

Seminar Wintersemester 2010/2011: Koreferenzresolution

Michael Strube
Heidelberger Institut für Theoretische Studien
Schloss-Wolfsbrunnenweg 35
69118 Heidelberg
<http://michael.kimstrube.de>

21. Januar 2011

Termine, Themenvorschläge

21.10.2010

Überblick: Anaphern, Anaphernresolution, Koreferenzresolution, Terminologie:
Mitkov (2002), Strube (2009)

28.10.2010

zur Vorbereitung: Hobbs (1978) oder Sidner (1983)

Bindungstheorie und Diskursrepräsentationstheorie: Chomsky (1981), Fanselow & Felix (1987), Ingria & Stallard (1989), Lappin & McCord (1990), Merlo (1993), Haegele (1994), Strube & Hahn (1995), Stuckhardt (1996), Gordon & Hendrick (1997), Gordon & Hendrick (1998), Bos (2003)

Vorläufer: Charniak (1973), Hobbs (1978)

Fokusmodell: Sidner (1981), Sidner (1983), Azzam (1996), Azzam et al. (1998), Suri & McCoy (1994), Suri et al. (1999)

04.11.2010

zur Vorbereitung: Brennan et al. (1987) oder Strube (1998)

Centeringmodell: Grosz et al. (1983), Grosz et al. (1995), Grosz & Sidner (1998), Gundel (1998), Joshi & Weinstein (1998), Kameyama (1998), Kibble (2001), Poesio et al. (2004), Karamanis et al. (2009)

Centering – BFP-Algorithmus: Brennan et al. (1987), Walker (1989), Walker et al. (1994)

Centering für andere Sprachen: Di Eugenio (1990), No (1991), Walker et al. (1994), Strube & Hahn (1996), Di Eugenio (1996), Di Eugenio (1998), Hoffman (1998), Iida (1998), Turan (1998), Strube & Hahn (1999)

Inkrementalität und Game Theory: Kehler (1997a), Strube (1998), Tetraeult (2001), Beaver (2004)

11.11.2010

zur Vorbereitung: Lappin & Leass (1994)

Heuristiken: Lappin & Leass (1994), Qiu et al. (2004), Haghghi & Klein (2009), Raghunathan et al. (2010)

Wissensarme Ansätze: Kennedy & Boguraev (1996a), Kennedy & Boguraev (1996b), Baldwin (1997), Kameyama (1997), Mitkov (1998)

18.11.2010

zur Vorbereitung: Bagga & Baldwin (1998a)

Referat: Neri Kranz – Daten, Annotation, Evaluierung: Vilain et al. (1995), Bagga & Baldwin (1998a), Luo (2005)

optional: van Deemter & Kibble (2000), Byron (2001), Mitkov (2002), Müller & Strubé (2006), Mitkov & Hallett (2007), Recasens & Martí (2009), Stoyanov et al. (2009), Cai & Strube (2010b), Recasens & Hovy (2010)

25.11.2010

zur Vorbereitung: Soon et al. (2001)

Machine Learning – Klassifikation und Clustering: McCarthy & Lehnert (1995), Aone & Bennett (1995), Soon et al. (1999), Soon et al. (2001), Ng & Cardie (2002b), Luo et al. (2004), Versley et al. (2008a), Versley et al. (2008b), Bengtson & Roth (2008), Denis & Baldridge (2008), Stoyanov et al. (2009), Rahman & Ng (2009), Ng (2010)

02.12.2010

Referat: Huiqin Körkel-Qu – Integer Linear Programming für Koreferenzresolution: Klenner & Ailloud (2009) (Klenner, 2007; Denis & Baldridge, 2007b; Finkel & Manning, 2008)

zur Vorbereitung: Klenner & Ailloud (2009)

optional: Twin Candidate Model: Connolly et al. (1997), Yang et al. (2003), Yang et al. (2008)

09.12.2010

Referat: Samuel Broscheit – Entitätsbasierte Verfahren: Cai & Strube (2010a)

zur Vorbereitung: Cai & Strube (2010a)

optional: Daumé III & Marcu (2005), Culotta et al. (2007), Sapena et al. (2010)

Ranking: Ng (2005), Denis & Baldridge (2007a), Denis & Baldridge (2008)

Inductive Logic Programming: Yang et al. (2008)

16.12.2010

Referat: Eric Hildebrand – Referent ist nicht mehr erschienen, nachdem er sich für das Referat angemeldet hat

Referat: Éva Múdrizca-Maydt – Graph-basiertes *Clustering*: Nicolae & Nicolae (2006)

zur Vorbereitung: Nicolae & Nicolae (2006)

optional: Schwach-überwachte Verfahren: Müller et al. (2002), Ng & Cardie (2003b), Ng & Cardie (2003a), Bergsma & Lin (2006), Cai & Strube (2010a)

optional: Nicht-überwachte Verfahren: Cardie & Wagstaff (1999), Bean & Riloff (2004), Haghghi & Klein (2007), Ng (2008), Poon & Domingos (2008), Charniak & Elsner (2009), Haghghi & Klein (2010), Cai & Strube (2010a)

13.01.2011

Referat: Martin Simmeth – Nullpronomen: Iida et al. (2006), Iida et al. (2007)

zur Vorbereitung: Iida et al. (2006)

optional: Walker et al. (1994), Isozaki & Hirao (2003), Zhao & Ng (2007), Iida et al. (2009)

Pronomenauflösung: Ge et al. (1998), Kehler et al. (2004), Yang et al. (2005), Bergsma & Lin (2006), Yang et al. (2006), Charniak & Elsner (2009)

Definite NPs: Poesio & Vieira (1998), Vieira & Poesio (2000)

20.01.2011

Referat: Albina Galeeva – Wissensquellen für Koreferenzresolution: Yang & Su (2007) (und, als Hintergrund Harabagiu et al. (2001), Ponzetto & Strube (2006))

zur Vorbereitung: Harabagiu et al. (2001) oder Ponzetto & Strube (2006) oder Yang & Su (2007)

optional: Modjeska et al. (2003), Bean & Riloff (2004), Ji et al. (2005), Markert & Nissim (2005), Garera & Yarowsky (2006), Ng (2007), Huang et al. (2009)

Features: Ng & Cardie (2002b), Bengtson & Roth (2008), Haghghi & Klein (2009)

27.01.2011

Koreferenzresolution in Dialogen: Eckert & Strube (2000), Müller (2007)

zur Vorbereitung: Müller (2007)

optional: Eckert & Strube (1999), Byron (2002), Strube & Müller (2003), Müller (2006)

Event coreference: Chen & Ji (2009), Bin et al. (2010b), Bin et al. (2010a)

Cross-document coreference: Bagga & Baldwin (1998b), Mann & Yarowsky (2003), Bunescu & Paşa (2006), Popescu (2010), Rao et al. (2010)

03.02.2011

Zusammenfassung, Diskussion

zur Vorbereitung: Welche interessanten Fragestellungen wurden bisher vernachlässigt?
Welche erfolgversprechenden Methoden und/oder *Features* wurden bisher nicht berücksichtigt?
Was muß man tun, um mehr als die üblichen zwei Prozent Verbesserung zu erreichen?

