

Naveen Ashish

UC-Irvine

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LinkedIn Profile: <http://www.linkedin.com/pub/naveen-ashish/0/335/302>

CURRENT POSITION

University of California, Irvine

California Institute for Telecommunications and Information Technology (Calit2)

Associate Research Scientist (I), Above-Scale (*Research Faculty/Professional Research series*)

July 2010 - Present

Was granted accelerated promotion to Associate level

Assistant Research Scientist (IV), Above-Scale

April 2005 – June 2010

Current Funded Projects

- BIRN (Biomedical Informatics Research Network), Investigator, NIH, Dec 2008-Dec 2013
- SAFIRE (Fire Fighter Situational Awareness), Investigator, DHS/FEMA, June 2008 – May 2010

Other UCI Affiliations

- Founding Member, Center for Bio-medical Informatics (CBMI)
- Advisor to UCI Medical Center CIO (Semantic Technologies)
- Member, Center for Emergency Response Technologies (CERT)
- Member, Center for Machine Learning and Intelligent Systems (CMLIS)

RESEARCH INTERESTS and EXPERTISE

Broadly in the **data management**, **semantics**, and **applied artificial intelligence** areas. Specific areas include information integration, information agents, applications of Semantic-Web technologies, semi-structured data management, information extraction from text, applied machine-learning, and information semantics. I have worked in the context of different application domains for the above technologies, specifically information systems for **disaster response** and emergencies, and data integration in **(bio) medical informatics**.

EDUCATION

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

PhD, Computer Science, May 2000

Dissertation Title: Optimizing Information Mediators by Selectively Materializing Data

Thesis Advisor: Prof. Craig A. Knoblock

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR, INDIA

BTech, Computer Science, May 1993

PRIOR EMPLOYMENT

Research Scientist, NASA Ames Research Center (USRA RIACS)

March 2002- August 2005

- R&D activities spanning research, software design and development, applications development, research and technical publications, and proposal development for new funding opportunities.

Computer Scientist, IBM Life Sciences Solutions, San Jose, CA

Dec 2000 – March 2002

- Research and development of data integration software for addressing data extraction and integration problems in the bio-informatics domain.

Visiting Assistant Professor, Department of Computer Science, University of Georgia, Athens, GA

Jan 2000 – Nov 2000

- Co-Investigator role in research activities in information integration as a member of the Large Scale Distributed Information Systems Lab.
- Teaching graduate and undergraduate level computer science courses in the areas of databases and internet information systems.

Graduate Research Assistant, University of Southern California/Information Sciences Institute

Jun 1995 – Dec 1999

- Research activities for the SIMS and Ariadne projects on information agents and information integration. Lead role on research activity on optimization aspects of information mediators as well as semi-automatic approaches to wrapper generation for internet sources. This research group also spun off Fetch Technologies (www.fetch.com) to commercialize the technology developed.

Member of Technical Staff (Summer Intern), Bell Laboratories, Lucent Technologies, Murray Hill, NJ

June 1997-Aug 1997

RESEARCH FUNDING

- 1) Key Personnel/Investigator on NIH funded BIRN project (PI: Dr. Carl Kesselman, USC/ISI), \$22.5M (Dec 2008 – Dec 2013)
- 2) Key Personnel/Investigator on DHS funded SAFIRE project (PI: Dr. Sharad Mehrotra, UCI), \$1M (June 2008 – May 2010)
- 3) PI on NASA funded TSWIM project, \$250,000 (Jan 2004 – Dec 2004)
- 4) PI/Co-I on several grant proposals under review, including a translational science center proposal to NIH.

PROGRAM COMMITTEES and ORGANIZATIONAL ACTIVITY

Chair, ISCRAM 2008 Special Session on Process Aware Disaster Management

Chair, AAAI 2006 Workshop on Event Extraction

Co-Chair, First Workshop on Semantic Web Technologies for Searching and Retrieving Scientific Data, Oct 2003, Sanibel Island, Florida

Program Committees: IEEE ISI 2010, TAAI 2010, GeOS 2009, 9th International Semantic Web Conference (ISWC), Barcelona, 2008; SIGAW Semantic Infrastructure for Grid Computing Applications, Cardiff UK, 2005; 10th International Conference on Co-operative Information Systems, Cyprus, 2005; 1st Conference on Geo-Spatial Semantics, GeOS 2005; 9th International Conference on Co-operative Information Systems, Cyprus, 2004; 8th International Conference on Co-operative Information Systems, Trento Italy, 2003

Editor, Journal of Digital Content Technologies and Applications (January 2009 – Present)

Guest Editor, Journal of Digital Libraries: Special Issue on Semantic Web and Science Data Interoperation, 2004

Reviewer for several journals such as IEEE Transactions on Knowledge and Data Engineering, International Journal of Co-operative Information Systems, Journal of Parallel and Distributed

Computing, IEEE Transactions on Systems Man and Cybernetics, Journal of the Geological Society of America, and ACM Transactions on Internet Technology.

