

Marc Schulder

Education

- 2013 – present **Doctoral Studies: Computational Linguistics**, *Saarland University*.
Principal Investigator: Prof. Dietrich Klakow
Research Group: Language and Signal Processing (LSV)
Dissertation Topic: Data-driven phrase-based Sentiment Analysis.
- 2011 – 2013 **Master of Science: Language Science and Technology**, *Saarland University*.
Grade: 1.3 (very good, approx. A)
Thesis: *Metaphor Detection through Term Frequency*
Abstract: We detect metaphors based on how out-of-topic they are in a given text. To this end, we use a term relevance measure based on a domain-agnostic web corpus and a small in-domain corpus. It requires no knowledge of the metaphors' non-literal source domains, drastically reducing the need for high quality data.
- 2009 – 2010 **Erasmus Student Exchange**, *University of Edinburgh*.
- 2007 – 2011 **Bachelor of Science: Computational Linguistics**, *Saarland University*.
Grade: 1.7 (good, approx. A-)
Thesis: *Investigations on State Space Clustering in Reinforcement Learning*
Abstract: We improve reinforcement learning algorithms by combining similar environmental states through the use of clustering.

Additional Education

- Aug 2015 **European Summer School in Logic, Language and Information (ESSLLI)**, *Universitat Pompeu Fabra, Barcelona*.
- July 2014 **Lisbon Machine Learning School (LxMLS)**, *Instituto Superior Técnico, Lisbon*.

Experience

Vocational

- 2016 **SWE Intern**, *Google Switzerland, Zürich*.
Tasks: Sentiment Analysis and Linguistic Processing for Privacy Infrastructure team.
Doctoral Researcher, *Language and Signal Processing (LSV)*, Saarland University.
- 2015 – present **Project:** Resource- and data-intensive methods for robust fine-grained sentiment analysis.
Tasks: Data-driven Sentiment Analysis on the phrase level, focus on polarity shifting.
- 2013 – 2015 **Project:** AcListant (www.aclistant.de)
Tasks: Grammar Design, FST-based Labeling Techniques, Annotation Tool Development, Language Modelling and Information Processing in ASR.
- 2012 **Visiting Researcher**, *Information Sciences Institute, USC*, Los Angeles.
Tasks: Metaphor Detection in the Governance Domain.

- 2010 – 2012 **Student research assistant**, *German Research Center for AI (DFKI)*, Saarbrücken.
Project: THESEUS, www.theseus-programm.de
Tasks: Development in Java, Ontology Processing.
- 2008 – 2009 **Project:** AMIDA, www.amiproject.org
Tasks: Development in Java, Natural Language Generation.

Teaching

- Winter 2015 **Introduction to Python Programming**, *Lecture*.
Co-taught with Stefan Thater
- Summer 2015 **Opinion Holder and Target Extraction for German**, *Software Project*.
Co-taught with Michael Wiegand
- Winter 2014 **Sentiment Analysis**, *Bachelor Seminar*.
Co-taught with Michael Wiegand

Miscellaneous

- 2013 – present **CL Bachelorpool**, *Saarland University*.
Outreach events to inform the public about computational linguistics.
Girl's Day: Introducing girls aged 10–16 to STEM subjects.
UniCamp: 5-day event for girls aged 12–15 comprised of half-day STEM workshops.
Open House: Presentations and demonstrations for the general public.
- 2008 – 2012 **CL Student Council (Fachschaftratsrat)**, *Saarland University*.
Introductory events and mentoring for new students, organization of departmental social activities, student-lecturer mediation and acquisitions for the student body.

Awards

- 2012 **UdS-Mobil/PROMOS research stipend**, *German Academic Exchange Service (DAAD)*.
- 2009 **ERASMUS exchange stipend**, *European Union*.

Fields of interest

- Sentiment Analysis
- Applied Machine Learning
- Natural Language Understanding

Computer skills

- Excellent **Java, Python**
- Good Bash, PHP, MySQL
- Markup Languages LaTeX, HTML, XML

Languages

- Native **German**
- Fluent (C1) **English**
- Basic German Sign Language, Latin

Publications

M. Schulder, M. Wiegand, J. Ruppenhofer, and S. Köser, "Introducing a Lexicon of Verbal Polarity Shifters for English," in *Proceedings of the Language Resources and Evaluation Conference (LREC)*, (Miyazaki, Japan), 2018.

M. Schulder, M. Wiegand, J. Ruppenhofer, and B. Roth, "Towards Bootstrapping a Polarity Shifter Lexicon using Linguistic Features," in *Proceedings of the International Joint Conference on Natural Language Processing (IJCNLP)*, (Taipei, Taiwan), 2017.

H. Helmke, Y. Oualil, and **M. Schulder**, "Quantifying the Benefits of Speech Recognition for an Air Traffic Management Application," in *Proceedings of the Conference on Electronic Speech Signal Processing (ESSV)*, (Saarbrücken, Germany), 2017.

M. Wiegand, **M. Schulder**, and J. Ruppenhofer, "Separating Actor-View from Speaker-View Opinion Expressions using Linguistic Features," in *Proceedings of the Human Language Technology Conference of the North American Chapter of the ACL (HLT/NAACL)*, (San Diego, CA, USA), 2016.

M. Wiegand, **M. Schulder**, and J. Ruppenhofer, "Opinion Holder and Target Extraction for Verb-based Opinion Predicates – The Problem is Not Solved," in *Proceedings of the Workshop on Computational Approaches to Subjectivity and Sentiment Analysis (WASSA@EMNLP)*, (Lisboa, Portugal), 2015.

Y. Oualil, **M. Schulder**, H. Helmke, A. Schmidt, and D. Klakow, "Real-Time Integration of Dynamic Context Information for Improving Automatic Speech Recognition," in *Proceedings of the Conference of the International Speech Communication Association (INTERSPEECH)*, (Dresden, Germany), 2015.

H. Helmke, Y. Oualil, J. Rataj, T. Mühlhausen, O. Ohneiser, H. Ehr, M. Kleinert, and **M. Schulder**, "Assistant-Based Speech Recognition for ATM Applications," in *Proceedings of the USA/Europe Air Traffic Management Research and Development Seminar (ATM)*, (Lisbon, Portugal), 2015.

A. Schmidt, Y. Oualil, O. Ohneiser, M. Kleinert, **M. Schulder**, A. Khan, H. Helmke, and D. Klakow, "Context-Based Recognition Network Adaptation for Improving On-Line ASR in Air Traffic Control," in *Proceedings of the Spoken Language Technology Workshop (SLT@IEEE)*, (South Lake Tahoe, CA, USA), 2014.

M. Schulder and E. Hovy, "Metaphor Detection through Term Frequency," in *Proceedings of the Workshop in Natural Language Processing (Meta4NLP@ACL)*, (Baltimore, MD, USA), 2014.

O. Ohneiser, H. Helmke, H. Ehr, H. Gürlük, M. Hössl, M. Kleinert, T. Mühlhausen, M. Uebbing-Rumke, Y. Oualil, **M. Schulder**, A. Schmidt, A. Khan, and D. Klakow, "Air Traffic Controller Support by Speech Recognition," in *Proceedings of the International Conference on Applied Human Factors and Ergonomics (AHFE)*, (Krakow, Poland), 2014.

R. Littauer, A. Scheidel, **M. Schulder**, and S. Ciddi, "Crowd Sourcing the Classroom: Interactive Applications in Higher Learning," in *Proceedings of the International Conference of Education, Research and Innovation (ICERI)*, (Madrid, Spain), 2012.