

## ARCHNA BHATIA

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Language Technologies Institute  
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### RESEARCH INTERESTS

#### *Areas:*

Linguistics : Syntax, Semantics, Morphology, Pragmatics, Discourse  
Natural Language Processing : Semantic Role Labeling, Treebanking, Parsing, Machine Translation  
Second Language Acquisition : Acquisition of morphosyntax and semantics

#### *Constructions/ Phenomena:*

Adjectives, Adverbs, Adpositions, Agreement, Case system, Causatives, Coordination,  
Definiteness, Empty categories, Light verb constructions and other complex predicates, Specificity

### POSITIONS HELD

- Postdoctoral Researcher, Language Technologies Institute, School of Computer Science, Carnegie Mellon University, Pittsburgh (June 2012- present)
- Postdoctoral Researcher, Department of Linguistics, University of Colorado at Boulder (July 2011- June 2012)
- Lecturer, Northwestern University, Evanston (September 2011- June 2012)
- Instructor, Loyola University, Chicago (August 2011- May 2012)
- Research Assistant, Department of Linguistics, University of Colorado at Boulder (August 2009- June 2011)
- Research Assistant, Department of Linguistics, University of Illinois at Urbana-Champaign (June 2009- December 2010)
- Teaching Assistant, Department of Linguistics, University of Illinois at Urbana-Champaign (August 2003- May 2009)
- Teaching Assistant, Department of Languages, Literatures and Linguistics, York University (September 2001- August 2003)

### EDUCATION

- Ph.D. in Linguistics, University of Illinois at Urbana-Champaign, IL (August 2011)  
*Dissertation title:* "Agreement in the Context of Coordination"  
*Dissertation advisor:* Prof. Elabbas Benmamoun
- M.S. in Linguistics, University of Illinois at Urbana-Champaign, IL (May 2006)

- M.A. in Theoretical Linguistics, York University, Toronto, Canada.  
(August 2003)  
*Dissertation title:* “The Syntax of Adverbial Phrases in Hindi”  
*Dissertation advisor:* Prof. Maire Noonan
- M.A. in Linguistics, University of Delhi, Delhi, India.  
(July 2001)  
*Dissertation title:* “The Verb Phrase Structure of Paite”  
*Dissertation advisor:* Prof. Tista Bagchi
- Bachelor of Elementary Education and Bachelor of Mathematics, University of Delhi, India  
(July 1999)

## PUBLICATIONS

- **Bhatia, Archna**, Chu-Cheng Lin, Lori Levin and Mandy Simons. “Grammaticalization of Definiteness based on its Communicative Functions,” accepted to appear in the Proceedings of the 11th High Desert Linguistics Society Conference 2014.  
*[Talk, Proceedings]*
- Kong, Lingpeng, Nathan Schneider, Swabha Swayamdipta, **Archna Bhatia**, Chris Dyer and Noah A. Smith. “A Dependency Parser for Tweets,” in the Proceedings of the Conference on Empirical Methods in Natural Language Processing 2014.  
*[Proceedings]*
- **Bhatia, Archna**, Chu-Cheng Lin, Nathan Schneider, Yulia Tsvetkov, Fatima Talib Al-Raisi, Laleh Roostapour, Jordan Bender, Abhimanu Kumar, Lori Levin, Mandy Simons and Chris Dyer. “Automatic Classification of Communicative Functions of Definiteness,” in the Proceedings of the 25<sup>th</sup> International Conference on Computational Linguistics 2014.  
*[Poster, Proceedings]*
- Matthews, Austin, Waleed Ammar, **Archna Bhatia**, Greg Hanneman Swabha Swayamdipta, Eva Schlinger, Yulia Tsvetkov, Alon Lavie and Chris Dyer. “The CMU Machine Translation Systems at WMT 2014,” in the Proceedings of the Ninth Workshop on Machine Translation, 2014.  
*[Poster, Proceedings]*
- **Bhatia, Archna**, Mandy Simons, Lori Levin, Yulia Tsvetkov, Chris Dyer and Jordan Bender. “A Unified Annotation Scheme for the Semantic/Pragmatic Components of Definiteness,” in the Proceedings of the 9<sup>th</sup> edition of the Language Resources and Evaluation Conference 2014.  
*[Talk, Proceedings]*
- Jain, Siddharth, Angelique Rein, **Archna Bhatia** and Eduard Hovy. “A Corpus of Participant Roles in Contentious Discussions,” in the Proceedings of the 9<sup>th</sup> edition of the Language Resources and Evaluation Conference 2014.  
*[Poster, Proceedings]*
- Tsvetkov, Yulia, Nathan Schneider, Dirk Hovy, **Archna Bhatia**, Manaal Faruqui, Chris Dyer. “Augmenting English Adjective Senses with Supersenses,” in the Proceedings of the 9<sup>th</sup> edition of the Language Resources and Evaluation Conference 2014.  
*[Talk, Proceedings]*
- **Bhatia, Archna**, Michael Deeringer, Matthew Gardner, Carlos Ramírez, Lori Levin and Owen Rambow. “Repurposing Treebanks,” in the Proceedings of the Twelfth Workshop on Treebanks and Linguistic Theories, 2013.  
*[Talk, Proceedings]*