PUBLICATIONS

BOOKS

- B1 Naveen Ashish and Amit P. Sheth (Editors)
Geo-spatial Semantics and The Semantic-Web: Foundations, Algorithms and Applications
Semantic-Web and Beyond: Computing for Human Experience (Book Series)
Springer, September 2010

BOOK CHAPTERS

- BC2 Naveen Ashish and Sharad Mehrotra
XAR: An Integrated Framework for Semantic Extraction and Annotation
Cases on Semantic Interoperability for Information Systems Integration: Practices and Applications
Yannis Kalfoglou (Editor), IGI Global, October 2009, pp 235 - 254
- BC1 Naveen Ashish, Ronald Eguchi, Rajesh Hegde, Charles Huyck, Dmitri Kalashnikov, Sharad Mehrotra, Padhraic Smyth and Nalini Venkatasubramanian
Situational Awareness Technologies for Disaster Response
Terrorism Informatics: Knowledge Management and Data Mining for Homeland Security (Chen et al Eds) Springer, 2008, pp 517 - 544

JOURNAL ARTICLES

- J4 Naveen Ashish and David A. Maluf
Intelligent Information Integration: Reclaiming the Intelligence
International Journal of Intelligent Information Technologies (IJIT), 5(3), 2009, pp 28 - 54
- J3 Naveen Ashish, Craig A. Knoblock and Cyrus Shahabi
Selectively Materializing Data in Mediators by Analyzing User Queries
International Journal of Cooperative Information Systems (IJCIS), 11(1/2), pp 119-144, 2002
- J2 Craig Knoblock, Steve Minton, Jose Luis Ambite, Naveen Ashish, Ion Muslea, Andrew Philpot and Sheila Tejada
The ARIADNE Approach to Modeling Web Sources for Information Integration
International Journal of Cooperative Information Systems (IJCIS) Special Issue on Intelligent Information Agents: Theory and Applications, 10(1/2), pp 145-169, 2001
- J1 Naveen Ashish, Sharad Mehrotra and Pouria Pirzadeh
Incorporating Integrity Constraints in Uncertain Databases
CoRR:arXiv:0907:1632

REFEREED CONFERENCE AND WORKSHOP PROCEEDINGS

- C32 Naveen Ashish, Lisa Dahm and Charles Boicey
Deep Information Extraction from Pathology Reports: An OHNLP and UMLS Powered Approach
The 8th Annual HDWA (Health Data Warehousing Association) Conference, Sep 2010, Durham NC
- C31 W. Lewis Johnson, Naveen Ashish, Stephen Bodnar and Alicia Sagae
Expecting the Unexpected: Warehousing and Analyzing Data from ITD Field Use
The 10th International Conference on Intelligent Tutoring Systems, June 2010, PA, pp 352 - 354
- C30 Naveen Ashish and Sharad Mehrotra
Community Driven Data Integration (for Emergency Response)

The 7th International ISCRAM Conference, May 2010, Seattle WA (Full length paper, proceedings will be available shortly at <http://www.iscram.org>)