Weitere Themenvorschläge:

Anaphorizität: Evans (2001), Ng & Cardie (2002a), Ng (2004), Bergsma et al. (2008), Ng (2009), Zhou & Kong (2009)

Koreferenzresolution für automatische Zusammenfassung, Question Answering, Informationsextraktion: Kehler (1997b), Stuckhardt (2003), Zelenko et al. (2004), Steinberger et al. (2005), Steinberger et al. (2007)

Psycholinguistische Ansätze: Gordon et al. (1993), Brennan (1995), Gordon & Chan (1995), Gordon & Scearce (1995), Gordon & Hendrick (1997), Brennan (1998), Chambers & Smyth (1998), Gordon & Hendrick (1998), Kehler et al. (2008)

Bemerkungen

Leistungsnachweise: Lektüre und aktive Teilnahme (1/3), Referat (1/3), Hausarbeit (1/3). Hausarbeit: 8-10 Seiten (Proseminar), 12-15 Seiten (Hauptseminar) inkl. Bibliographie. Die Hausarbeit kann auch per Email an mich geschickt werden, aber *nicht* als Word-Datei sondern nur als PDF-Datei. – Ich empfehle, wissenschaftliche Texte mit Latex und Bibtex zu verfassen.

Regelmäßige Teilnahme (d.i. nicht mehr als einmal unentschuldigtes Fehlen) ist Voraussetzung für Scheinerwerb. Zu jeder Sitzung müssen jeweils zwei Fragen (!) zu einem Papier abgegeben werden, das in der aktuellen Sitzung vorgestellt wird. Abgabe entweder per Email bis spätestens 13 Uhr am Tag der Sitzung oder schriftlich direkt vor der Sitzung. Dies geht in die Bewertung für aktive Teilnahme am Seminar ein.

Literatur: Viele Papiere können direkt aus der *ACL Anthology* kopiert werden (<http://acl.ldc.upenn.edu/>), insbesondere alle Papiere der (E/NA)ACL-, *Coling*- und *EMNLP*-Konferenzen, alle Workshops, die im Rahmen dieser Konferenzen veranstaltet wurden und die Zeitschrift *Computational Linguistics*. Papiere, die von der *AAAI* publiziert wurden (*AAAI*-Konferenz, *AAAI*-Workshops, *AAAI*-Symposia, etc.) sind in der *AAAI Digital Library* verfügbar (<http://www.aaai.org/Library>). – Die meisten weiteren Zeitschriften sind elektronisch verfügbar über die UB (<http://rzblx1.uni-regensburg.de/ezeit/search.phtml?bibid=UBHE>) – oder stehen dort im Regal.

Sprechstunde: Auf Vereinbarung (Email, Telefon) bei mir im Büro, ggf. auch im Anschluß an das Seminar.

Hausarbeiten:

Maximal 8-10 Seiten (Proseminar), 12-15 Seiten (Hauptseminar) inkl. Abbildungen, inkl. Literaturverzeichnis.

Inhalt: Fokus auf das vorgestellte Papier; NICHT *Related Work*-Kapitel referieren, wenn die entsprechenden Papiere nicht gelesen wurden; Evaluierung berichten; WICHTIG: mit eigener Meinung oder Bewertung abschließen.

Stil: Wissenschaftlichkeit drückt sich nicht durch lange, komplizierte Sätze und exzessiven Gebrauch von Fremdwörtern aus – deshalb bitte kurze Sätze, einfache Sprache; Hausarbeiten vor der Abgabe Korrektur lesen oder Korrektur lesen lassen (s. auch *Dos and don'ts: Hinweise zur Abfassung wissenschaftlicher Arbeiten* von Prof. Frank – http://www.cl.uni-heidelberg.de/~frank/materials/dos_and_donts.pdf).

Seminararbeit (d.i. eine praktische Arbeit) ist auch möglich. Sollte durch 5-6 Seiten Bericht begleitet werden.

Abgabetermin: bis spätestens 01. März 2011; per Email als PDF-Datei (kein Microsoft Word!) oder ausgedruckt per Post – Matrikelnummer und Studiengang nicht vergessen!

