

# Niranjana Balasubramanian

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Postdoctoral Research Associate  
University of Washington

E-mail: niranja@cs.washington.edu  
Phone: 315 406 2939  
Webpage: homes.cs.washington.edu/~niranja

## Research Interests

### Natural Language Processing

Event extraction, Knowledge Extraction, and Question Answering.

### Information Retrieval

Performance estimation, Query-dependent strategies, and Mobile search.

## Education

**Ph.D.**, Computer Science – University of Massachusetts Amherst, July 2011.

**M.S.**, Computer Science – University at Buffalo (SUNY), July 2003.

**B.Eng.**, Computer Science – Shanmugha College of Engineering, Tamilnadu, India (May 2001).

## Work Experience

|   |                                 |
|---|---------------------------------|
| Postdoctoral Fellow   | <b>University of Washington</b> |
| Mentor: Oren Etzioni  | July 2011 – Present.            |
| <i>Event Modeling and Question Answering using Open Information Extraction.</i> |                                 |

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| Research Assistant   | <b>University of Massachusetts</b> |
| Advisor: Prof. James Allan                                 | 2006 – 2011                        |
| <i>Query dependent strategies in Information Retrieval</i> |                                    |

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|---|---------------------------|
| Research Intern   | <b>Microsoft Research</b> |
| Mentors: Vitor Carvalho and Giridhar Kumaran              | Summer 2009               |
| <i>Improving web search performance for long queries.</i> |                           |

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| Research Intern                                      | <b>Microsoft Research</b> |
| Mentor: Silviu Cucerzan                              | Summer 2008               |
| <i>Generating wikipedia like pages for entities.</i> |                           |

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|---|--------------------------------|
| Research Intern                                   | <b>Yahoo! Applied Research</b> |
| Mentor: Arkady Borkovsky                          | Summer 2008                    |
| <i>Statistical models for Question retrieval.</i> |                                |

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|---|----------------------------|
| Software Engineer   | <b>Syracuse University</b> |
| Center for Natural Language Processing                                      | 2003–2006                  |
| Manager: Prof. Elizabeth D. Liddy   |                            |
| <i>Development of Question Answering, and Information extraction tools.</i> |                            |

## Journal publications

1. **[IJSC 11]** Beyond Ranked Lists in Web Search: Aggregating Web Content in Topic Pages.  
Balasubramanian, N., and Cucerzan, S.  
International Journal of Semantic Computing, 2011.

## Conference Publications

1. [EMNLP 2013] Generating Coherent Event Schemas at Scale.  
Balasubramanian, N., Soderland, S., Mausam, and Etzioni, O.  
Conference on Empirical Methods in Natural Language Processing.
2. [CoNext 2012] FindAll: A Local Search Engine for Mobile Phones.  
Balasubramanian, A., Balasubramanian, N., Huston, Samuel., Metzler, Donald.  
ACM CoNext conference.
3. [SIGIR 2010] Exploring Reductions for Long Web Queries.  
Balasubramanian, N., Kumaran, G., and Carvalho, V.  
ACM SIGIR Conference.
4. [SIGIR 2010] Learning to Select Rankers.  
Balasubramanian, N. and Allan, J.  
A poster paper at ACM SIGIR Conference.
5. [SIGIR 2010] Predicting Query Performance on the Web.  
Balasubramanian, N., Kumaran, G., and Carvalho, V.  
A poster paper at ACM SIGIR Conference.
6. [ICSC 2010] Topic Pages: An Alternative to the Ten Blue Links.  
Balasubramanian, N. and Cucerzan, S.  
IEEE Conference on Semantic Computing (**Among top 5 papers selected for IJSC journal.**)
7. [CIKM 2009] Automatic Generation of Topic Pages Using Query-based Aspect Models.  
Balasubramanian, N. and Cucerzan, S.  
A short paper at ACM Conference on Information and Knowledge Management
8. [IMC 2009] Energy Consumption in Mobile Phones: A Measurement Study and Implications for Network Applications.  
Balasubramanian, N., Balasubramanian, A. and Venkataramani, A.  
ACM Internet Measurement Conference.
9. [SPIRE 2009] Syntactic Query Models for Restatement Retrieval.  
Balasubramanian, N. and Allan, J.  
String Processing and Information Retrieval Conference.
10. [SIGIR 2007] A Comparison of Sentence Retrieval Techniques.  
Balasubramanian, N., Allan, J. and Croft, W. B.  
A poster at ACM SIGIR Conference.

