

Maria Becker

Institute for Computational Linguistics, Heidelberg University (Germany)
DFG Priority Program „Robust Argumentation Machines“
Leibniz ScienceCampus for Empirical Linguistics & Computational Language Modeling

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Education

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| Since 04/2016 | PhD student, Heidelberg University, Department of Computational Linguistics
Topic: Knowledge Acquisition for Argument Analysis: Automatic Reconstruction of Implicit Knowledge in Argumentative Texts .
Supervisors: Prof. Dr. Anette Frank, Dr. Vivi Nastase |
| 10/2012 – 03/2015 | Master in German Linguistics (major) and Philosophy (minor), Heidelberg University, Germany (with distinction) |
| 08/2012 – 01/2015 | Master in Language & Communication (major) and Psychology (minor), University of Mannheim, Germany (with distinction) |
| 10/2008 – 07/2012 | Bachelor in German Philology (major) and Philosophy (major), Heidelberg University, Germany |

Summerschools

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| 09/2017 | Digital Humanities : Distant Reading - Potentials and Applications. Heidelberg, Germany. |
| 08/2017 – 09/2017 | Machine Translation Marathon: Neural Machine Translation. Lisbon, Portugal. |
| 07/2017 | Machine Learning School. Lisbon, Portugal. |
| 09/2016 | Argumentation : Computational and Linguistic Perspectives. Potsdam, Germany. |
| 07/2015 – 08/2015 | Culture & Technology - Digital Humanities , Leipzig, Germany. |

Experience

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| 04/2015 – 03/2016 | Research Assistant (Leibniz Science Campus for Empirical Linguistics & Computational Language Modeling, Institute for German Language Mannheim (IDS)) |
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02/2015 – 12/2018	Project Coordinator (Discourse Lab : Information and research platform for digital discourse analysis, Technical University of Darmstadt)
10/2013 – 01/2015	Student Assistant (Department of German Linguistics /Institute for German Philology, University of Heidelberg)
01/2013 – 12/2014	Student Assistant (Department of Pragmatics/ Institute for German Language Mannheim (IDS), Project: Medical Communication)
07/2010 – 12/2012	Student Assistant (Department of Pragmatics/ Institute for German Language Mannheim (IDS), Project: FOLK (Spoken Language Corpus))

Memberships and Associations

Since 04/2018	Researcher at DFG Priority Program „Robust Argumentation Machines“ (collaboration between ICL Heidelberg and the Artificial Intelligence Group at Mannheim University)
Since 04/2016	Researcher at Leibniz ScienceCampus for Empirical Linguistics & Computational Language Modeling
Since 01/2019	Member of the Advisory Board of the Interdisciplinary Forum of Digital Textual Sciences, Heidelberg
Since 01/2019	Associated Researcher at the Collective Decision-Making Project funded by Heidelberger Akademie der Wissenschaften

Teaching

2015/2016	Undergraduate Seminar [Proseminar]: Grammatik der geschriebenen und gesprochenen Sprache [Grammar of Written and Spoken Language]. Department of German Linguistics, Heidelberg University.
2010 – 2014	Linguistics Tutorial. Department of German Linguistics/Institute for German Philology, University of Heidelberg.

Workshop Organization

10/2017	Discourse Lab Workshop „Corpus tools in comparison“. Heidelberg University.
02/2017	Discourse Lab Workshop “Qualitative and quantitative approaches to textual corpora“. Heidelberg University.

10/2019 *InFoDiTex* Workshop „Interdisciplinary Corpus Contest: Digital Humanities - Disciplines in Competition or Cooperation?“ Heidelberg University.

Panel Discussions

10/2019 Moderation of the Panel Discussion “Digital Humanities - Disciplines in Competition or Cooperation?“ at the Interdisciplinary Corpus Contest, Heidelberg University.

Computer Skills

Languages	Python
Technologies	NLTK, KERAS, STYLO, COSMAS, Gephi, LATEX, InDesignCC
Systems	Linux/UNIX, Windows

Languages

German (native), English (fluent), French (intermediate), Spanish (intermediate), Italian (intermediate), Latin (intermediate)

Research Interests

Knowledge Acquisition, Text Classification, Argumentation Analysis, Deep Learning, Corpus Linguistics, Discourse Analysis, Media Linguistics, Spoken Language, Medical Communication, Information Retrieval, Text Simplification

Volunteer Work

02/2014 – 03/2014	Working in a children's home and in schools in Iriga City, Philippines (Kolping Workcamp)
09/2012 – 03/2015	Mentor at Big Brothers Big Sisters / KinderHelden: Mentoring of children from difficult social conditions

Publications

Papers (conference papers, papers in edited volumes, journal articles)

2019

Ioana Hulpus, Jonathan Kobbe, Maria Becker, Juri Opitz, Christian Meilicke, Heiner Stuckenschmidt, Graeme Hirst, Anette Frank (2019): Towards Explaining Natural Language

Arguments with Background Knowledge. *Workshop on Semantic Explainability (SemEx) 2019, co-located with the 18th International Semantic Web Conference (ISWC 2019)*. Christchurch, New Zealand.

