

# Uma Murthy

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Virginia Tech  
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## Education

Ph.D., Computer Science, Virginia Tech *expected* December 2009  
Dissertation: *A superimposed-information-supported digital library*  
– *facilitating scholarly tasks that involve specific contextualized information*  
Master of Computer Applications, National Institute of Technology, Trichy, India July 2000  
B.Sc. (Physics, Electronics, & Mathematics), Bangalore University, India April 1996

## Skills

Languages: Java (Sun certification: 84%), C#, VB.Net, SQL, XML, Perl, JavaScript, HTML, UML  
Operating systems: Windows, Linux  
Databases: MySQL, PostgreSQL  
Platforms and packages: Eclipse, IBM's UIMA, Microsoft .NET, Lucene and Lucene.NET, Prefuse, Flickr API, Drupal, Frontpage  
Configuration management: IBM Configuration Management and Version Control (CMVC) 1.1.6  
Web application Servers: Apache Web Server 2.0, Apache Tomcat 5.5.2

## Experience Summary

### Department of Computer Science, Virginia Tech - Graduate Research Assistant

- Aug 2009 – present: Developing an iPhone application for the Virginia Tech Graduate school, which will provide information and services for current and potential graduate students.
- May – July 2009 (with UNC-Chapel Hill): Explored how Second Life (SL) and virtual environments can be leveraged for digital preservation, especially for ephemeral media and events, for purposes of improving work practices and training. Conducted and captured interactions in virtual events (such as poster sessions).
- Aug 2007 – May 2008 (with Fisheries Dept. and Institute of Computing, UNICAMP, Brazil): Explored the use of parts of images and associated content in biodiversity tasks such as fish species identification. Developed a tablet PC image description and retrieval tool, which combines text- and content-based image description and retrieval of whole and parts of images. Evaluated the use and usefulness of the tool in fish species identification. Led the development and evaluation efforts across the inter-University team.
- Jan – May 2007: Developed and assessed Vizblog, a tool to visualize and navigate content of local community-oriented blogs. Vizblog was developed to research online participation in local governance.
- Aug 2006 – May 2007: Explored the use of a personal memex and a SenseCam device (a wearable camera, which records daily moments by taking several pictures a minute) and associated information by people with disabilities.
- Jan 2005 – Dec 2006 (with Portland State University and Villanova University): Researched scholars' use of parts of documents and (new) superimposed information laid over them. Developed various tools to support such use and conducted user studies to understand the use and usefulness of superimposed information (SI) and tools. Developed a representation of SI and related services in a digital library.

### IBM T. J. Watson Research Center - Research Intern

Summer 2007: Developed a methodology for evaluating the accuracy of output of aggregates of statistical natural language processing engines.

**CLDS, Kenan Institute, UNC-Chapel Hill** - Research Associate

Aug 2003 – Jul 2004: Worked on Prognostics-Enabled Logistics, exploring the application of learning (associative memory) and reasoning (rule-based) AI techniques for real-time diagnostics and prognostics in complex physical systems (automobiles, airplanes, oil reservoirs, etc).

**IBM Global Services, India** - Software Engineer and Engineer Intern

- Nov 2001 – Mar 2002: Worked on various software-agent projects, including a multi-agent financial Portfolio Management System.
- Jul 2000 – Oct 2001: Worked on Hindi language enablement and testing of Host On Demand (HOD) is a web-based emulator developed in Java that provides secure access to host data and applications.
- Jan – June 2000: Worked on the design and development of a **Workflow Management System**, which could handle the flow of information and control across any business application, specified in XML.

## Select Publications

(Complete list and copies may be accessed at <http://people.cs.vt.edu/~umurthy/publications/>)

- Murthy, U., Fox, E. A., Chen, Y., Hallerman, E., Torres, R., Ramos, E., and Falcao, T. Superimposed image description and retrieval for fish species identification. To appear in *ECDL '09: Proc. of the 13th European conference on Research and Advanced Technology for Digital Libraries*, Corfu, Greece, 2009.
- Murthy, U., Pitrelli, J., Ramaswamy, G., Franz, M. and Lewis, B. A Methodology and Tool Suite for Evaluation of Accuracy of Interoperating Statistical Natural Language Processing Engines. In *Proc. of Interspeech 2008*, Brisbane, Australia, 2008, 2066-2069.
- Murthy, U., Richardson, R., Fox, E.A. and Delcambre, L. Enhancing Concept Mapping Tools Below and Above to Facilitate the Use of Superimposed Information. In *Proc. of the Second International Conference on Concept Mapping*, San Jose, Costa Rica Sept. 5-8, 2006.
- Murthy, U. A Superimposed Information-Supported Digital Library. 2007. Paper presented at *the Doctoral Consortium at the 7th ACM/IEEE Joint Conference on Digital Libraries*, Vancouver, Canada, June 18-24, 2007.
- Murthy, U., Burbey, I., Kwon, G., Polys, N., Vincent, P and Perez-Quinones, M.A. Re-finding from a Human Information Processing Perspective. Presented at *Personal Information Management: Now that we are talking, what are we learning (PIM 2006) - workshop held in conjunction with SIGIR 2006*, Seattle, Washington, 2006.

## Honors and Awards

- Selected for student scholarship towards registration to attend the European Conference on Digital Libraries, 2009.
- Recipient of the work-life grant, Graduate school, Virginia Tech, June-July 2008.
- Doctoral Consortium at JCDL 2007: Selected to present and was also awarded a travel grant to attend the conference.

## Professional Activities and Memberships

- Reviewer for several journals, conferences and workshops: ACM TOIS 2008, ECIR 2007, JCDL 2009, PIM 2009
- Website administrator, Digital Library Research Laboratory website
- Student Volunteer: JCDL 2006
- Served as mentor to several students in research projects in the Digital Library Research Laboratory and, in the Information Retrieval and Multimedia & Hypertext courses at Virginia Tech (2005-2009)
- Member, Upsilon Pi Epsilon (Computer Science Honorary Society), 2005–present: Have served as Tutoring Chair (2006-2007) and President (2007-2008).
- Student Member, ACM, 2005–present.