Literatur

- Aone, Chinatsu & Scott W. Bennett (1995). Evaluating automated and manual acquisition of anaphora resolution strategies. In *Proceedings of the 33rd Annual Meeting of the Association for Computational Linguistics*, Cambridge, Mass., 26–30 June 1995, pp. 122–129.
- Azzam, Saliha (1996). Resolving anaphors in embedded sentences. In *Proceedings of the 34th Annual Meeting of the Association for Computational Linguistics*, Santa Cruz, Cal., 24–27 June 1996, pp. 253–269.
- Azzam, Saliha, Kevin Humphreys & Robert Gaizauskas (1998). Evaluating a focus-based approach to anaphora resolution. In *Proceedings of the 17th International Conference on Computational Linguistics and 36th Annual Meeting of the Association for Computational Linguistics*, Montréal, Québec, Canada, 10–14 August 1998, pp. 74–78.
- Bagga, Amit & Breck Baldwin (1998a). Algorithms for scoring coreference chains. In *Proceedings of the 1st International Conference on Language Resources and Evaluation*, Granada, Spain, 28–30 May 1998, pp. 563–566.
- Bagga, Amit & Breck Baldwin (1998b). Entity-based cross-document coreferencing using the vector space model. In *Proceedings of the 17th International Conference on Computational Linguistics and 36th Annual Meeting of the Association for Computational Linguistics*, Montréal, Québec, Canada, 10–14 August 1998, pp. 79–85.
- Baldwin, Breck (1997). CogNIAC: High precision coreference with limited knowledge and linguistic resources. In *Proceedings of the ACL Workshop on Operational Factors in Practical, Robust Anaphora Resolution for Unrestricted Text*, Madrid, Spain, July 1997, pp. 38–45.
- Bean, David & Ellen Riloff (2004). Unsupervised learning of contextual role knowledge for coreference resolution. In *Proceedings of the Human Language Technology Conference of the North American Chapter of the Association for Computational Linguistics*, Boston, Mass., 2–7 May 2004, pp. 297–304.
- Beaver, David L. (2004). The optimization of discourse anaphora. *Linguistics and Philosophy*, 27(1):3–56.
- Bengtson, Eric & Dan Roth (2008). Understanding the value of features for coreference resolution. In *Proceedings of the 2008 Conference on Empirical Methods in Natural Language Processing*, Waikiki, Honolulu, Hawaii, 25–27 October 2008, pp. 294–303.
- Bergsma, Shane & Dekang Lin (2006). Bootstrapping path-based pronoun resolution. In *Proceedings of the 21st International Conference on Computational Linguistics and 44th Annual Meeting of the Association for Computational Linguistics*, Sydney, Australia, 17–21 July 2006, pp. 33–40.
- Bergsma, Shane, Dekang Lin & Randy Goebel (2008). Distributional identification of non-referential pronouns. In *Proceedings of the 46th Annual Meeting of the Association for Computational Linguistics: Human Language Technologies*, Columbus, Ohio, 15–20 June 2008, pp. 10–18.
- Bin, Chen, Jian Su & Tan Chew Lim (2010a). Resolving event noun phrases to their verbal mentions. In *Proceedings of the 2010 Conference on Empirical Methods in Natural Language Processing*, Cambridge, Mass., 9–11 October 2010, pp. 872–881.
- Bin, Chen, Jian Su & Tan Chew Lim (2010b). A twin-candidate based approach for event pronoun resolution using composite kernel. In *Proceedings of the 23rd International Conference on Computational Linguistics*, Beijing, China, 23–27 August 2010, pp. 188–196.
- Bos, Johan (2003). Implementing the binding and accommodation theory for anaphora resolution and presupposition projection. *Computational Linguistics*, 29(2):179–210.
- Brennan, Susan E. (1995). Centering attention in discourse. *Language and Cognitive Processes*, 10(2):137–167.
- Brennan, Susan E. (1998). Centering as a psychological resource for achieving joint reference in spontaneous discourse. In M.A. Walker, A.K. Joshi & E.F. Prince (Eds.), *Centering in Discourse*, pp. 227–249. Oxford, U.K.: Oxford University Press.
- Brennan, Susan E., Marilyn W. Friedman & Carl J. Pollard (1987). A centering approach to pronouns. In *Proceedings of the 25th Annual Meeting of the Association for Computational*

- Linguistics*, Stanford, Cal., 6–9 July 1987, pp. 155–162.
- Bunescu, Razvan & Marius Pașca (2006). Using encyclopedic knowledge for named entity disambiguation. In *Proceedings of the 11th Conference of the European Chapter of the Association for Computational Linguistics*, Trento, Italy, 3–7 April 2006, pp. 9–16.
- Byron, Donna K. (2001). The uncommon denominator: A proposal for consistent reporting of pronoun resolution results. *Computational Linguistics*, 27(1):569–577.
- Byron, Donna K. (2002). Resolving pronominal reference to abstract entities. In *Proceedings of the 40th Annual Meeting of the Association for Computational Linguistics*, Philadelphia, Penn., 7–12 July 2002, pp. 80–87.
- Cai, Jie & Michael Strube (2010a). End-to-end coreference resolution via hypergraph partitioning. In *Proceedings of the 23rd International Conference on Computational Linguistics*, Beijing, China, 23–27 August 2010, pp. 143–151.
- Cai, Jie & Michael Strube (2010b). Evaluation metrics for end-to-end coreference resolution systems. In *Proceedings of the SIGdial 2010 Conference: The 11th Annual Meeting of the Special Interest Group on Discourse and Dialogue*, Tokyo, Japan, 24–25 September 2010, pp. 28–36.
- Cardie, Claire & Kiri Wagstaff (1999). Noun phrase coreference as clustering. In *Proceedings of the 1999 SIGDAT Conference on Empirical Methods in Natural Language Processing and Very Large Corpora*, College Park, Md., 21–22 June 1999, pp. 82–89.
- Chambers, C.G. & R. Smyth (1998). Structural parallelism and discourse coherence: A test of centering theory. *Journal of Memory and Language*, 39(4):593–608.
- Charniak, Eugene (1973). Jack and Janet in search of a theory of knowledge. In *Advance Papers from the Third International Joint Conference on Artificial Intelligence*, Stanford, Cal., pp. 337–343. Los Altos, Cal.: W. Kaufmann.
- Charniak, Eugene & Micha Elsner (2009). Em works for pronoun anaphora resolution. In *Proceedings of the 12th Conference of the European Chapter of the Association for Computational Linguistics*, Athens, Greece, 30 March – 3 April 2009, pp. 148–156.
- Chen, Zheng & Heng Ji (2009). Graph-based event coreference resolution. In *Proceedings of TextGraphs-4: Graph-based Algorithms for Natural Language Processing, Workshop at ACL-IJCNLP 2009*, Singapore, 7 August 2009, pp. 54–57.
- Chomsky, Noam (1981). *Lectures on Government and Binding*. Dordrecht: Foris.
- Connolly, Dennis, John D. Burger & David S. Day (1997). A machine learning approach to anaphoric reference. In D. Jones & H. Somers (Eds.), *New Methods in Language Processing*, pp. 133–143. Oxford University Press.
- Culotta, Aron, Michael Wick & Andrew McCallum (2007). First-order probabilistic models for coreference resolution. In *Proceedings of Human Language Technologies 2007: The Conference of the North American Chapter of the Association for Computational Linguistics*, Rochester, N.Y., 22–27 April 2007, pp. 81–88.
- Daumé III, Hal & Daniel Marcu (2005). A large-scale exploration of effective global features for a joint entity detection and tracking model. In *Proceedings of the Human Language Technology Conference and the 2005 Conference on Empirical Methods in Natural Language Processing*, Vancouver, B.C., Canada, 6–8 October 2005, pp. 97–104.
- Denis, Pascal & James Baldridge (2007a). A ranking approach to pronoun resolution. In *Proceedings of the 20th International Joint Conference on Artificial Intelligence*, Hyderabad, India, 6–12 January 2007, pp. 1588–1593.
- Denis, Pascal & Jason Baldridge (2007b). Joint determination of anaphoricity and coreference resolution using integer programming. In *Proceedings of Human Language Technologies 2007: The Conference of the North American Chapter of the Association for Computational Linguistics*, Rochester, N.Y., 22–27 April 2007, pp. 236–243.
- Denis, Pascal & Jason Baldridge (2008). Specialized models and ranking for coreference resolution. In *Proceedings of the 2008 Conference on Empirical Methods in Natural Language Processing*, Waikiki, Honolulu, Hawaii, 25–27 October 2008, pp. 660–669.
- Di Eugenio, Barbara (1990). Centering theory and the Italian pronominal system. In *Proceedings of the 13th International Conference on Computational Linguistics*, Helsinki, Finland, 20–25