- C29 Naveen Ashish, Jay Lickfett, Sharad Mehrotra and Nalini Venkatasubramanian
Rapid Information Integration for Emergency Response
Emergency Management: Incident, Resource and Supply Chain Management (DHS S&T Directorate), Nov 2009, Irvine
- C28 Naveen Ashish, Jay Lickfett, Sharad Mehrotra and Nalini Venkatasubramanian
The Software EBox: Integrated Information for Situational Awareness
IEEE Intelligence and Security Informatics (ISI), June 2009, Dallas, pp 77 – 82
- C27 Naveen Ashish, Sharad Mehrotra and Pouria Pirzadeh
XAR: An Integrated Framework for Free Text Information Extraction
IEEE CSIE Conference, April 2009, Los Angeles, pp 462 - 466
- C26 Jay Lickfett, Naveen Ashish, Sharad Mehrotra, Nalini Venkatasubramanian and Jacob Green
The RESCUE Disaster Portal for Disasters and Emergency Response
The 5th International ISCRAM Conference, May 2008, Washington DC, pp 787 – 792
- C25 Naveen Ashish , Tom Chidester, Deepak Kulkarni, Rich Keller, Bob Lawrence, Bob Lynch , Hemil Patel, Irving Statler, Yao Wang and May Windrem
Secure Integration of Aviation Data
NASA Tech Briefs, Mar 2007
- C24 Yiming Ma, Dmitri Kalashnikov, Sharad Mehrotra, Nalini Venkatasubramanian, Ram Hariharan, Naveen Ashish and Jay Lickfett
On-Demand Information Portals for Disaster Situations
IEEE International Conference on Intelligence and Security Informatics (ISI) 2007, May 23-24, New Brunswick, NJ, pp 134 – 138
- C23 Entity Search: A New Paradigm for People Search on the Web
Dmitri Kalashnikov, Rabia Nuray, Stella Chen, Sharad Mehrotra and Naveen Ashish
ICDE International Conference on Data Engineering, April 2007, pp 1258 - 1260
- C22 David A. Maluf, David G. Bell, Naveen Ashish, Peter Putz, Yuri Gawdiak: Business Intelligence in Large Organizations: Integrating Which Data?
ISMIS 2006: 248-257
- C21 Dmitri V. Kalashnikov, Yiming Ma, Sharad Mehrotra, Ramaswamy Hariharan, Nalini Venkatasubramanian, Naveen Ashish
SAT: Spatial Awareness from Textual Input
Extending Database Technology (EDBT) 2006, 1159 - 1163
- C20 Naveen Ashish, Dmitri Kalashnikov, Sharad Mehrotra and Nalini Venkatasubramanian
Event Based Approach to Situational Awareness
CoRR:arXiv:0906:4096
- C19 David Maluf, David Bell, Naveen Ashish, Peter Tran and Chris Knight
Semi-structured Data Management in the Enterprise: A Nimble, High-Throughput, and Scalable Approach
International Database Engineering and Applications Symposium (IDEAS) 2005, Montreal Canada

- C18 Alon Y. Halevy, Naveen Ashish, Dina Bitton, Michael J. Carey, Denise Draper, Jeff Pollock, Arnon Rosenthal and Vishal Sikka
Enterprise information integration: successes, challenges and controversies.
ACM SIGMOD Conference 2005: Baltimore MD, 778-787
[More than 100 citations. Source: Google Scholar]
- C17 David Maluf, David Bell and Naveen Ashish
Lean Middleware
ACM SIGMOD Conference on Management of Data, June 2005, Baltimore MD, pp 788 – 791
- C16 Naveen Ashish
Semantic-Web Technology: Applications at NASA
Proceedings of Dagstuhl Seminar (04391): Semantic Interoperability and Integration.
Kalfoglou et al, Eds (2005). Web: <http://drops.dagstuhl.de/opus/volltexte/2005/50/>
- C15 Andre Goforth, Naveen Ashish, Gabor Karsai, Robert Neches and Pedro Szekeley
Attaining Program Affordability Through Integration of Logistical Operations and Health Maintenance *AIAA 1st Space Exploration Conference*, Orlando FL, Jan 2005 (Full length paper, Proceedings available from American Institute of Aeronautics and Astronautics, AIAA-2005-2358, <http://www.aiaa.org>)
- C14 Naveen Ashish and Andre Goforth
Intelligent Information Fusion in Aviation Domain: A Semantic-Web based Approach
AIAA Intelligent Systems Conference, Chicago IL, Sep 2004 (Full length paper, Proceedings available from American Institute of Aeronautics and Astronautics, AIAA-6358, <http://www.aiaa.org>)
- C13 Naveen Ashish, Deepak Kulkarni and Yao Wang
Source Update Capture in Information Agents
IJCAI Workshop on Information Integration on the Web, 2003, Acapulco, Mexico, pp 9 -11
- C12 Tarcisio Lima, Amit P. Sheth, Naveen Ashish, Mukesh Guntamadugu, Sriram Lakshminarayanan, Narayanan Palsena and Dilpreet Singh
Digital Library Services Supporting Information Integration over the Web
Workshop on Information Integration on the Web, Rio de Janeiro, Brazil, April 2001, pp 19 - 26
- C11 Naveen Ashish, Craig A. Knoblock and Cyrus Shahabi
Selectively Materializing Data in Mediators by Analyzing User Queries
4th IFCS Conference on Cooperative Information Systems, 1999, Edinburgh, Scotland, pp 256 - 266
- C10 Naveen Ashish, Craig A. Knoblock and Cyrus Shahabi
Selectively Materializing Data in Mediators by Analyzing Query Distribution, Source Structure and Maintenance Cost
ACM CIKM 2nd Workshop on Web Information and Data Management (WIDM), 1999, Kansas City, Missouri, pp 33 - 37
- C9 Naveen Ashish, Craig A. Knoblock and Cyrus Shahabi
Intelligent Caching for Information Mediators: A KR Based Approach
Knowledge Representation meets Databases (KRDB) 1998, Seattle, WA, pp 3.1- 3.7
- C8 Craig Knoblock, Steve Minton, Jose-Luis Ambite, Naveen Ashish, Pragnesh Modi, Ion Muslea, Andrew Philpot and Sheila Tejada
Modeling Web Sources for Information Integration
The 15th National Conference on Artificial Intelligence (AAAI), July 1998, Madison WI, pp 211 - 218
[More than 200 citations. Source: Google Scholar]

