

Maria Becker

Institute for Computational Linguistics,
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DFG Priority Program „Robust Argumentation Machines“

Leibniz ScienceCampus for Empirical Linguistics &
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Education

- 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, Prof. Dr. Andreas Witt
- 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

Working Experience

- 04/2015 – 03/2016 Research Assistant ([Leibniz Science Campus](#) for Empirical Linguistics & Computational Language Modeling, Institute for German Language Mannheim (IDS))
- 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))

Summerschools

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.

Memberships and Associations

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
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

Teaching

Summer Term 2021	Seminar: Linguistische Gesprächsanalyse [Conversation Analysis]. Department of German Linguistics, Heidelberg University.
Winter Term 2020/21	Seminar: Korpusgrammatik. Erforschung grammatischer Variation mithilfe korpuslinguistischer Methoden [Corpus Grammar. Exploring grammatical variation using corpus linguistic methods]. Department of German Linguistics, Heidelberg University.
Summer Term 2020	Seminar: Zugänge zur Grammatik des Deutschen [Approaches to German Grammar]. Department of German Linguistics, Heidelberg University.
Winter Term 2015/16	Seminar: 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.

Conference and Workshop Organization

- 10/2019 *InFoDiTex* Conference „Digital Humanities - Disciplines in Competition or Cooperation?“ Heidelberg University.
- 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.

Panel Discussions

- 10/2019 Moderation of the Panel Discussion “Digital Humanities - Disciplines in Competition or Cooperation?“ at the *InFoDiTex* Conference, 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, Annotation Studies, 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)

2021

Becker, M., Korfhage, K., and Frank, A. (2021). COCO-EX: A Tool for Linking Concepts from Texts to ConceptNet. In Proceedings of the Conference of the European Chapter of the Association for Computational Linguistics (EACL), Demo Papers, Online.

Becker, M., Korfhage, K., Paul, D., and Frank, A. (2021). CO-NNECT: A Framework for Revealing Commonsense Knowledge Paths as Explications of Implicit Knowledge in Texts. Accepted at: IWCS – International Conference on Computational Semantics.

Becker, M., Liang, S., and Frank, A. (2021). Reconstructing Implicit Knowledge with Language Models. Accepted at: Deep Learning Inside Out (DeeLIO): Workshop on Knowledge Extraction and Integration for Deep Learning Architectures.

2020

Becker, M., Korfhage, K., and Frank, A.: Implicit Knowledge in Argumentative Texts: An Annotated Corpus. In: Proceedings of LREC. Marseille, France.

Paul, D., Opitz, J., Becker, M., Kobbe, J., Hirst, G., and Frank, A.: Argumentative Relation Classification with Background Knowledge. Proceedings of the 8th International Conference on Computational Models of Argument (COMMA 2020).

Becker, M., Hulpus, I., Opitz, J., Paul, D., Kobbe, J., Stuckenschmidt, H., and Frank, A.: Explaining Arguments with Background Knowledge – Towards Knowledge-based Argumentation Analysis. Datenbank-Spektrum, 21

Becker, M., Bender, M., Müller, M.: Classifying Heuristic Textual Practices in Academic Discourse: A Deep Learning Approach to Pragmatics. In: International Journal of Corpus Linguistics (4)2020.

2019

Hulpus, I., Kobbe, J., Becker, M., Opitz, J., Meilicke, C., Stuckenschmidt, H., Hirst, G., Frank, A.: 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.

Becker, M., Staniek, M., Nastase, V., Frank, A.: 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

Kobbe, J., Opitz, J., Becker, M., Hulpus, I., Stuckenschmidt, H., Frank, A.: Exploiting Background Knowledge for Argumentative Relation Classification. Second Biennial Conference on Language, Data and Knowledge (LDK 2019), Leipzig, Germany.

Becker, M., Staniek, M., Nastase, V., Palmer, A., Frank, A.: 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 Microtexts. 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 Pressetexten, 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]**

Invited Talks

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

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.

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

Talks (without a paper)

Bender, M., Becker, M., Müller, M. (03/2020): Pragmalinguistische Annotation und Deep Learning. Jahrestagung der Arbeitsgemeinschaft Linguistische Pragmatik: "Digitale Pragmatik". Hamburg, Germany.

Becker, M., Meyer, J. (10/2017): 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.

Müller, M., Becker, M. (03/2015): Establishing identity and alterity in epistemic cultures. 15th conference of DiscourseNet 'Discourses of Culture – Cultures of Discourse'. Belgrade, Serbia.

Editing

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] (2014). Heidelberg. (DOI: 10.11588/heidok.00018444).

Blogging

Since 02/2015: Blogger at Discourse Lab – Information and Research Platform for Discourse Analysis [<https://dislab.hypotheses.org/>]