## Workshop publications

1. [AKBC 2013] Clark P., Harrison P., Balasubramanian N.  
A Study of the AKBC/Requirements for Passing an Elementary Science Test.  
Automatic Knowledge Base Construction and Web-scale Knowledge Extraction at CIKM 2013.
2. [AKBC 2012] Balasubramanian, N., Soderland, S., Mausam, Etzioni, O.  
Rel-grams: A Probabilistic Model of Relations in Text.  
Automatic Knowledge Base Construction and Web-scale Knowledge Extraction at NAACL 2012.
3. [AKBC 2012] Clark, P., Harrison, P., Balasubramanian, N., Etzioni, O.  
Constructing a Textual KB from a Biology TextBook.  
Automatic Knowledge Base Construction and Web-scale Knowledge Extraction at NAACL 2012.
4. [NW-NLP 2012] Clark, P., Harrison, P., Balasubramanian, N.  
Answering Biology Questions using Textual Reasoning.  
Pacific Northwest Regional NLP Workshop 2012.

## Technical Reports

1. **[2012]** Out of the Box Information Extraction: a Case Study using Bio-Medical Texts.  
Balasubramanian, N., Soderland, S., Mausam, Etzioni, O., and Bart, R.  
Technical Report (UW-CS-2012-xxx) in Computer Science, University of Washington.
2. **[2011]** Modeling Relative Effectiveness to Leverage Multiple Ranking Algorithms.  
Balasubramanian, N. and Allan, J.  
CIIR Technical Report (IR-xxx) in University of Massachusetts Amherst.
3. **[2009]** Energy Aware Search from Mobile Phones.  
Balasubramanian, N., Venkataramani, A. and Allan, J.,  
CIIR Technical Report (IR-706) in University of Massachusetts Amherst.
4. **[2009]** Energy Consumption in Mobile Phones: Measurement, Design Implications, and Algorithms.  
Balasubramanian, N., Balasubramanian, A., and Venkataramani, A.  
Technical Report (UM-CS-2009-022) in Computer Science, University of Massachusetts Amherst.

## Invited Contributions

1. **[2010]** Online Feature Selection for Information Retrieval.  
Balasubramanian, N., Kumaran, G., Carvalho, V. and Allan, J.  
Feature Generation and Selection Workshop for Information Retrieval, SIGIR 2010.

## Theses

1. **Ph.D. [2011]** Query-dependent Selection of Retrieval Alternatives.  
Advisor: James Allan  
University of Massachusetts Amherst.
2. **Masters [2003]** Automatic Acquisition of Concept Hierarchies in an Integrated Information Retrieval/Information Extraction framework.  
Advisor: Rohini Srihari  
University at Buffalo.

## Invited talks

1. **University at Buffalo** - Open Event Schemas, CS Colloquium Series, October 2013.
2. **Decide.com** - Machine Learning for Information Retrieval, March 2012.
3. **University of Washington** - Machine Learning for Information Retrieval, AI Seminar, Feb 2012.
4. **University of Waterloo** - Query-dependent Selection of Retrieval Alternatives, March 2010.
5. **University at Buffalo** - Query-dependent Selection of Retrieval Alternatives, March 2010.

## Services and Awards

1. **Reviewing:**  
**IR** – SIGIR 2011, 2012-13 posters, WSDM 2011, CIKM 2012-13  
**NLP** – EMNLP 2012-13, AAAI 2012-13, NAACL Student Research Workshop 2009
2. **Travel Award:** SIGIR 2010.
3. **Graduate Student Representative, UMass CS:** 2010.

## Teaching Activities

1. **Teaching Assistant:** Information Retrieval by Prof. James Allan, CS Univ. of Massachusetts.
2. **Guest Lectures:** Relevance Modeling in IR and Machine Learning for IR.