

# Julia Stoyanovich

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## Research Interests

In my research I explore ways to incorporate semantic context into search and ranking. I am particularly motivated by the data management needs of life sciences applications and of social information processing.

## Education

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

## Publications

### Search and Ranking in the Semantic Context

1. “Semantic Ranking and Result Visualization for Life Sciences Publications”, Julia Stoyanovich, William Mee, and Kenneth Ross, *ICDE 2010* (12.5% accepted).
2. “Rank-Aware Clustering for Structured Datasets”, Julia Stoyanovich and Sihem Amer Yahia, *CIKM 2009* (short paper).
3. “Efficient Network-Aware Search in Collaborative Tagging Sites”, Sihem Amer Yahia, Michael Benedikt, Laks Lakshmanan, Julia Stoyanovich, *VLDB 2008*(16.5% accepted).
4. "From del.icio.us to x.qui.site: Recommendations in Social Tagging Sites", Sihem Amer Yahia, Alban Galland, Julia Stoyanovich, Cong Yu, *SIGMOD 2008* (demonstration).
5. "Leveraging Tagging to Model User Interests in del.icio.us", Julia Stoyanovich, Sihem Amer Yahia, Cameron Marlow, Cong Yu. *AAAI Spring Symposium on Social Information Processing (AAAI-SIP) 2008*.
6. “EntityAuthority: Semantically-Enriched Graph Based Authority Propagation”, Julia Stoyanovich, Srikanta Bedathur, Klaus Berberich, Gerhard Weikum, *WebDB 2007* (25% accepted).

### Data Representation in Complex Domains

7. “Schema Polynomials and Applications”, Kenneth Ross, Julia Stoyanovich, *EDBT 2008* (16.7% accepted).
8. "Symmetric Relations and Cardinality Bounded Multisets in Database Systems", Kenneth Ross and Julia Stoyanovich, *VLDB 2004* (16.1% accepted).

## Advanced Applications

9. “MutaGeneSys: Making Diagnostic Predictions Based on Genome-Wide Association Data in Genotype Studies“, Julia Stoyanovich, Itsik Pe’er, *Bioinformatics*, 12/2007 (5.039 impact factor).
10. “A Faceted Query Engine Applied to Archaeology”, Kenneth Ross, Angel Janevski, Julia Stoyanovich, *Internet Archaeology*, 04/2007.
11. “A Faceted Query Engine Applied to Archaeology”, Kenneth Ross, Angel Janevski, Julia Stoyanovich, VLDB 2005 (demonstration).

## **Research Experience**

- 11/2009 – currently      Postdoctoral Researcher, Computing Innovations Fellow  
Department of Computer and Information Science  
University of Pennsylvania, Philadelphia, PA, USA
- ✓ Research on data management for biological applications
- 09/2003 – 10/2009      Graduate Research Assistant  
Database Research Group, Department of Computer Science  
Columbia University, New York NY USA
- ✓ 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 Historic and Archaeological Sites
    - MAGNet: Multiscale Analysis of Genomic and Cellular Networks
  - ✓ Advised by Professor Kenneth A. Ross
- Summer 2008              Research Intern  
Summer 2007              Community Systems and Social Systems Groups  
Yahoo! Research, New York NY USA
- ✓ Developed novel data representation and query processing mechanisms for the domain of social information processing
  - ✓ Formalized the problem or rank-aware clustering for structured datasets
  - ✓ Supervised by Sihem Amer Yahia
- Summer 2006              Research Intern  
Databases and Information Systems Group  
Max-Planck Institut für Informatik, Saarbruecken, Germany
- ✓ Developed a semantically enriched ranking framework for graphs such as Wikipedia and the World Wide Web
  - ✓ Supervised by Gerhard Weikum
- Summer 2005              Research Intern  
Advanced Optimization Group  
IBM Almaden Research Center, San Jose, CA, USA
- ✓ Researched and prototyped novel query optimization techniques for the DB2 optimizer
  - ✓ Supervised by Jun Rao, Volker Markl, and Guy Lohman

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

- ✓ Worked on example generation strategies and user interface design for an Intelligent Mathematics Tutor

### Teaching Experience

- ✓ Columbia University  
Department of Computer Science  
Summer 2009  
Instructor  
Object-oriented programming and design in Java (COMS 1007)
- ✓ Columbia University  
Department of Computer Science  
Spring 2006, Spring 2007  
Teaching Assistant  
Advanced Database Systems (COMS 6111)
- ✓ Encoda Systems, New York, NY  
Spring 2003  
Conducted technical seminars on foundations of relational database systems, and on the Oracle platform
- ✓ University of Massachusetts Amherst  
Science Enrichment Program (SEP)  
Summer 1996  
Teaching Assistant  
Introduction to programming for minority 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

- ✓ Program Committee member, VLDB 2009 Experiments and Analysis Track
- ✓ Reviewer for Transactions on Database Systems (TODS)
- ✓ Spring 2008 North East DB/IR Day local arrangements chair
- ✓ PersDB 2009 web chair
- ✓ External reviewer for VLDB 2006, VLDB 2008, SIGMOD 2008
- ✓ ACM SIGMOD student member since 2003, professional member since 2009

### Honors and Awards

- ✓ Computing Innovations Fellow, 2009-2010
- ✓ Recipient of 2007-2008 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 09/2006-05/2007
  - Member of the Senate Education Committee
- ✓ Dean Search Committee, School of Engineering and Applied Science, Spring 2008
- ✓ Steering Committee Member, Graduate Student Advisory Council (Columbia University graduate student government), 09/2004 – 05/2009

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

## References

Professor Kenneth A. Ross  
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Additional references are available and will be furnished upon request.