Maria Becker, Michael Staniek, Vivi Nastase, Anette Frank: Assessing the Difficulty of Classifying ConceptNet Relations in a Multi-Label Classification Setting. *RELATIONS - Workshop on meaning relations between phrases and sentences (co-located with IWCS)*. Gothenburg, Sweden

Jonathan Kobbe, Juri Opitz, Maria Becker, Ioana Hulpus, Heiner Stuckenschmidt, Anette Frank (2019): Exploiting Background Knowledge for Argumentative Relation Classification. *Second Biennial Conference on Language, Data and Knowledge (LDK 2019)*, Leipzig, Germany.

Maria Becker, Michael Staniek, Vivi Nastase, Alexis Palmer, Anette Frank: Classifying Semantic Clause Types with Recurrent Neural Networks: Analysis of Attention, Context and Genre Characteristics. *TAL Journal (Traitement Automatique des Langues / Natural Language Processing)*: Special issue Deep Learning for Natural Language Processing.

2018

Becker, M.: Frieden, Freiheit, Sicherheit. Kontextsensitive Bedeutungsanalysen dreier Konzepte in den Bundestagsdebatten von März bis Juli 1983. Analysen mit Python. [Peace, freedom, security. Context-sensitive analysis of three concepts in the Bundestag debates from March to July 1983. Analyzes with Python.] *Discourse Lab Workshop „Corpus tools in comparison“*. Heidelberg. Published on Discourse Lab Blog: <https://dislab.hypotheses.org/> [**Best Presentation Award**]

Stegmeier, J., Schünemann, W., Müller, M., Becker, M., Steiger, S., Stier, S.: Multi-method discourse analysis of twitter communication. A comparison of two global political issues. In: Scholz, R. (ed.): *Quantifying methods in discourse studies*. Basingstoke: Palgrave.

2017

Becker, M., Staniek, M., Nastase, V., Palmer, A., Frank, A.: Classifying Semantic Clause Types: Modeling Context and Genre Characteristics with Recurrent Neural Networks and Attention. **SEM (Joint Conference on Lexical and Computational Semantics)*. Vancouver, Canada.

Becker, M., Staniek, M., Nastase, V., and Frank, A.: Enriching Argumentative Texts with Implicit Knowledge. Frasinca, F., Ittoo, A., Nguyen, L., and Metais, E. (eds.), *Applications of Natural Language to Data Bases (NLDB) - Natural Language Processing and Information Systems, Lecture Notes in Computer Science*, Springer.

Becker, M., Palmer, A., Frank, A.: Semantic Clause Types and Modality as Features for Argument Analysis. *Argument & Computation*. Special Issue on Language and Argumentation.

Becker, M., Spranz-Fogasy, Th.: Ärztliche Beratung und Empfehlungen [Medical advice and recommendations]. In: Pick, I. (ed.): *Beraten ist Sprechen. Eine linguistische Typologie zu Beratungsgesprächen in verschiedenen Handlungsfeldern*. Frankfurt u.a.: Peter Lang.

Becker, M., Müller, M.: Wörter und Dinge. Interdisziplinarität als Modus und Gegenstand der Reflexiven Diskursanalyse [Words and things. Interdisciplinarity as the mode and object of reflexive discourse analysis]. In: Kämper, H., Reisigl, M., Warnke, I., Hess-Lüttich, E. (eds.): Diskurs - semiotisch. Berlin: Akademie.

Müller, M., Becker, M.: Tropen der deutsch-chinesischen Begegnung im kulinarischen Diskurs [Tropes of the German-Chinese encounter in the culinary discourse]. In: Friedemann Vogel / Jia Wenjian (Eds.): Chinesisch-Deutscher Imagereport (CDI). Das Bild Chinas im deutschsprachigen Raum aus kultur-, medien- und sprachwissenschaftlicher Perspektive. Berlin/Boston: De Gruyter, pp. 119-136.

2016

Becker, M., Palmer, A., and Frank, A.: Clause Types and Modality in Argumentative Micro-texts. Workshop on Foundations of the Language of Argumentation (in conjunction with COMMA - Potsdam, Germany), pp. 1-9.

Becker, M., Palmer, A., and Frank, A.: Argumentative texts and clause types. Proceedings of the 3rd Workshop on Argument Mining (ACL Workshop – Berlin, Germany), pp. 21-30.

Spranz-Fogasy, Th., Becker, M.: Beschwerdenexploration und Diagnosemitteilung im ärztlichen Erstgespräch [Symptoms and diagnosis in the initial medical consultation]. In: Busch, A., Spranz-Fogasy, Th. (eds.), Handbuch Sprache und Medizin, Berlin/Boston: de Gruyter, pp. 93-115.