- **Bhatia, Archna**, Mandy Simons and Lori Levin. “Definiteness and space of semantic/pragmatic functions of NPs,” to appear in the Proceedings of the 35<sup>th</sup> Annual & 1<sup>st</sup> International Conference of Linguistic Society of India, 2013.  
*[Talk]*
- Tsvetkov, Yulia , Chris Dyer, Lori Levin and **Archna Bhatia**. “Generating English Determiners in Phrase-Based Translation with Synthetic Translation Options,” in Proceedings of the Eighth Workshop on Machine Translation, 2013.  
*[Talk, Proceedings]*
- Montrul, Silvina, Rakesh Bhatt and **Archna Bhatia**. “Erosion of Case and Agreement in Hindi Heritage Speakers,” in *Linguistic Approaches to Bilingualism*, 2011.  
*[Journal article]*
- Hwang, Jena D., **Archna Bhatia**, Clare Bonial, Aous Mansouri, Ashwini Vaidya, Nianwen Xue and Martha Palmer. 2010. "PropBank Annotation of Multilingual Light Verb Constructions." in the Proceedings of the Linguistic Annotation Workshop held in conjunction with ACL-2010. Uppsala, Sweden, July 15-16, 2010.  
*[Talk, Proceedings]*
- Benmamoun, Elabbas and **Archna Bhatia**. “The Structure of Coordination and Close Conjunct Agreement,” <http://ling.auf.net/lingBuzz/001125>, 2010.  
*[Linguistics archive]*
- **Bhatia, Archna**, Rajesh Bhatt, Bhuvana Narasimhan, Martha Palmer, Owen Rambow, Dipti Misra Sharma, Michael Tepper, Ashwini Vaidya and Fei Xia. “Empty Categories in a Hindi Treebank,” in the Proceedings of the 7<sup>th</sup> International Conference on Language Resources and Evaluation (LREC'10), Valletta, Malta, May, 2010. (<http://www.lrec-conf.org/lrec2010/?-Conference-Programme->)  
*[Talk, Proceedings]*
- Benmamoun, Elabbas, **Archna Bhatia** and Maria Polinsky. “Closest Conjunct Agreement in Head-Final Languages,” *Linguistic Variation Yearbook 9*, 2009. (Invited Publication)  
*[Annual article]*
- **Bhatia, Archna**. “Testing Universality of Cinque's hierarchy with respect to an SOV language: Adverb Placement in Hindi” in *LSO Working Papers in Linguistics 6*, Proceedings of WIGL 2006.  
*[Talk, Proceedings]*