- August 1990, Vol. 2, pp. 270–275.
- Di Eugenio, Barbara (1996). The discourse function of Italian subjects: A centering approach. In *Proceedings of the 16th International Conference on Computational Linguistics*, Copenhagen, Denmark, 5–9 August 1996, Vol. 1, pp. 352–357.
- Di Eugenio, Barbara (1998). Centering in Italian. In M.A. Walker, A.K. Joshi & E.F. Prince (Eds.), *Centering Theory in Discourse*, pp. 115–137. Oxford, U.K.: Oxford University Press.
- Eckert, Miriam & Michael Strube (1999). Resolving discourse deictic anaphora in dialogues. In *Proceedings of the 9th Conference of the European Chapter of the Association for Computational Linguistics*, Bergen, Norway, 8–12 June 1999, pp. 37–44.
- Eckert, Miriam & Michael Strube (2000). Dialogue acts, synchronising units and anaphora resolution. *Journal of Semantics*, 17(1):51–89.
- Evans, Richard (2001). Applying machine learning toward an automatic classification of it. *Literary and Linguistic Computing*, 16(1):45–57.
- Fanselow, Gisbert & Sascha W. Felix (1987). *Sprachtheorie. Eine Einführung in die Generative Grammatik. Bd. 2: Die Rektions- und Bindungstheorie*. Tübingen: Francke.
- Finkel, Jenny Rose & Christopher Manning (2008). Enforcing transitivity in coreference resolution. In *Companion Volume to the Proceedings of the 46th Annual Meeting of the Association for Computational Linguistics*, Columbus, Ohio, 15–20 June 2008, pp. 45–48.
- Garera, Nikesh & David Yarowsky (2006). Resolving and generating definite anaphora by modeling hypernymy using unlabeled corpora. In *Proceedings of the 10th Conference on Computational Natural Language Learning*, New York, N.Y., USA, 8–9 June 2006, pp. 37–44.
- Ge, Niyu, John Hale & Eugene Charniak (1998). A statistical approach to anaphora resolution. In *Proceedings of the Sixth Workshop on Very Large Corpora*, Montréal, Canada, pp. 161–170.
- Gordon, Peter C. & Davina Chan (1995). Pronouns, passives and discourse coherence. *Journal of Memory and Language*, 34:216–231.
- Gordon, Peter C., Barbara J. Grosz & Laura A. Gilliom (1993). Pronouns, names, and the centering of attention in discourse. *Cognitive Science*, 17:311–347.
- Gordon, Peter C. & Randall Hendrick (1997). Intuitive knowledge of linguistic co-reference. *Cognition*, 62:325–370.
- Gordon, Peter C. & Randall Hendrick (1998). The representation and processing of coreference in discourse. *Cognitive Science*, 22(4):389–424.
- Gordon, Peter C. & Kimberly A. Scearce (1995). Pronominalization and discourse coherence, discourse structure and pronoun interpretation. *Memory and Cognition*, 23:313–323.
- Grosz, Barbara J., Aravind K. Joshi & Scott Weinstein (1983). Providing a unified account of definite noun phrases in discourse. In *Proceedings of the 21st Annual Meeting of the Association for Computational Linguistics*, Cambridge, Mass., 15–17 June 1983, pp. 44–50.
- Grosz, Barbara J., Aravind K. Joshi & Scott Weinstein (1995). Centering: A framework for modeling the local coherence of discourse. *Computational Linguistics*, 21(2):203–225.
- Grosz, Barbara J. & Candace L. Sidner (1998). Lost intuitions and forgotten intentions. In M.A. Walker, A.K. Joshi & E.F. Prince (Eds.), *Centering in Discourse*, pp. 39–51. Oxford, U.K.: Oxford University Press.
- Gundel, Jeanette K. (1998). Centering theory and the givenness hierarchy: Towards a synthesis. In M.A. Walker, A.K. Joshi & E.F. Prince (Eds.), *Centering in Discourse*, pp. 183–198. Oxford, U.K.: Oxford University Press.
- Haegeman, Liliane (1994). *Introduction to Government & Binding* (2nd ed.). Oxford: Basil Blackwell.
- Haghghi, Aria & Dan Klein (2007). Unsupervised coreference resolution in a nonparametric Bayesian model. In *Proceedings of the 45th Annual Meeting of the Association for Computational Linguistics*, Prague, Czech Republic, 23–30 June 2007, pp. 848–855.
- Haghghi, Aria & Dan Klein (2009). Simple coreference resolution with rich syntactic and semantic features. In *Proceedings of the 2009 Conference on Empirical Methods in Natural Language Processing*, Singapore, 6–7 August 2009, pp. 1152–1161.
- Haghghi, Aria & Dan Klein (2010). Coreference resolution in a modular, entity centered model. In *Proceedings of Human Language Technologies 2010: The Conference of the North American Chapter of the Association for Computational Linguistics*, Los Angeles, CA, USA, 25–29 June 2010, pp. 1152–1161.

