

VARISH MULWAD

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SUMMARY

My research interests and projects have broadly focused on extracting information and adding semantics to unstructured or semi-structured data by applying techniques from The Semantic Web, machine learning, text analysis to problems in the general web, healthcare, and, security domains.

SKILLS

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- Programming Languages: C#, Java, C, C++.
 - Tools and Technologies: Microsoft Visual Studio, SQL Server, IntelliJ, mongoDB.
 - Semantic Web Tools and Technologies: RDF, OWL, SPARQL, Protege.

EDUCATION

Ph.D. in Computer Science, University of Maryland, Baltimore County, Spring 2015
CGPA – 3.67 out of 4.0; **Advisor** – Dr. Tim Finin

Ph.D. Dissertation Research: *TABEL* – A domain independent and extensible framework for inferring the semantics of tables and representing them as RDF Linked Data • Joint inference of semantics using a probabilistic graphical model • Developed a novel *Semantic Message Passing* technique for inference • Evaluation over web tables and medical tables • More: <http://ebiq.org/j/96>

Dissertation Committee – Drs. Tim Finin, Anupam Joshi, Tim Oates, Yun Peng (UMBC), Drs. L V Subramaniam, Indrajit Bhattacharya (IBM Research, India)

Masters of Science in Computer Science, University of Maryland, Baltimore County, August 2010
CGPA – 3.75 out of 4.0; **Advisor** – Dr. Tim Finin

Thesis – *T2LD* – An automatic framework for extracting, interpreting and representing tables as linked data; Thesis Committee – Drs. Tim Finin, Anupam Joshi, Tim Oates (UMBC), Dr. Evelyne Viegas (Microsoft Research)

Bachelor of Engineering in Computer Science and Engineering, University of Mumbai, December 2007, **Final Year Project**: *The Interview Scheduler* – A web based application for scheduling interviews.

WORK HISTORY

Ebiquity Research Lab, UMBC (Sep. 2009 – present)

Research Assistant (Location: Baltimore, MD, USA)

- Research projects: 1) Extracting concepts describing security vulnerabilities from text; 2) Infoboxer: Using Statistical and Semantic Knowledge to Help Creating Wikipedia Infoboxes.
- Gained experience in writing grant proposals by contributing to govt. and industry proposals.

Microsoft Research (May 2012 – August 2012)

Research Intern (Location: Redmond, WA, USA)

- Project focused on information extraction from text descriptions associated with apps in the Windows Phone Store. Mentor: Dr. Evelyne Viegas. US patent application (WO 2014093911 A2) filed based on internship work.

Microsoft Bing (June 2011 – August 2011)

Software Development Engineer Intern (Location: Bellevue, WA, USA)

- Developed a prototype to demonstrate the use of entity disambiguation to improve search results.
- Two disclosures filed with Microsoft for patent consideration.

Symantec Corporation (May 2009 – Aug. 2009)

Intern (Location: Columbia, MD, USA)

- Acquired knowledge of Symantec's internal IPC tool and provided inputs to the design team.
- Developed a tool for automated testing of the SEPEX Proxy DLL.
- Proposed a design of a more generic automated test tool to test any given DLL.

Ness Technologies India (Jan. 2008 – June 2008)

Intern (Project Trainee) (Location: Mumbai, MH, India)

- Prepared and presented a Test–Automation prototype for a Ness client.
- Developed an application independent Test–Automation framework.

Mastek India (June 2006 – March 2007)

Final year undergraduate project (Location: Mumbai, MH, India)

- Developed “The Interview Scheduler” – a web based application used by the Human Resource department to schedule interviews between candidates and interviewers. Project website: <http://www.projecttis.co.nr>

PUBLICATIONS ¹

Total citations: 108 • h-index: 6 • i10-index: 4 [as of Jan. 2015]

Book Chapters

- **Varish Mulwad**, Tim Finin and Anupam Joshi, “A Domain Independent Framework for Extracting Linked Semantic Data from Tables”, In Search Computing, ISBN 978-3-642-34212-7, vol. 7538, 2012.

Conferences

- **Varish Mulwad**, Tim Finin and Anupam Joshi, “Interpreting Medical Tables as Linked Data to Generate Meta–Analysis Reports”, In 15th IEEE Int. Conf. on Information Reuse and Integration (IRI 2014), San Francisco, USA, 2014.
- **Varish Mulwad**, Tim Finin and Anupam Joshi, “Semantic Message Passing for Generating Linked Data from Tables”, In 12th Int. Semantic Web Conf. (ISWC 2013), Sydney, Australia, 2013.
- Zareen Syed, Tim Finin, **Varish Mulwad**, and Anupam Joshi, “Exploiting a Web of Semantic Data for Interpreting Tables”, In 2nd Web Science Conference (WebSci 2010), Raleigh, NC, USA, 2010.

Doctoral Consortium

- **Varish Mulwad**, “DC Proposal: Graphical Models and Probabilistic Reasoning for Generating Linked Data from Tables”, In 10th Int. Semantic Web Conf. (ISWC 2011), Bonn, Germany, 2011.