#### OTHER TALKS AT CONFERENCES (WITHOUT PROCEEDINGS)

- **Bhatia, Archna**, Chu-Cheng Lin, Lori Levin and Mandy Simons. 2015. “Exploring the form-function mappings of definiteness in typologically diverse languages,” LSA 2015 at Portland, OR (Jan 8-11, 2015).  
*[Poster]*
- Polinsky, Maria, **Archna Bhatia** and Elabbas Benmamoun. 2012. “Learning about Agreement from Closest Conjuncts,” Formal Approaches to South Asian Linguistics, MIT (March 17, 2012).
- Montrul, Silvina, Rakesh Bhatt, Roxana Girju, and **Archna Bhatia**. 2011. “Differential Case Marking in Hindi Heritage Speakers,” *GASLA II* at University of Washington, Seattle (March 25-27, 2011).
- **Bhatia, Archna** and Elabbas Benmamoun. 2011. “Close Conjunct Agreement: Adjacency vs. Gapping,” *LSA 2011* at Pittsburgh, PA (January 6-9, 2011).  
*[Poster]*
- Montrul, Silvina, Rakesh Bhatt, Roxana Girju and **Archna Bhatia**. 2010. “Comparative Heritage

Languages,” 4<sup>th</sup> Heritage Language Summer Institute, University of Hawaii (June 21-25, 2010).

- **Bhatia, Archna** and Elabbas Benmamoun. 2009. “Against the late merge analysis of close conjunct agreement: Evidence from Long Distance Agreement in Hindi,” South Asian Languages Analysis Roundtable XXVIII at the University of North Texas, Denton, TX (Oct 9-11, 2009).
- **Bhatia, Archna** and Elabbas Benmamoun. 2009. “Interaction of Number Sensitive Items with Agreement: A Case from Hindi,” Illinois Language and Linguistics Society 1 at University of Illinois at Urbana-Champaign, IL (May 29-31, 2009).  
  
- Also was accepted at the Canadian Linguistic Association 2009.
- **Bhatia, Archna** and Elabbas Benmamoun. 2009. “Close Conjunct Agreement: Hindi as a Case Study,” *GLOW-in-Asia VII Colloquium* at the English and Foreign Languages University, Hyderabad, India (February 25-27, 2009).
- **Bhatia, Archna** and Elabbas Benmamoun. 2009. “Close Conjunct Agreement: Role of Linear Adjacency,” *LSA 2009* at San Francisco, CA (January 8-11, 2009).
- **Bhatia, Archna** and Elabbas Benmamoun. 2008. “Close Conjunct Agreement: Structure of Coordination or Linear Adjacency,” Arizona Linguistics Circle 2 at University of Arizona, Tucson, AZ (October 31-Nov 2, 2008).
- **Bhatia, Archna** and Hans H. Hock. 2008. “The Origin of the Indo-Aryan Ergative Construction Revisited,” South Asian Linguistic Analysis 27 at the University of Wisconsin, Madison, WI (October 16-19, 2008).  
  
- Also a previous version presented at the Linguistics Seminar at the University of Illinois at Urbana-Champaign, IL (October 9, 2008).  
  
- A previous version was also accepted at the 18<sup>th</sup> International Conference on Historical Linguistics, Montreal, Canada (August 6-11, 2007).
- **Bhatia, Archna**. 2006. “Testing Universality of Cinque's Hierarchy with respect to an SOV language: Adverb Placement in Hindi,” WIGL 4 at the University of Wisconsin, Madison, WI (February 17-18, 2006).
- **Bhatia, Archna**. 2005. “Role of Definiteness, Specificity & Animacy in the Prominence of Object NPs in Hindi,” South Asian Linguistic Analysis 25 at the University of Illinois at Urbana-Champaign, IL (October 15-18, 2005).
- **Bhatia, Archna**. 2001. “Feature Checking in Paite,” Niagara Linguistics Society Conference at the University at Buffalo, Buffalo, NY (October 13-14, 2001).

#### **OTHER TALKS AT WORKSHOPS (WITHOUT PROCEEDINGS)**

- **Bhatia, Archna**, Chris Dyer and Lori Levin (alphabetical order). 2014. “Swahili Treebanking using Graph Fragment Language”, training Treebankers at Department of English, Howard University, Washington DC (January 18-19, 2014)
- Levin, Lori, **Archna Bhatia**, Yulia Tsvetkov and Chris Dyer. “Definiteness: Annotations and Translation,” Linguistic Core MT MURI meeting, University of Maryland, College Park (November 22, 2013)
- **Bhatia, Archna**, Ashwini Vaidya and Bhuvana Narasimhan. 2009. “Complex Predicates,” Hindi

Treebanking Workshop at IIIT, Hyderabad (Dec 17-21, 2009).