- rican Chapter of the Association for Computational Linguistics, Los Angeles, Cal., 2–4 June 2010, pp. 385–393.
- Harabagiu, Sanda M., Razvan C. Bunescu & Steven J. Maiorano (2001). Text and knowledge mining for coreference resolution. In *Proceedings of the 2nd Conference of the North American Chapter of the Association for Computational Linguistics*, Pittsburgh, Penn., 2–7 June 2001, pp. 55–62.
- Hobbs, Jerry R. (1978). Resolving pronominal references. *Lingua*, 44:311–338.
- Hoffman, Beryl (1998). Word order, information structure, and centering in Turkish. In M.A. Walker, A.K. Joshi & E.F. Prince (Eds.), *Centering Theory in Discourse*, pp. 251–271. Oxford, U.K.: Oxford University Press.
- Huang, Zhiheng, Guangping Zeng, Weiqun Xu & Asli Celikyilmaz (2009). Accurate semantic class classifier for coreference resolution. In *Proceedings of the 2009 Conference on Empirical Methods in Natural Language Processing*, Singapore, 6–7 August 2009, pp. 1232–1240.
- Iida, Masayo (1998). Discourse coherence and shifting centers in Japanese texts. In M.A. Walker, A.K. Joshi & E.F. Prince (Eds.), *Centering in Discourse*, pp. 161–180. Oxford, U.K.: Oxford University Press.
- Iida, Ryu, Kentaro Inui & Yuji Matsumoto (2006). Exploiting syntactic patterns as clues in zero-anaphora resolution. In *Proceedings of the 21st International Conference on Computational Linguistics and 44th Annual Meeting of the Association for Computational Linguistics*, Sydney, Australia, 17–21 July 2006, pp. 625–632.
- Iida, Ryu, Kentaro Inui & Yuji Matsumoto (2007). Zero-anaphora resolution by learning rich syntactic pattern features. *ACM Transactions on Asian Language Information Processing*, 6(5, Article 12).
- Iida, Ryu, Kentaro Inui & Yuji Matsumoto (2009). Capturing salience with a trainable cache model for zero-anaphora resolution. In *Proceedings of the Joint Conference of the 47th Annual Meeting of the Association for Computational Linguistics and the 4th International Joint Conference on Natural Language Processing*, Singapore, 2–7 August 2009, pp. 647–655.
- Ingria, Robert J. & David Stallard (1989). A computational mechanism for pronominal reference. In *Proceedings of the 27th Annual Meeting of the Association for Computational Linguistics*, Vancouver, B.C., Canada, 26–29 June 1989, pp. 262–271.
- Isozaki, Hideki & Tsutomu Hirao (2003). Japanese zero pronoun resolution based on ranking rules and machine learning. In *Proceedings of the 2003 Conference on Empirical Methods in Natural Language Processing*, Sapporo, Japan, 11–12 July 2003, pp. 184–191.
- Ji, Heng, David Westbrook & Ralph Grishman (2005). Using semantic relations to refine coreference decisions. In *Proceedings of the Human Language Technology Conference and the 2005 Conference on Empirical Methods in Natural Language Processing*, Vancouver, B.C., Canada, 6–8 October 2005, pp. 17–24.
- Joshi, Aravind K. & Scott Weinstein (1998). Formal systems for complexity and control of inference: A reprise and some hints. In M.A. Walker, A.K. Joshi & E.F. Prince (Eds.), *Centering in Discourse*, pp. 31–38. Oxford, U.K.: Oxford University Press.
- Kameyama, Megumi (1997). Recognizing referential links: An information extraction perspective. In *Proceedings of the ACL Workshop on Operational Factors in Practical, Robust Anaphora Resolution for Unrestricted Text*, Madrid, Spain, July 1997, pp. 46–53.
- Kameyama, Megumi (1998). Intrasentential centering: A case study. In M.A. Walker, A.K. Joshi & E.F. Prince (Eds.), *Centering Theory in Discourse*, pp. 89–112. Oxford, U.K.: Oxford University Press.
- Karamanis, Nikiforos, Chris Mellish, Massimo Poesio & Jon Oberlander (2009). Evaluating centering for information ordering using corpora. *Computational Linguistics*, 35(1):29–46.
- Kehler, Andrew (1997a). Current theories of centering for pronoun interpretation: A critical evaluation. *Computational Linguistics*, 23(3):467–475.
- Kehler, Andrew (1997b). Probabilistic coreference in information extraction. In *Proceedings of the 2nd Conference on Empirical Methods in Natural Language Processing*, Providence, R.I., 1–2 August 1997, pp. 163–173.
- Kehler, Andrew, Douglas Appelt, Lara Taylor & Aleksandr Simma (2004). The (non)utility

