

Research Interests

Semantic Web, Knowledge Representation, Computer Networks, Service-Oriented Computing, and Ubiquitous and Pervasive Computing.

Education**Columbia University**

Ph.D., Computer Science - Defended May 2008

Advisor: Henning G. Schulzrinne

Thesis: Ontology-based Context-aware Service Discovery in a Globally Distributed Network

Columbia University

M.Phil. Computer Science - October 2004

Columbia University

M.S. Computer Science - October 2001

Queens College of the City University of New York

B.S. Major: Computer Science, Minor: Mathematics - June 1998

Citizenship

USA

Work Experience**Federal Reserve Bank of New York**

*Senior Associate, Knowledge Engineer in
Technology Strategy*

Conducting research in semantic web technologies and text analytics to add structure and meaning to financial data and design frameworks for predictive modeling.

New York, NY

February 2016 to Present

Hofstra University

Assistant Professor of Computer Science

Teaching:

- Introductory courses in Computer Science and Discrete Structures
- Advanced course in Semantic Web
- Advised 5 students in senior design, independent study and research projects.

Hempstead, NY

September 2014 to December 2015

Research:

Leading the Big Data Lab and conducting research in Semantic Web, Service-Oriented and Context-aware Computing

Linked Data Analysis: This project is in collaboration with Nuance Communications. We are trying to find out how often various parts of the schema.org ontology (and in the future other types of linked data such as DBpedia and WikiData) are used and are necessary. We will then use this information to produce a specification for the schema.org language based on how schema.org markup is actually used. We are using a large Schema.org data set from Web Data Commons, the Virtuoso Universal Server linked data quad store for storage and issuing SPARQL queries and the JENA API for ontology processing.

Bell Labs, Alcatel-Lucent

Member of Technical Staff

The goal of my research is to find different ways to create and use semantic web technologies

Antwerp, Belgium and Murray Hill, NJ

February 2009 to Present

towards establishing a personalized network of services. Ontologies are used to describe, discover, and compose services in a global network. They are also used to describe a user's context, profile and preferences. I am currently working on projects that explore different aspects of ontology creation, distribution and querying for establishing a personalized network of services. For comprehensive information regarding my work, please visit my research statement.

Columbia University

Adjunct Professor

New York, NY

Fall 2013, Spring 2011

Designed and taught a graduate level class titled: *Introduction to Semantic Web*.

Columbia University

Postdoctoral Research Scientist

New York, NY

July 2008 - December 2008

Part of the Internet Real-Time Laboratory's ITA (International Technology Alliance in Network and Information Science) project. Working on communication content analysis to discover semantic and topic similarities in order to detect success or potential failure in communication.

Columbia University

Graduate Research Assistant

New York, NY

Oct 2001 - May 2008

Part of the Internet Real-Time Laboratory developing GloServ, an ontology-based context-aware service discovery system which operates in a globally distributed network. Created a service discovery architecture that uses a description logic ontology for classifying services and mapping it onto a hierarchical peer-to-peer network.

IBM Research Labs

Summer Intern

Hawthorne, NY

Jun 2004 - Sept 2004

Designed and implemented a document file collaboration system on pervasive devices. Created a SIP extension to handle document file collaboration between multiple endpoints. Implemented a prototype on a desktop and a Pocket PC, in J2ME, JNI and C++ using IBM WebSphere Device Developer and Microsoft Embedded Visual C++.

Avaya Research Labs

Summer Intern

Basking Ridge, NJ

Jun 2002 - Sept 2002

Developed an enterprise communication system where Bluetooth devices are able to communicate with each other and make outbound calls using the Session Initiation Protocol.

Summit Systems, Inc.

Product Developer

New York, NY

Jul 1998 - Feb 2000

Developed software in the back office group to produce documents for payment messages, and trade tickets. Trained new hires on the business and technical aspects of the Summit applications.