- **Bhatia, Archana**, Ashwini Vaidya and Bhuvana Narasimhan. 2009. "Empty Categories," Hindi Treebanking Workshop at IIIT, Hyderabad (Dec 17-21, 2009).

## INVITED LECTURES, TALKS, DISCUSSION

- "Analyzing conjunct agreement," at Thursday Thoughts, Linguistics Speaker Series in the Linguistics Department, University of Pennsylvania, Philadelphia, PA (September 18, 2014).
- "Studying form-function mappings cross-linguistically," at Common Ground Seminar Series, IRCS, University of Pennsylvania, Philadelphia, PA (September 17, 2014).
- "Studying form-function mappings cross-linguistically," at Lunch Series at Florida Institute for Human and Machine Cognition, Ocala, FL (August 7, 2014).
- "Studying form-function mappings cross-linguistically," at Computational Linguistics + NLP lunch Seminar Series, Language Technologies Institute, Carnegie Mellon University (August 5, 2014).
- Round Table Discussion on "The Future of Treebanks" at the Twelfth Workshop on Treebanks and Linguistic Theories, Sofia, Bulgaria (December 14, 2013)- invited as one of the main discussants (declined due to a visa related issue).
- Tutorial on "Government and Binding Theory" at the Linguistics Reading Group for the Computer Scientists, Language Technologies Institute, Carnegie Mellon University (July- August 2013)
- "Improving Machine Translations using semantic annotations: Definiteness Annotation Scheme as an example" in Professor Mandy Simon's class "Syntax and Discourse (80283)" at Carnegie Mellon University, 11 April, 2013.
- "Agreement and Coordination in Hindi" in Professor Elabbas Benmamoun's class "Syntax II (LING 541)" at the University of Illinois at Urbana-Champaign, 14 April 2011.
- "Role of Null Categories in conversion from DS to PS representation" in
  - Professor Laura Michaelis-Cummings' class "Syntactic Analysis (LING 6450)" at the University of Colorado at Boulder, 11 March 2010.
  - Professor Martha Palmer's class "Computational Lexical Semantics (LING 7800)" at the University of Colorado at Boulder, 10 March 2010.
  - CompSem meeting at the University of Colorado at Boulder, 9 March 2010.
- "Hindi Phonetics" in Professor Chilin Shih's class "Introduction to General Phonetics (LING 401)" at the University of Illinois at Urbana-Champaign in Fall 2004.

## HONORS, FELLOWSHIPS AND AWARDS

- The 2009 Chin W. Kim Research Award. Awarded by the Department of Linguistics, University of Illinois at Urbana-Champaign, College of Liberal Arts & Sciences.
- University of Illinois Linguistics Department Summer Fellowship 2008.
- University of Illinois Fellowship 2007-2008.
- University of Illinois Linguistics Department Fellowship 2007-2008.
- University of Chicago Century Fellowship 2003-2008 (declined).
- Ranked as "Excellent Teacher" in student evaluations: Spring 2007, Spring 2006 (among top 10% of the teachers rated at the University of Illinois), Fall 2005, Spring 2004.
- York Fellowship 2001-2002. Awarded by York University.

- Gold medal, MA (Linguistics) 2001. Awarded by University of Delhi (Oct 2001).
- Junior Research Fellowship 2001 (granted only to one candidate selected from all over India based on a national examination), University Grants Commission, National Educational Testing, India (declined).
- Eligibility for Lectureship (candidates selected based on performance on a national examination), University Grants Commission, National Educational Testing, India.
- Certificate for second rank at the University of Delhi for Bachelors Degree (1999).