- of predicate-argument frequencies for prounoun interpretation. In *Proceedings of the Human Language Technology Conference of the North American Chapter of the Association for Computational Linguistics*, Boston, Mass., 2–7 May 2004, pp. 289–296.
- Kehler, Andrew, Laura Kertz, Hannah Rohde & Jeffrey R. Elman (2008). Coherence and coreference revisited. *Journal of Semantics*, 25(1):1–44.
- Kennedy, Christopher & Branimir Boguraev (1996a). Anaphora for everyone: Pronominal anaphora resolution without a parser. In *Proceedings of the 16th International Conference on Computational Linguistics*, Copenhagen, Denmark, 5–9 August 1996, Vol. 1, pp. 113–118.
- Kennedy, Christopher & Branimir Boguraev (1996b). Anaphora in a wider context: Tracking discourse referents. In *Proceedings of the 12th European Conference on Artificial Intelligence*, Budapest, Hungary, 11–16 August 1996, pp. 582–586.
- Kibble, Rodger (2001). A reformulation of Rule 2 of Centering theory. *Computational Linguistics*, 27(4):579–587.
- Klenner, Manfred (2007). Enforcing consistency on coreference sets. In *Proceedings of the International Conference on Recent Advances in Natural Language Processing*, Borovets, Bulgaria, 27–29 September 2007, pp. 323–328.
- Klenner, Manfred & Ailloud (2009). Optimization in coreference resolution is not needed: A nearly-optimal zero-one ILP algorithm with intensional constraints. In *Proceedings of the 12th Conference of the European Chapter of the Association for Computational Linguistics*, Athens, Greece, 30 March – 3 April 2009, pp. 442–450.
- Lappin, Shalom & Herbert J. Leass (1994). An algorithm for pronominal anaphora resolution. *Computational Linguistics*, 20(4):535–561.
- Lappin, Shalom & Michael McCord (1990). Anaphora resolution in Slot Grammar. *Computational Linguistics*, 16(4):197–212.
- Luo, Xiaoqiang (2005). On coreference resolution performance metrics. In *Proceedings of the Human Language Technology Conference and the 2005 Conference on Empirical Methods in Natural Language Processing*, Vancouver, B.C., Canada, 6–8 October 2005, pp. 25–32.
- Luo, Xiaoqiang, Abe Ittycheriah, Hongyan Jing, Nanda Kambhatla & Salim Roukos (2004). A mention-synchronous coreference resolution algorithm based on the Bell Tree. In *Proceedings of the 42nd Annual Meeting of the Association for Computational Linguistics*, Barcelona, Spain, 21–26 July 2004, pp. 136–143.
- Mann, Gideon S. & David Yarowsky (2003). Unsupervised personal name disambiguation. In *Proceedings of the 7th Conference on Computational Natural Language Learning*, Edmonton, Alberta, Canada, 31 May – 1 June 2003, pp. 33–40.
- Markert, Katja & Malvina Nissim (2005). Comparing knowledge sources for nominal anaphora resolution. *Computational Linguistics*, 31(3):367–401.
- McCarthy, Joseph F. & Wendy G. Lehnert (1995). Using decision trees for coreference resolution. In *Proceedings of the 14th International Joint Conference on Artificial Intelligence*, Montréal, Canada, 20–25 August 1995, pp. 1050–1055.
- Merlo, Paola (1993). For an incremental computation of intrasentential coreference. In *Proceedings of the 13th International Joint Conference on Artificial Intelligence*, Chambery, France, 28 August – 3 September 1993, Vol. 1, pp. 1216–1221.
- Mitkov, Ruslan (1998). Robust prounoun resolution with limited knowledge. In *Proceedings of the 17th International Conference on Computational Linguistics and 36th Annual Meeting of the Association for Computational Linguistics*, Montréal, Québec, Canada, 10–14 August 1998, pp. 869–875.
- Mitkov, Ruslan (2002). *Anaphora Resolution*. London, U.K.: Longman.
- Mitkov, Ruslan & Catalina Hallett (2007). Comparing prounoun resolution algorithms. *Computational Intelligence*, 23(2):262–297.
- Modjeska, Natalia M., Katja Markert & Malvina Nissim (2003). Using the web in machine learning for other-anaphora resolution. In *Proceedings of the 2003 Conference on Empirical Methods in Natural Language Processing*, Sapporo, Japan, 11–12 July 2003, pp. 176–183.
- Müller, Christoph (2006). Automatic detection of nonreferential *it* in spoken multi-party dialog. In *Proceedings of the 11th Conference of the European Chapter of the Association for*

- Computational Linguistics*, Trento, Italy, 3–7 April 2006. 49-56.
- Müller, Christoph (2007). Resolving it, this, and that in unrestricted multi-party dialog. In *Proceedings of the 45th Annual Meeting of the Association for Computational Linguistics*, Prague, Czech Republic, 23–30 June 2007, pp. 816–823.
- Müller, Christoph, Stefan Rapp & Michael Strube (2002). Applying Co-Training to reference resolution. In *Proceedings of the 40th Annual Meeting of the Association for Computational Linguistics*, Philadelphia, Penn., 7–12 July 2002, pp. 352–359.
- Müller, Christoph & Michael Strube (2006). Multi-level annotation of linguistic data with MMAX2. In Sabine Braun, Kurt Kohn & Joybrato Mukherjee (Eds.), *Corpus Technology and Language Pedagogy: New Resources, New Tools, New Methods*, pp. 197–214. Peter Lang: Frankfurt a.M., Germany.
- Ng, Vincent (2004). Learning noun phrase anaphoricity to improve coreference resolution. In *Proceedings of the 42nd Annual Meeting of the Association for Computational Linguistics*, Barcelona, Spain, 21–26 July 2004, pp. 151–158.
- Ng, Vincent (2005). Machine learning for coreference resolution: From local classification to global ranking. In *Proceedings of the 43rd Annual Meeting of the Association for Computational Linguistics*, Ann Arbor, Mich., 25–30 June 2005, pp. 157–164.
- Ng, Vincent (2007). Shallow semantics for coreference resolution. In *Proceedings of the 20th International Joint Conference on Artificial Intelligence*, Hyderabad, India, 6–12 January 2007, pp. 1689–1694.
- Ng, Vincent (2008). Unsupervised models for coreference resolution. In *Proceedings of the 2008 Conference on Empirical Methods in Natural Language Processing*, Waikiki, Honolulu, Hawaii, 25–27 October 2008, pp. 640–649.
- Ng, Vincent (2009). Graph-cut-based anaphoricity determination for coreference resolution. In *Proceedings of Human Language Technologies 2009: The Conference of the North American Chapter of the Association for Computational Linguistics*, Boulder, Col., 31 May – 5 June 2009, pp. 575–583.
- Ng, Vincent (2010). Supervised noun phrase coreference research: The first fifteen years. In *Proceedings of the 48th Annual Meeting of the Association for Computational Linguistics*, Uppsala, Sweden, 11–16 July 2010, pp. 1396–1411.
- Ng, Vincent & Claire Cardie (2002a). Combining sample selection and error-driven pruning for machine learning of coreference rules. In *Proceedings of the 2002 Conference on Empirical Methods in Natural Language Processing*, Philadelphia, Penn., 6–7 July 2002, pp. 55–62.
- Ng, Vincent & Claire Cardie (2002b). Improving machine learning approaches to coreference resolution. In *Proceedings of the 40th Annual Meeting of the Association for Computational Linguistics*, Philadelphia, Penn., 7–12 July 2002, pp. 104–111.
- Ng, Vincent & Claire Cardie (2003a). Bootstrapping coreference classifiers with multiple machine learning algorithms. In *Proceedings of the 2003 Conference on Empirical Methods in Natural Language Processing*, Sapporo, Japan, 11–12 July 2003, pp. 113–120.
- Ng, Vincent & Claire Cardie (2003b). Weakly supervised natural language learning without redundant views. In *Proceedings of the Human Language Technology Conference of the North American Chapter of the Association for Computational Linguistics*, Edmonton, Alberta, Canada, 27 May – 1 June 2003, pp. 173–180.
- Nicolae, Cristina & Gabriel Nicolae (2006). BestCut: A graph algorithm for coreference resolution. In *Proceedings of the 2006 Conference on Empirical Methods in Natural Language Processing*, Sydney, Australia, 22–23 July 2006, pp. 275–283.
- No, Yongkyoon (1991). A centering approach to the *[case][topic] restriction in Korean. *Linguistics*, 29:653–668.
- Poesio, Massimo, Rosemary Stevenson, Barbara Di Eugenio & Janet Hitzeman (2004). Centering: A parametric theory and its instantiations. *Computational Linguistics*, 30(3). 309–363.
- Poesio, Massimo & Renata Vieira (1998). A corpus-based investigation of definite description use. *Computational Linguistics*, 24(2):183–216.
- Ponzetto, Simone Paolo & Michael Strube (2006). Exploiting semantic role labeling, WordNet and Wikipedia for coreference resolution. In *Proceedings of the Human Language Technology*