Teaching

Dept. of Computer Science, Hofstra University, Hempstead, NY, 2014-Present:

- Asst. Professor, *Fundamentals of Computer Science I*
- Asst. Professor, *Discrete Structures*
- Asst. Professor, *Semantic Web*
- Asst. Professor, *Independent Design*

Dept. of Computer Science, Columbia University, NY, NY:

- Adj. Professor, *Introduction to Semantic Web*, Spring 2011 and Fall 2013
- Instructor, *Data Structures in C*, Spring 2007
- Instructor, *Introduction to Computer Science in C*, Fall 2006

– Teaching Assistant, *Computer Networks*, Spring 2002

Dept of Computer Science, Queens College, CUNY, Flushing, NY:

– Teaching Assistant *Data Structures*, Fall 1995

– Private Tutor, em Mathematics and Computer Science, 1996-1998

Publications

K. Arabshian and P. Danielsen, *Ontology-based Faceted Search Interface for APIs*, ACM Transactions on the Web (In Submission).

P. Danielsen and K. Arabshian, *User Interface Design in Semi-Automated Ontology Construction*, International Conference on Web Services (ICWS 2013), Santa Clara, CA, June 2013.

K. Arabshian and T. Cauble, *COnTag: A Framework for Personalized Context-aware Search of Ontology-based Tagged Data*, International Conference on Web Services (ICWS 2012), Honolulu, Hawaii, June 2012.

K. Arabshian, P. Danielsen and S. Afroz, *LexOnt: Semi-Automatic ontology Creation Tool for Programmable Web*, AAAI 2012 Spring Symposium on Intelligent Web Services Meet Social Computing, Palo Alto, CA, March 2012.

K. Arabshian and P. Danielsen, *Semi-automated Ontology Creation for High-level Service Classification* 7th International Conference on Semantics, Knowledge and Grids (SKG 2011), Beijing, China, Oct 2011.

V. Beltran, K. Arabshian and H. Schulzrinne *Ontology-based User-defined Rules and Context-aware Service Composition System* 4th International Workshop on Resource Discovery (RED 2011), Heraklion, Greece, May 2011.

K. Arabshian *A Framework for Personalized Context-aware Search of Ontology-based Tagged Data* 7th International Conference on Services Computing (IEEE SCC 2010) Work-In-Progress, Miami, FL, July 2010.

K. Arabshian and A. Mehta, *Distributed Service Composition and Execution Framework* 6th World Congress on Services (IEEE Services 2010) Poster Session, Miami, FL, July 2010.

K. Daenen, B. Theethen, D. Vanderfeesten, B. Vrancken, E. Waegeman, J. Moons, M. Dragan, M. Bojin, M. Strugaru, K. Arabshian and P. Bosch, *The Personal Internet*, Bell Labs Technical Journal 15(1), 3-22 2010.

K. Arabshian, C. Dickmann, and H. Schulzrinne, *Ontology-based Service Discovery Front-end Interface for GloServ*, The 6th Annual European Semantic Web Conference (ESWC2009), Heraklion, Greece, May 2009

PhD Thesis: Knarig Arabshian, href<http://www.cs.columbia.edu/~knarig/thesis.pdf> *Ontology-based Service Discovery in a Globally Distributed Network*, PhD Thesis, Computer Science Department, Columbia University, New York, NY 10027, May 2008

K. Arabshian and H. Schulzrinne, *An Ontology-based Hierarchical Peer-to-Peer Global Service Discovery System*, Journal of Ubiquitous Computing and Intelligence Volume 1, Number 2, pp 133-144, December 2007.

K. Arabshian, C. Dickmann, H. Schulzrinne, *Service Composition in an Ontology-based Global*

Service Discovery System, Columbia University Technical Report CUCS-033-07, New York, NY, September 2007 (Under Submission).

K. Arabshian and H. Schulzrinne, *Combining Ontology Queries with Key Word Search in Service Discovery*, ACM/IFIP/USENIX 8th International Middleware Conference, Work In Progress Track, Newport Beach California, November 2007.

