

# Niranjana Balasubramanian

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Postdoctoral Research Associate  
University of Washington

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## 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 July 2011 – Present.  
Mentor: Oren Etzioni **University of Washington**  
*Event Modeling and Question Answering using Open Information Extraction.*

Research Assistant 2006 – 2011  
Advisor: Prof. James Allan **University of Massachusetts**  
*Query dependent strategies in Information Retrieval*

Research Intern Summer 2009  
Mentors: Vitor Carvalho and Giridhar Kumaran **Microsoft Research**  
*Improving web search performance for long queries.*

Research Intern Summer 2008  
Mentor: Silviu Cucerzan **Microsoft Research**  
*Generating wikipedia like pages for entities.*

Research Intern Summer 2008  
Mentor: Arkady Borkovsky **Yahoo! Applied Research**  
*Statistical models for Question retrieval.*

Software Engineer 2003–2006  
Center for Natural Language Processing **Syracuse University**  
Manager: Prof. Elizabeth D. Liddy  
*Development of Question Answering, and Information extraction tools.*

## 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.

## Invited talks

1. **University at Buffalo** - Open Event Schemas, October 2013.
2. **Decide.com** - Machine Learning for Information Retrieval, March 2012.
3. **University of Washington** - Machine Learning for Information Retrieval, 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.