- Conference of the North American Chapter of the Association for Computational Linguistics*, New York, N.Y., 4–9 June 2006, pp. 192–199.
- Poon, Hoifung & Pedro Domingos (2008). Joint unsupervised coreference resolution with Markov Logic. In *Proceedings of the 2008 Conference on Empirical Methods in Natural Language Processing*, Waikiki, Honolulu, Hawaii, 25–27 October 2008, pp. 650–659.
- Popescu, Octavian (2010). Dynamic parameters for cross document coreferece [sic]. In *Proceedings of Coling 2010: Poster Volume*, Beijing, China, 23–27 August 2010, pp. 988–996.
- Qiu, Long, Min-Yen Kan & Tat-Seng Chua (2004). A public reference implementation of the RAP anaphora resolution algorithm. In *Proceedings of the 4th International Conference on Language Resources and Evaluation*, Lisbon, Portugal, 26–28 May 2004, pp. 291–294.
- Raghunathan, Karthik, Heeyoung Lee, Sudarshan Rangarajan, Nathanael Chambers, Mihai Surdeanu, Dan Jurafsky & Christopher Manning (2010). A multi-pass sieve for coreference resolution. In *Proceedings of the 2010 Conference on Empirical Methods in Natural Language Processing*, Cambridge, Mass., 9–11 Ocotber 2010, pp. 492–501.
- Rahman, Altaf & Vincent Ng (2009). Supervised models for coreference resolution. In *Proceedings of the 2009 Conference on Empirical Methods in Natural Language Processing*, Singapore, 6–7 August 2009, pp. 968–977.
- Rao, Delip, Paul McNamee & Mark Dredze (2010). Streaming cross document entity coreference resolution. In *Proceedings of Coling 2010: Poster Volume*, Beijing, China, 23–27 August 2010, pp. 1050–1058.
- Recasens, Marta & Eduard Hovy (2010). BLANC: Implementing the Rand index for coreference evaluation. Submitted.
- Recasens, Marta & M. Antónia Martí (2009). AnCoraCo: coreferentially annotated corpora for Spanish and Catalan. *Language Resources and Evaluation*, 43(4):??
- Sapena, Emili, Lluís Padró & Jordi Turmo (2010). A global relaxation labeling approach to coreference resolution. In *Proceedings of Coling 2010: Poster Volume*, Beijing, China, 23–27 August 2010, pp. 1086–1094.
- Sidner, Candace L. (1981). Focusing for interpretation of pronouns. *American Journal of Computational Linguistics*, 7(4):217–231.
- Sidner, Candace L. (1983). Focusing in the comprehension of definite anaphora. In M. Brady & R.C. Berwick (Eds.), *Computational Models of Discourse*, pp. 267–330. Cambridge, Mass.: MIT Press. Reprinted in: Grosz, Barbara J. et al. (Eds.) (1986). *Readings in Natural Language Processing*. Morgan Kaufman: Los Altos, Cal., pp.363–394.
- Soon, Wee Meng, Hwee Tou Ng & Chung Yong Lim (1999). Corpus-based learning for noun phrase coreference resolution. In *Proceedings of the 1999 SIGDAT Conference on Empirical Methods in Natural Language Processing and Very Large Corpora*, College Park, Md., 21–22 June 1999, pp. 285–291.
- Soon, Wee Meng, Hwee Tou Ng & Daniel Chung Yong Lim (2001). A machine learning approach to coreference resolution of noun phrases. *Computational Linguistics*, 27(4):521–544.
- Steinberger, Josef, Mijail A. Kabadzov & Massimo Poesio (2005). Improving LSA-based summarization with anaphora resolution. In *Proceedings of the Human Language Technology Conference and the 2005 Conference on Empirical Methods in Natural Language Processing*, Vancouver, B.C., Canada, 6–8 October 2005, pp. 1–8.
- Steinberger, Josef, Massimo Poesio, Mijail A. Kabadzov & Karel Ježek (2007). Two uses of anaphora resolution in summarization. *Information Processing and Management*, 43(6):1663–1680.
- Stoyanov, Veselin, Nathan Gilbert, Claire Cardie & Ellen Riloff (2009). Conundrums in noun phrase coreference resolution: Making sense of the state-of-the-art. In *Proceedings of the Joint Conference of the 47th Annual Meeting of the Association for Computational Linguistics and the 4th International Joint Conference on Natural Language Processing*, Singapore, 2–7 August 2009, pp. 656–664.
- Strube, Michael (1998). Never look back: An alternative to centering. In *Proceedings of the 17th International Conference on Computational Linguistics and 36th Annual Meeting of the Association for Computational Linguistics*, Montréal, Québec, Canada, 10–14 August 1998,