K. Arabshian and H. Schulzrinne, *Distributed Context-aware Agent Architecture for Global Service Discovery*, The Second International Workshop on Semantic Web Technology For Ubiquitous and Mobile Applications (SWUMA'06), Trentino, Italy, August 2006.

K. Arabshian and H. Schulzrinne, *Hybrid Hierarchical and Peer-to-Peer Ontology-based Global Service Discovery System*, Columbia University Technical Report CUCS-016-05, New York, NY, April 2005.

K. Arabshian, H. Schulzrinne, D. Trossen, and D. Pavel, *GloServ: Global Service Discovery using the OWL Web Ontology Language*, International Workshop on Intelligent Environments, Colchester, England, June 2005.

K. Arabshian and H. Schulzrinne, *GloServ: Global Service Discovery Architecture*, First Annual International Conference on Mobile and Ubiquitous Systems: Networking and Services (Mobiquitous), Boston, MA, August, 2004.

K. Arabshian and H. Schulzrinne, *A Generic Event Notification System Using XML and SIP* 3rd New York Metro Area Networking Workshop (NYMAN), Brooklyn, NY, September 2003.

K. Arabshian and H. Schulzrinne, *A SIP-based Medical Event Monitoring System*, 5th International Workshop on Enterprise Networking and Computing in Healthcare Industry (Healthcom 2003), Santa Monica, CA, June 2003.

H. Schulzrinne and K. Arabshian, *Providing Emergency Services in Internet Telephony*, IEEE Internet Computing Magazine May/June 2002 (Vol. 6 No. 3) and SPIE Proceedings Vol 4868, Boston, MA, 2002.

Professional Activities

TPC Member

- International Semantic Web Conference (ISWC 2010, 2011, 2013)
- American Association of Artificial Intelligence (AAAI 2013)
- IEEE International Conference on Web Services (ICWS 2013, 2014)
- International Conference on Semantics, Knowledge and Grids (SKG 2012, 2013)
- International Wireless Summit (IWS 2013)
- IEEE International Conference On Internet Multimedia Systems Architecture and Application (IMSAA 2010, 2011)
- IEEE Global Communication Conference (GLOBECOMM 2008, 2009, 2010, 2011, 2012)
- IEEE International Conference on Communications (ICC 2003, 2009, 2010, 2011)
- IEEE International Symposium on Multimedia (ISM 2006)

Reviewer

- ACM Transactions on the Web 2013
- IEEE Transactions on Services Computing 2013, 2014

- Wiley Journal on Software: Practice and Experience 2009
- IEEE International Conference on Web Services (ICWS 2009)
- IEEE International Conference on Communications (ICC 2005, 2006, 2007)

Faculty Advisor of Women in Computer Science ACM-W Chapter at Hofstra University Spring 2015-Present

Student Activities

Vice President, Women In Computer Science, Department of Computer Science, Columbia University, 2005-2006

PhD Representative, Department of Computer Science, Columbia University, 2003-2005

Honors and Awards

Computer Science Department Preceptorship, Columbia University, 2006-2007

Computer Science Department Service Award, Columbia University, 2006, 2007

Fellowship Grant Recipient, Nokia Research Center, 2004-2007

Dean's List, Queens College, 1994 - 1998

Computer Science Departmental Award for Achievement of Excellence, Queens College, 1998

UPE Association Computer Science Honor Society, Queens College, 1996-1998

Presidential Achievers Honor Roll, Queens College, 1995-1996

Member of Honors in Mathematics and Natural Sciences, Queens College, 1994-1998

References

Henning G. Schulzrinne

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Federal Communications Commission, Washington D.C.
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Dirk Trossen

Cambridge University, UK
InterDigital, UK
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Peter F. Patel-Schneider

Nuance Communications, SunnyVale, CA
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Peter Bosch

Cisco Systems, NL
pbosch@cisco.com