Müller, M., Becker, M.: Wissenskonflikte im Gespräch [Conflicts of Knowledge in Conversation]. In: Luth, J., Vogel, F., Ptashnyk, S. (eds): Linguistische Zugänge zu Konflikten in europäischen Sprachräumen. Berlin/Boston: de Gruyter, pp. 93-112.

Becker, M.: Die Flüchtlingsdebatte in den Medien Deutschlands: Eine korpus- und diskurs-linguistische Untersuchung der Konzeptualisierung von Angst [The refugee debate in the German media: A corpus- and discourse linguistic study of the conceptualization of anxiety]. In: Sprachreport 2/2016, pp. 1-11.

Knuchel, D., Becker, M.: Conceptualisations of HIV/AIDS in two German message boards. A corpus linguistic approach. Symposium Language and Health Online. Typing yourself healthy. Basel, Switzerland.

2015

Burel, S., Becker, M., Kleitsch, L.: Kommunikative Strategien von Unternehmen zwischen Inszenierung und Adressierung [Communicative strategies of companies between staging and addressing]. In: Grucza, S., Kolago, L. (eds), Kommunikationsmanagement in multikulturellen Projektteams. Frankfurt am Main et al.: Peter Lang, pp. 229-245.

2014

Spranz-Fogasy, Th., Becker, M., Menz, F., Nowak, P.: Bibliografie zur Medizinischen Kommunikation [Bibliography on Medical Communication]. In: GAIS (Gesprächsanalytisches Informationssystem).

Books

2015

Becker, M.: Der Asyldiskurs in Deutschland. Eine medienlinguistische Untersuchung von Presstexten, Onlineforen und Polit-Talkshows [Debating about refugees in Germany. A media-linguistic analysis of newspapers, online forums and political talkshows]. Frankfurt et al.: Peter Lang.

Becker, M.: Ärztliche Empfehlungen in Therapieplanungs-gesprächen. Eine gesprächs-analytische Untersuchung [Medical recommendations in therapy planning discussions. A conversation analysis]. Gesprächsforschung Online, Reihe Empirische Kommunikationsforschung im Gesundheitswesen.

Posters

2018

Becker, M., Staniek, M., Nastase, V., Palmer, A., Frank, A.: The Impact of Attention Mechanism, Context and Genre Information when Classifying Semantic Clause Types with Recurrent Neural Networks. 40th Annual Conference of the German Linguistic Society (DGfS). Stuttgart, Germany.

Becker, M., Staniek, M., Nastase, V., Palmer, A., Frank, A.: Automated Classification of Semantic Clauses: Modeling Context and Genre Characteristics with Recurrent Neural Networks and Attention Mechanism. 54. Jahrestagung des Instituts für Deutsche Sprache. Mannheim, Germany.

2017

Becker, M. and Meyer, J.: Quantitative Approaches to Language: A Study on Controversial Concepts in Climate Change Discourse. Summer School of Digital Humanities: Distant Reading - Potentials and Applications. Heidelberg, Germany.

2016

Becker, M.: Argumentative Reasoning, Clause Types and Implicit Knowledge. Proceedings of the Second Summer School on Argumentation: Computational and Linguistic Perspectives, pp 1-2. Potsdam, Germany. **[Best Poster Award]**

Editing

2014. Becker, M., Jacob, K., Luth, J., Schedl, E., and Schnedermann, T.: Diskurszukünfte. Jubiläumszeitschrift des Forschungsnetzwerks "Sprache und Wissen". [The Future of Discourses. Anniversary Journal of the Research Network "Language and Knowledge"]. Heidelberg. (DOI: 10.11588/heidok.00018444).

Blogging

Since 2015. Blogger at Discourse Lab: Information and Research Platform for Discourse Analysis [<https://dislab.hypotheses.org/>]

Invited Talks

2019

Becker, M. (01/2019): "Automated Text Classification". Heidelberg University, German Institute.

2018

Becker, M. (02/2018): Reconstructing Implicit Knowledge in Argumentative Texts. Colloquium "Digital Philology". Technical University of Darmstadt, Institute for Language and Literature.

Becker, M. (10/2018): Detecting Controversial Concepts within Discourses Using Quantitative Methods. Interdisciplinary Forum of Digital Textual Sciences. Keynote talk for the lecture series of winter term 2018/2019. Heidelberg, Germany.

Becker, M. (12/2018): Annotations in Computational Linguistics. Colloquium "Digital Philology". Technical University of Darmstadt, Institute for Language and Literature.

2016

Becker, M. (11/2016): Quantitative Approaches to Language. Colloquium "Discourse Analysis". Heidelberg University, Romanistic Seminar.

Talks (without a paper)

2017

Becker, M., Meyer, J.: Quantitative approaches to linguistic corpora. An exemplary study on agonal centers in the climate change discourse. Discourse Lab Workshop "Qualitative and quantitative approaches to textual corpora", Heidelberg, Germany.

2015

Müller, M., Becker, M.: Establishing identity and alterity in epistemic cultures. 15th conference of DiscourseNet 'Discourses of Culture – Cultures of Discourse'. Belgrade, Serbia.