- C7 Jose-Luis Ambite, Naveen Ashish, Craig A. Knoblock, Steven Minton, Pragnesh J. Modi, Ion Muslea, Andrew Philpot, and Sheila Tejada
Ariadne: A System for Constructing Mediators for Internet Sources
ACM SIGMOD Conference on Management of Data, June 1998, Seattle WA, pp 561 - 563
- C6 Naveen Ashish, Craig A. Knoblock and Cyrus Shahabi
Semantic Caching for Information Integration
AAAI Workshop on AI and Data Integration, July 1998, Madison, WI
- C5 Naveen Ashish, Craig Knoblock and Alon Levy
Information Gathering Plans with Sensing Actions.
Fourth European Conference on Planning, 1997, Toulouse, France, pp 13 - 25
- C4 Naveen Ashish and Craig Knoblock.
Semi-automatic Wrapper Generation for Internet Information Sources.
Second IFCIS Conference on Cooperative Information Systems 1997, Charleston, SC, pp 160 - 169
- C3 Naveen Ashish and Craig Knoblock.
Wrapper Generation for Semi-structured Internet Sources.
Invited paper, ACM SIGMOD Record, December 1997, Special Issue on Management of Semi-structured Data, pp 467 - 478
[More than 300 citations. Source: Google Scholar. Was in Top 10 SIGMOD Record papers for the 10 year 1995-2005 period]
- C2 Naveen Ashish and Craig Knoblock.
Wrapper Generation for Semi-structured Internet Sources.
ACM SIGMOD Workshop on Management of Semi-structured Data, 1997, Tucson , Arizona.
- C1 Naveen Ashish, Craig Knoblock and Steve Minton
Extracting Information from Online Semi-structured Sources (Demo paper)
1st Autonomous Agents Conference, Marina del Rey CA, 1997

MAGAZINE ARTICLES

- M2 Naveen Ashish, Chris Knight and David Maluf
EII: Achieving Scalability and Cost-Effectiveness
DM Review, Jan 2008
- M1 Naveen Ashish, Doug Appelt, Dayne Freitag and Dmitry Zelenko
The AAAI 2006 Workshop on Event Extraction: Co-chair's report
AI Magazine, 2007

TECHNICAL REPORTS

- TR5 Naveen Ashish, Deepak Kulkarni and Yao Wang
Source Update Capture in Information Agents
NASA Center: Ames Research Center
Publication Year: 2003 Added to NTRS: 2006-08-03
Document ID: 20060015632
- TR4 Naveen Ashish, David Bell and David Maluf
Lean Middleware
NASA Center: Ames Research Center
Publication Year: 2005 Added to NTRS: 2005-08-25
Document ID: 20050184137

- TR3 Naveen Ashish and Andre Goforth
Intelligent Information Fusion in the Aviation Domain: A Semantic-Web based Approach
 NASA Center: Ames Research Center
 Publication Year: 2005 Added to NTRS: 2005-02-01
 Document ID: 20050040756
- TR2 Naveen Ashish
Semantic-Web Technology Applications at NASA
 NASA Center: Ames Research Center
 Publication Year: 2004 Added to NTRS: 2005-01-25
 Document ID: 20050010168
- TR1 Naveen Ashish
NASA and The Semantic Web
 NASA Center: Ames Research Center Publication Year: 2005
 Added to NTRS: 2005-01-25
 Document ID: 20050019521

INVITED TALKS and TUTORIALS

Invited presentation on “NASA and the Semantic Web”, At the *Dagstuhl Seminar on Semantic Interoperability and Integration*, Sep 2004, Dagstuhl Germany.
 Note: Available as NASA Technical Report NTRS: 2005-01-25 (20050010168)

