Database Developer and Administrator
Encoda Systems, New York NY USA

08/2000 – 07/2001 Web and Database Developer
MediaPartnerships, New York, NY USA

- 09/1998 – 08/2000 Database Developer
Juno Online Services, New York NY USA
- 09/1997 – 01/1998 Programmer-Intern
Hewlett-Packard, Medical Equipment R&D, Böblingen, Germany

Professional Activities

- ✓ Workshop chair: WebDB 2015 (co-chair with Fabian Suchanek)
- ✓ Dagstuhl seminar co-organizer: Data, Responsibly, July 2016
- ✓ New Researcher Symposium co-chair: ACM SIGMOD 2015, ACM SIGMOD 2016
- ✓ Area editor: Information Systems Journal (since 2016)
- ✓ Review board member: PVLDB (2016-17, 2014-15, 2012-13)
- ✓ Program committee member (conferences): ACM SIGMOD (2017, 2016, 2015, 2013), ACM SIGIR (2014, 2013), ACM WSDM (2015), IEEE ICDE (2013, 2011), EDBT (2016, 2013, 2011), WWW (2013, 2012), SSDBM (2014, 2012), IEEE CIKM 2010, VLDB 2009
- ✓ Program committee member (workshops): HotCloud 2016, ExploreDB 2016, AMW 2012, WebDB (2012, 2011), DBSocial 2012, SMANE 2012, SIASP 2010
- ✓ Reviewer: IEEE TKDE (2013, 2012, 2011), CACM 2012, ACM TODS (2012, 2011, 2008), ACM TWeb (2012), ACM TOSEM 2010, Bioinformatics 2011, Information Systems (2013, 2012), SNAM (2014, 2011)
- ✓ External reviewer: SIGMOD 2008, VLDB 2008, VLDB 2006
- ✓ Workshops selection co-chair: ACM SIGMOD 2017
- ✓ Panel selection co-chair: IEEE ICDE 2017
- ✓ Proceedings chair: EDBT/ICDT 2011
- ✓ Web chair: PersDB 2009
- ✓ Local arrangements chair: Spring 2008 North East DB/IR Day

Invited Talks

- ✓ Telecom ParisTech 1/21/2016
- ✓ Oxford, Information Systems Seminar, 1/19/2016
- ✓ Kings College London, Informatics Seminar, 1/18/2016
- ✓ University of Helsinki, CS colloquium, 9/11/2014
- ✓ Aalto University, ICS forum, 9/10/2014
- ✓ University of Chicago, CS colloquium, 3/15/2013
- ✓ Drexel University, BIOMED seminar, 2/1/2013
- ✓ SkTech / MIT seminar, 5/17/2012
- ✓ Portland State University, CS colloquium, 4/16/2012
- ✓ Florida International University, CIS colloquium, 4/6/2012
- ✓ VirginiaTech, CS colloquium, 3/20/2012
- ✓ Max Planck Institute for Software Systems, SWS colloquium, 3/15/2012
- ✓ University of Waterloo, CS colloquium, 2/15/2012
- ✓ Stevens Institute of Technology, CS colloquium, 1/23/2012
- ✓ Max Planck Institute for Informatics, Databases and Information Systems colloquium, 12/13/2011
- ✓ INRIA/Telecom ParisTech, DBWeb-Webdam seminar, 12/5/2011
- ✓ Drexel University, iSchool colloquium, 11/30/2011
- ✓ University of Pittsburgh, CS colloquium, 11/28/2011
- ✓ Harvard University, Systems Research at Harvard (SYRAH) colloquium, 10/28/2011
- ✓ MIT, Computer Science and Artificial Intelligence Laboratory (CSAIL) colloquium, 10/27/2011
- ✓ Boston University, Hariri seminar, 10/26/2011

- ✓ Yandex, Moscow, Russia, Research colloquium, 8/23/2011
- ✓ Northeastern University, CCS colloquium, 3/18/2011
- ✓ Illinois Institute of Technology, CS colloquium, 2/28/2011
- ✓ IBM Watson, Research Colloquium, 2/11/2011
- ✓ Yahoo! Research Barcelona, 12/16/2010
- ✓ Polytechnic Institute of NYU, CSE colloquium, 04/06/2010
- ✓ University of Southern California, CS colloquium, 03/01/2010
- ✓ University of Pennsylvania, Computational Biology and Informatics (CBIL) colloquium, 01/21/2010
- ✓ University of Pennsylvania, Database Group colloquium, 04/22/2009
- ✓ Technical University of Berlin, Database and Information Management (DIMA) colloquium, 01/19/2009

Advising and Mentoring

- ✓ PhD students: Vera Moffitt (Drexel); Haoyue Ping (Drexel), Ke Yang (Drexel), Xiaocheng Huang (UPenn, visiting student, co-advised with Prof. Susan Davidson)
- ✓ MS students: Anastasia Uryasheva (Skoltech), Matthew Bucci (Drexel), Akhil Kapoor (Drexel)
- ✓ BS students: Halima Olapade (Drexel), Simona D'Avanzo (Drexel), Shishir Kharel (Drexel), Charles Gilliam (Drexel)
- ✓ ReThink @ Drexel mentor (summer 2014), research experience for high school Computer Science teachers
- ✓ Faculty mentor, Drexel University Women in Computing Society (WiCS), 2015-16

Honors and Awards

- ✓ CRA Computing Innovations Fellow, 2009-2010 and 2010-2011
- ✓ Recipient of 2008 Michelman award for service to the Computer Science Department, Columbia University
- ✓ Recipient of 1997 DuBois Undergraduate Research Scholarship, University of Massachusetts, Amherst

Leadership

- ✓ Senator, Columbia University Senate, member of the Senate Education Committee, 09/2006-05/2007
- ✓ Dean Search Committee, Columbia University, School of Engineering and Applied Science, Spring 2008
- ✓ Steering Committee Member, Columbia University Graduate Student Advisory Council, 09/2004 – 05/2009

Languages fluent in English, German, Russian, and Serbian; intermediate Italian.