## TEACHING EXPERIENCE

### ***Linguistics courses and NLP courses:***

1. *Corpus Annotation: TreeBanking (Independent Study)* (Spring 2013, taught with Prof. Lori Levin, at Language Technologies Institute, School of Computer Science, Carnegie Mellon University, Pittsburgh)
2. *Korean TreeBanking (Independent Study)* (Fall 2013, taught with Prof. Lori Levin, at Language Technologies Institute, School of Computer Science, Carnegie Mellon University, Pittsburgh)
3. *Introduction to Language Science, LING 100* (Fall 2008, in Department of Linguistics, University of Illinois at Urbana-Champaign)
4. *Introduction to Linguistics, LING 1000* (Sep 2001-April 2002, Sep 2002- April 2003, in Department of Languages, Literatures and Linguistics, York University, Toronto, Canada).
5. *Grammatical Structure of English, LING 2060* (Sep 2002-April 2003, in Department of Languages, Literatures and Linguistics, York University, Toronto, Canada).

### ***Hindi language courses:***

1. *Hindi II, 121-1* (Fall 2011, in WCAS Asian Languages & Cultures Department, Northwestern University, Evanston)
2. *Hindi II, 121-2* (Winter 2012, in WCAS Asian Languages & Cultures Department, Northwestern University, Evanston)
3. *Hindi II, 121-3* (Spring 2012, in WCAS Asian Languages & Cultures Department, Northwestern University, Evanston)
4. *Topics in Intermediate Hindi, 211-1* (Fall 2011, in WCAS Asian Languages & Cultures Department, Northwestern University, Evanston)
5. *Topics in Intermediate Hindi, 211-2* (Winter 2012, in WCAS Asian Languages & Cultures Department, Northwestern University, Evanston)
6. *Topics in Intermediate Hindi, 211-3* (Spring 2012, in WCAS Asian Languages & Cultures Department, Northwestern University, Evanston)
7. *Hindi-Urdu I, HNDI 101-001* (Fall 2011, in Modern Languages and Literatures, Loyola University, Chicago)
8. *Hindi-Urdu II, HNDI 102-001* (Spring 2012, in Modern Languages and Literatures, Loyola University, Chicago)
9. *Elementary Hindi I, HNDI 201* (Fall 2003, Fall 2004, Fall 2005, Fall 2006, Fall 2007, Fall 2008, Department of Linguistics, UIUC)
10. *Elementary Hindi II, HNDI 202* (Spring 2004, Spring 2005, Spring 2007 (2 sections), Spring 2008, Spring 2009, Department of Linguistics, UIUC)
11. *Intermediate Hindi I, HNDI 403* (Fall 2003, Fall 2004, Fall 2005, Department of Linguistics, UIUC)
12. *Intermediate Hindi II, HNDI 404* (Spring 2006, Department of Linguistics, UIUC).

### ***Responsibilities:***

Holding lectures/ discussion/ tutorial sessions, holding office hours and advising students on the course content as well as their research projects, holding lab classes (where I made use of media for instructional purposes), preparing teaching material and exercises, grading and proctoring examinations, designing the courses, advising students on appropriate research topics, guiding them in their research on the topic, editing and evaluating their work for the Honors Projects

### **Research project supervisor**

**Co-supervised** an undergraduate student for an advanced research project (Psych 494) with Heidi Lorimor, “Linear order and directional branching: Do head-final languages show the same linear word order effects as head-initial languages?” Language Production Laboratory, University of Illinois at Urbana-Champaign (Spring 2007).

### **KNOWLEDGE OF LANGUAGES**

- Proficient in
  - Hindi and English: spoken and written
  - Punjabi: spoken
- Other languages learned/worked on/ working on
  - German, Sanskrit, Latin, Indo-Pakistani Sign Language, American Sign Language, Paite, Dakhini Hindi, Ondarroan Basque, Korean, Tamil, Tsez, Zulu

### **PROGRAMMING LANGUAGES, NLP FRAMEWORKS, TOOLS**

- Python, awk, Java, Perl, Bash and HTML; CSS
- Finite State Transducers, NLTK, WEKA, MALLET, tregex, tsurgeon