Information Mediation: Integrating Information from Multiple Information Sources (with Amit P. Sheth)
The Tenth International Conference on Management of Data (COMAD), December 2000, Pune, India

TEACHING and STUDENT MENTORING

- Primary Instructor for “Introduction to Data Management”, Information and Computer Sciences, UC Irvine, Fall 2006
- Primary Instructor for “Database Systems” and “Internet Information Technologies”, Department of Computer Science, University of Georgia Athens, Spring and Summer 2000
- Co-taught graduate seminar on “Semantic Information Extraction” (with Prof. Sharad Mehrotra), Information and Computer Science, UC Irvine, Spring and Fall 2007
- Advisor and mentor to several graduate students in the “RESCUE” project at UC Irvine 2005 – 2009.
- Supervisor for summer interns at NASA Ames Research Center, 2003.

INDUSTRIAL CONSULTING ENGAGEMENTS

Expert Consultant

Kaboodle Inc. (<http://www.kaboodle.com>) Sep 2005 – Oct 2006
 Expert consultant for R&D in information extraction from internet data, applications to online shopping

Expert Consultant

Public Display Inc. Sep 2006 – May 2007
 Technical consultation for automated information extraction R&D from Web data.

Technical Expert Consultant

To law firm of Scott Jones and Co. March 2007
 IBM vs Amazon on litigation related to web wrapper technology.

TECHNOLOGY DEVELOPMENT

Strong interest in development and distribution of open-source technologies for community use

- Primary architect and developer of the XAR information extraction platform. This is an extraction system developed using many off-the-shelf and open-source text analysis tools. Provides the capability of building powerful information extraction applications from extraction from free text in an easy and intuitive manner. System is available (open-source) at <http://www.ics.uci.edu/~ashish/xar> under a Creative Commons License.
- Key developer of NETMARK, an XML based data management and integration system developed at NASA Ames Research Center. Open-source version available for non-profit use.
- Primary developer of TGRAM, a taxonomy driven graph mining engine.

INVITED TALKS AND SEMINARS

Indian Statistical Institute, Calcutta, India, March 1999 ; Indian Institute of Management , Calcutta, India , March 1999 ; Infosys Technologies Limited, Bangalore, India , March 1999 ; Virginia Tech, Blacksburg CA, Jan 2000 ; Enosys Markets Inc, San Diego CA, Aug 2000 ; Nimble Technologies, Seattle WA, Aug 2000 ; San Diego Supercomputer Center, San Diego CA, Sep 2001 ; NASA Ames Research Center, Moffet Field CA, Dec 2000 ; SRI International, Menlo Park CA, Jan 2002 ; Accenture Technology Labs, Palo Alto, Oct 2003 ; Arizona State University, Tempe, Oct 2003 ; Jet Propulsion Lab (JPL), Pasadena, May 2004, University of California – Irvine, July 2004, Institute for Defense and Government Analysis (IDGA), Washington DC June 2006; Bell Labs India, Bangalore India, April 2007; Disney Research, Glendale Jan 2009, CSU – Channel Islands, April 2009, AT& T Interactive, Glendale, May 2010, Case Western Medical School, Cleveland, May 2010.

HONORS AND AWARDS

- NASA Ames Space Act Board Award for Aviation Data Integration System (ADIS), 2004
- NASA Ames Software Release Award for Aviation Data Integration System (ADIS), 2004
- NASA Ames Patent Application Inventor Award, 2004
- NASA Ames Honor Award for contributions to Aviation Data Integration Project (ADIP), 2003
- AAAI Doctoral Consortium Award, American Association of Artificial Intelligence, 1998
- Best Speaker, First IMSC student retreat, University of Southern California, 1998
- Academic Proficiency Certificate, From Senate, IIT Kanpur, India, 1990
- Founders Gold Medal, For topping grade XII examination, La Martiniere for Boys, Calcutta, India, 1989

SPECIAL INVITATIONS

- Invitation to Dagstuhl Seminar on *Semantic Interoperability and Integration*, Dagstuhl Germany, Sep 2004
- Invitation to Dagstuhl Seminar on *Machine Learning for the Semantic Web*, Dagstuhl Germany, Sep 2005

GRADUATE THESIS COMMITTEES

(All at the University of Georgia, Department of Computer Science)

1. Dilpreet Singh, MS, 2000, 2. Narayanan Palsena, MS, 2000, 3. Mukesh Guntamagadu, MS, 2000, 4. Sriram Lakshminarayanan, MS, 2000

PERSONAL INFORMATION

US Citizen (Naturalized), Born in Lucknow (India), Married

Erdos Number: 4