Workshops

- **Varish Mulwad**, Tim Finin and Anupam Joshi, “Automatically Generating Government Linked Data from Tables”, In AAAI Fall Symposium on Open Government Knowledge: AI Opportunities and Challenges (OGK 2011), Arlington, VA, USA, 2011.
- **Varish Mulwad**, Tim Finin and Anupam Joshi, “Generating Linked Data by Inferring the Semantics of Tables”, In 1st Int. Workshop on Searching and Integrating New Web Data Sources (VLDS 2011), held at 37th Int. Conf. on Very Large Databases (VLDB 2011), Seattle, USA, 2011.
- **Varish Mulwad**, Wenjia Li, Anupam Joshi, Tim Finin and Krishnamurthy Viswanathan, “Extracting Information about Security Vulnerabilities from Web Text”, In Web Intelligence for Information Security Workshop, held at IEEE/WIC/ACM Int. Conf. on Intelligent Agent Technology (WI–IAT 2011), Lyon, France, 2011.
- **Varish Mulwad**, Tim Finin, Zareen Syed and Anupam Joshi, “Using linked data to interpret tables”, In 1st Int. Workshop on Consuming Linked Data, held at the 9th Int. Semantic Web Conf. (ISWC 2010), Shanghai, China, 2010.

Posters

- Roberto Yus, **Varish Mulwad**, Tim Finin, and Eduardo Mena, “Infoboxer: Using Statistical and Semantic Knowledge to Help Create Wikipedia Infoboxes”, In 13th Int. Semantic Web Conf. (ISWC 2014), Riva del Garda, Italy, 2014.
- **Varish Mulwad**, Tim Finin, Zareen Syed and Anupam Joshi, “T2LD: Interpreting and Representing Tables as Linked Data” In 9th Int. Semantic Web Conf. (ISWC 2010), Shanghai, China, 2010.

GRANT PROPOSALS

- Significant contributions to the National Science Foundation (NSF) proposal “EAGER: T2K: From Tables to Knowledge”; **awarded (\$200,000)**; PI – Dr. Anupam Joshi; CO–PI – Dr. Tim Finin.

¹available for download at <http://ebiq.org/h/Varish/Mulwad>; citation data available here: <http://goo.gl/S2fJc>

PROFESSIONAL ACADEMIC ACTIVITIES

- President, UMBC ACM student chapter (2012 – 2013).
- **Program Committee Member**
 - 2nd Int. Workshop on Linked Data for Information Extraction (LD4IE 2014 at ISWC 2014).
 - 28th AAAI Conf. on Artificial Intelligence (AAAI 2014).
 - 2nd Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL 2012).
 - 1st Int. Workshop on Knowledge Discovery and Data Mining Meets Linked Open Data (Know@LOD 2012 at ESWC 2012).
- **Reviewer for Journals**
 - ACM Transactions on the Web (TWEB) (2014).
 - IEEE Transactions on Knowledge and Data Engineering (TKDE) (2013).
 - The VLDB journal's special issue on Structured, Social and Crowd-sourced Data (VLDBJ) (2012).
 - IEEE Intelligent Systems special issue on Linked Open Government Data (2011).

RELEVANT ACADEMIC PROJECTS

Extracting Information about Security Vulnerabilities from Web Text (UMBC, Spring 2011) Research

- Developed a framework for extracting concepts describing security vulnerabilities from text.
- Developed a concept extraction algorithm which exploits a Wikipedia based knowledge base and a computer security exploits taxonomy extracted from Wikipedia to detect concepts describing vulnerabilities.

Distributed Application for Mathematical Computations using Hadoop (UMBC, Fall 2009) Course: Advanced Operating Systems

- Designed a distributed application using Hadoop to compute Minimum, Maximum, Average and Median for floating point numbers.

Query Analyzer Engine (UMBC, Spring 2009) Course: Principles of Database Systems

- Designed a query processing engine which handled Select, Project, Grouping, Aggregation and Join queries. Technologies used: C#, Visual Studio 2008.

Climate Modelling (UMBC, Fall 2008) Course: Service Oriented Computing

- Developed a set of web-services to expose the information inside Climate Models provided by IPCC Data Center. Technologies used: Java, NetBeans 6.1, Apache Tomcat 6, Axis 2, Visual Studio 2005.
- Report: <http://www.cs.umbc.edu/~varish1/documents/CMSC691SF08Project.pdf>

HONORS AND AWARDS

- NSF awards for travel to the 13th (2014), 12th (2013), 10th (2011) and 9th (2010) Int. Semantic Web Conf.
- Best PhD research award, UMBC CSEE department's annual research review meet (2013).
- First place (2012) and Third place (2011), Poster presentation competition, UMBC CSEE department's annual research review.
- Outstanding Oral Presentation award, 33rd (2011), 32nd (2010) UMBC Graduate Research Conf.
- Spot award in Ness Technologies for successful client demo of test automation prototype (2008).
- Felicitated by Mastek CMD for the successful implementation of The Interview Scheduler Project (2007).
- Selected as Best Student in the Computer Engineering Batch at the Atharva College of Engineering, University of Mumbai (2006 – 2007).
- Second in School at the Secondary School Exams (2001).