### **PROFESSIONAL & OTHER SERVICES**

- One of the judges for the Student Research Symposium 2013 at the Language Technologies Institute, the School of Computer Science, Carnegie Mellon University (August 21, 2013).
- Reviewer for Conferences: *Linguistic Society of America; Illinois Language and Linguistics Society*
- Reviewer for the Journals: *Second Language Research; Journal Studies in the Linguistic Sciences: Illinois Working Papers*
- *Reviewer for the Workshops: Language Annotation Workshop 2014*
- Helper in organizing Conferences:
  - 10<sup>th</sup> Generative Approaches to Second Language Acquisition Conference (GASLA-10). University of Illinois at Urbana-Champaign, IL (March 13-15, 2009).
  - NELS 37. University of Illinois at Urbana-Champaign, IL (October 13-15, 2006).
  - 25<sup>th</sup> South Asian Language Analysis Roundtable. University of Illinois at Urbana-Champaign, IL (October 15-18, 2005).
  - Workshop on Ergativity. University of Toronto (October 18-19, 2002).
- Organizer of “Syntax-Semantics Reading Group”
  - in Fall 2010 with Professor Jonathan MacDonald (bi-weekly meetings),
  - in Spring 2009 (bi-weekly meetings), Fall 2008 (weekly meetings),
  - in Spring 2007, Fall 2007 with Prof. Karlos Arregi (bi-weekly meetings),
  - in Fall 2006 with Naiara Centeno and Prof. Karlos Arregi (bi-weekly meetings).
- Web Page Administrator:
  - Maintenance of the webpage for the “Syntax-Semantics Reading Group” in Fall 2010, Spring 2009, Fall 2007, Spring 2007 and Fall 2006.

- Maintenance of the webpage for the “F3: The [f]onetics and [f]onology [f]orum, a weekly discussion group” in Spring 2007; and in Fall 2006 with Professor Stephen Winters.
- Proficiency examination for Hindi
  - Prepared, conducted and graded the Proficiency Examination for Hindi in Fall 2004, Spring 2005, Fall 2005 and Spring 2006;
  - Assisted the Hindi Program Director in conducting the exam in Fall 2006, Spring 2007, Fall 2007, Fall 2008 and Spring 2009.
- Presenter and facilitator for graduate academy for college teaching
  - Designed, prepared and held a workshop “An Inventory of Teaching Strategies,” for the Graduate Academy for College teaching (UIUC) for the orientation of new teaching assistants and international teaching assistants (August 19, 2008).
  - Facilitated two small group sessions “Maximizing Office Hours” and “Practicing the Principles of Grading” together with Lyndal Khaw at the Graduate Symposium on Grading and Office hours, TA orientation program, UIUC (August 20, 2008).
- Curriculum Developer:
  - Delhi University Sign Language Teaching Group: assisted Professor Zeshan Ulrike in preparation of lessons in Indo-Pakistani Sign Language for teaching English to hearing impaired learners (2000-2001).
  - Curriculum Development Program: worked as curriculum developer for Mathematics in Digantar, an innovative school in India (Summer 2000).
  - School Mathematics Project: assisted Professor Vijaya S. Varma and Professor Amitabha Mukherjee in analysis of activities and materials used in teaching Mathematics in schools in India, and development of required material (1999-2001).
- Volunteer for hindi teaching program for foreign students in india
  - Assisted Professor K.V. Subbarao in the Hindi Teaching Program for Foreign Students at the University of Delhi (2001-2002).
- Volunteer for the voice- recording project for visually- challenged students/scholars of linguistics in india
  - I assisted Professor R.K. Agnihotri, University of Delhi in voice recording the linguistics articles and book chapters to be kept in the linguistics library at the University of Delhi for use by visually-challenged students/scholars in India (2002-2003).

## **PROFESSIONAL MEMBERSHIPS**

- Member of Linguistics Society of America (Jan 2004 – present), Canadian Linguistics Association (2009- present), Association for Computational Linguistics (June 2013 - present), Linguistic Society of India (Nov 2013 - present).