- Vol. 2, pp. 1251–1257.
- Strube, Michael (2009). Anaphernresolution. In K.-U. Carstensen, C. Ebert, C. Endriss, S. Jekat, R. Klabunde & H. Langer (Eds.), *Computerlinguistik und Sprachtechnologie. Eine Einführung*, pp. 399–409. Heidelberg, Germany: Springer.
- Strube, Michael & Udo Hahn (1995). PARSETALK about sentence- and text-level anaphora. In *Proceedings of the 7th Conference of the European Chapter of the Association for Computational Linguistics*, Dublin, Ireland, 27–31 March 1995, pp. 237–244.
- Strube, Michael & Udo Hahn (1996). Functional centering. In *Proceedings of the 34th Annual Meeting of the Association for Computational Linguistics*, Santa Cruz, Cal., 24–27 June 1996, pp. 270–277.
- Strube, Michael & Udo Hahn (1999). Functional centering: Grounding referential coherence in information structure. *Computational Linguistics*, 25(3):309–344.
- Strube, Michael & Christoph Müller (2003). A machine learning approach to pronoun resolution in spoken dialogue. In *Proceedings of the 41st Annual Meeting of the Association for Computational Linguistics*, Sapporo, Japan, 7–12 July 2003, pp. 168–175.
- Stuckhardt, Roland (1996). Anaphor resolution and the scope of syntactic constraints. In *Proceedings of the 16th International Conference on Computational Linguistics*, Copenhagen, Denmark, 5–9 August 1996, Vol. 2, pp. 937–942.
- Stuckhardt, Roland (2003). Coreference-based summarization and question answering: A case for high precision anaphor resolution. In *Proceedings of the 2003 International Symposium on Reference Resolution and Its Applications to Question Answering and Summarization*, Venice, Italy, 23–24 June 2003, pp. 33–42.
- Suri, Linda Z. & Kathleen F. McCoy (1994). RAFT/RAPR and centering: A comparison and discussion of problems related to processing complex sentences. *Computational Linguistics*, 20(2):301–317.
- Suri, Linda Z., Kathleen F. McCoy & Jonathan D. DeCristofaro (1999). A methodology for extending focusing frameworks. *Computational Linguistics*, 25(2):173–194.
- Tetreault, Joel R. (2001). A corpus-based evaluation of centering and pronoun resolution. *Computational Linguistics*, 27(4):507–520.
- Turan, Ümit Deniz (1998). Ranking forward-looking centers in Turkish: Universal and language specific properties. In M.A. Walker, A.K. Joshi & E.F. Prince (Eds.), *Centering in Discourse*, pp. 138–160. Oxford, U.K.: Oxford University Press.
- van Deemter, Kees & Rodger Kibble (2000). On coreferring: Coreference in MUC and related annotation schemes. *Computational Linguistics*, 26(4):629–637.
- Versley, Yannick, Simone Paolo Ponzetto, Massimo Poesio, Vladimir Eidelman, Alan Jern, Jason Smith, Xiaofeng Yang & Alessandro Moschitti (2008a). BART: A modular toolkit for coreference resolution. In *Proceedings of the 6th International Conference on Language Resources and Evaluation*, Marrakech, Morocco, 26 May – 1 June 2008.
- Versley, Yannick, Simone Paolo Ponzetto, Massimo Poesio, Vladimir Eidelman, Alan Jern, Jason Smith, Xiaofeng Yang & Alessandro Moschitti (2008b). BART: A modular toolkit for coreference resolution. In *Companion Volume to the Proceedings of the 46th Annual Meeting of the Association for Computational Linguistics*, Columbus, Ohio, 15–20 June 2008, pp. 9–12.
- Vieira, Renata & Massimo Poesio (2000). An empirically-based system for processing definite descriptions. *Computational Linguistics*, 26(4):539–593.
- Vilain, Marc, John Burger, John Aberdeen, Dennis Connolly & Lynette Hirschman (1995). A model-theoretic coreference scoring scheme. In *Proceedings of the 6th Message Understanding Conference (MUC-6)*, pp. 45–52. San Mateo, Cal.: Morgan Kaufmann.
- Walker, Marilyn A. (1989). Evaluating discourse processing algorithms. In *Proceedings of the 27th Annual Meeting of the Association for Computational Linguistics*, Vancouver, B.C., Canada, 26–29 June 1989, pp. 251–261.
- Walker, Marilyn A., Masayo Iida & Sharon Cote (1994). Japanese discourse and the process of centering. *Computational Linguistics*, 20(2):193–233.
- Yang, Xiaofeng & Jian Su (2007). Coreference resolution using semantic relatedness information

- from automatically discovered patterns. In *Proceedings of the 45th Annual Meeting of the Association for Computational Linguistics*, Prague, Czech Republic, 23–30 June 2007, pp. 528–535.
- Yang, Xiaofeng, Jian Su & Chew Lim Tan (2005). Improving pronoun resolution using statistics-based semantic compatibility information. In *Proceedings of the 43rd Annual Meeting of the Association for Computational Linguistics*, Ann Arbor, Mich., 25–30 June 2005, pp. 165–172.
- Yang, Xiaofeng, Jian Su & Chew Lim Tan (2006). Kernel-based pronoun resolution with structured syntactic knowledge. In *Proceedings of the 21st International Conference on Computational Linguistics and 44th Annual Meeting of the Association for Computational Linguistics*, Sydney, Australia, 17–21 July 2006, pp. 41–48.
- Yang, Xiaofeng, Jian Su & Chew Lim Tan (2008). A twin-candidate model for learning-based anaphora resolution. *Computational Linguistics*, 34(3):327–356.
- Yang, Xiaofeng, Guodong Zhou, Jian Su & Chew Lim Tan (2003). Coreference resolution using competition learning approach. In *Proceedings of the 41st Annual Meeting of the Association for Computational Linguistics*, Sapporo, Japan, 7–12 July 2003, pp. 176–183.
- Zelenko, Dmitry, Chinatsu Aone & Jason Tibbets (2004). Coreference resolution for information extraction. In *Proceedings of the ACL Workshop on Reference Resolution and its Applications*, Barcelona, Spain, 25–26 July 2004, pp. 24–31.
- Zhao, Shanpeng & Hwee Tou Ng (2007). Identification and resolution of chinese zero pronouns: A machine learning approach. In *Proceedings of the 2007 Joint Conference on Empirical Methods in Natural Language Processing and Computational Language Learning*, Prague, Czech Republic, 28–30 June 2007, pp. 541–550.
- Zhou, Guodong & Fang Kong (2009). Global learning of noun phrase anaphoricity in coreference resolution via label propagation. In *Proceedings of the 2009 Conference on Empirical Methods in Natural Language Processing*, Singapore, 6–7 August 2009, pp. 978–986.