Dirk Weissenborn

Curriculum Vitae

Professional Experience

2017 **Research Intern**, *DeepMind*, London.
- integration of common-sense and background knowledge into neural natural language understanding systems

since 2014 **Research Scientist**, *German Research Center for Artificial Intelligence*, Berlin.
- basic research on machine- & deep-learning for NLP
- project&development lead for project on neural information extraction with industry partner SAP funded by the Software Campus program
- research in various information extraction projects (entity linking, biomedical concept recognition, question answering)

2013–2014 **Student Assistent**, *Bioinformatics Group, BIOTEC, TU Dresden*, Dresden.
- research on relation discovery and question answering in the biomedical domain
- co-organization of first round of BioASQ challenge on biomedical question answering

2013 **Mentor for Google Summer of Code**, *Open Source Project DBpedia Spotlight*.

2012 **Student of Google Summer of Code**, *Open Source Project DBpedia Spotlight*.
- topical classification on Wikipedia

2011-2012 **Software Developer**, *T-Systems Multimedia Solutions*, Dresden.
- development of a recommender system for social network
- build management in software project

2008-2010 **Software Developer**, *AvatR*, Dresden.
- development of recommender system of personal agent for webservices

Education

since 2014 **PhD Student**, *German Research Center for Artificial Intelligence*, Berlin.
- deep learning architectures for NLP with special focus on information extraction and question answering
- integration of background knowledge in neural NLU

2008–2014 **Diplom Informatik (equivalent M.Sc. Computer Science)**, *Technische Universität Dresden*, Dresden, 1.1 (with distinction, equivalent to first-class honors).
- *Specialization:* Intelligent Systems
- *Minor:* Mathematics

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Diploma thesis

Title	*Relation Discovery between Indirectly Connected Biomedical Concepts*
Supervisors	Dr. Georgios Tsatsaronis, Prof. Michael Schroeder
Description	In this thesis a novel approach for relation discovery in the biomedical domain is introduced. The approach is based on the combination of information extracted from structured and unstructured data, represented by a graph. The constructed graph allows for the easy integration of heterogeneous information and discovery of indirect connections between biomedical concepts using machine learning to identify characteristic graph path patterns.

Teaching

2017 **Supervision of Master Thesis**.
Neural Domain Adaptation for Biomedical Question Answering

2016 **Supervision of Master Thesis**.
Clozing the Gap: Knowledge Base Population by Answering Cloze Queries

Awards

2012 **Scholarship of Germany ("Deutschlandstipendium")**.

2010–2011 **DAAD Scholarship**.
Scholarship for an exchange year abroad in Brazil

Software

GitHub	`https://github.com/dirkweissenborn`
Jack-the-Reader	Open-source framework neural machine reading. Main developer. `https://github.com/uclmr/jack`
MOOD	Open-source tool for joint entity linking and word sense disambiguation. Creator. `https://bitbucket.org/dfki-lt-re-group/mood`
DBpedia Spotlight	Open source tool for entity linking. Active member (2012 to 2013). `https://github.com/dbpedia-spotlight/dbpedia-spotlight`

Technical Skills

Programming Languages *in descending order of proficiency*
Python, Scala, Lua, Java, C++, C

Deep Learning Libraries
TensorFlow, PyTorch

NLP Libraries
Spacy, FactorIE, NLTK, StanfordNLP

Languages

German **Mother tongue**

English **Fluent**

Spanish **Fluent**
Portuguese **Fluent**

References

Chris Dyer
DeepMind
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Hans Uszkoreit
DFKI GmbH, Language Technology Lab
e-mail: hansu@dfki.de

Michael Schroeder
BIOTEC, TU Dresden
email: ms@biotec.tu-dresden.de

Publications

[1] **Dirk Weissenborn**, Tomas Kocisky, and Chris Dyer. "Dynamic Integration of Background Knowledge in Neural NLU Systems". In: *arXiv preprint arXiv:1706.02596* (2017).

[2] **Dirk Weissenborn**, Georg Wiese, and Laura Seiffe. "Making Neural QA as Simple as Possible but not Simpler". In: *CoNLL*. 2017.

[3] Georg Wiese, **Dirk Weissenborn**, and Mariana Neves. "Neural Domain Adaptation for Biomedical Question Answering". In: *CoNLL*. 2017.

[4] Sebastian Krause, Feiyu Xu, Hans Uszkoreit, and **Dirk Weissenborn**. "Event Linking with Sentential Features from Convolutional Neural Networks". In: *CoNLL*. 2016.

[5] **Dirk Weissenborn**. "Neural associative memory for dual-sequence modeling". In: *RepL4NLP* (2016).

[6] **Dirk Weissenborn**. "Separating Answers from Queries for Neural Reading Comprehension". In: *arXiv preprint arXiv:1607.03316* (2016).

[7] **Dirk Weissenborn** and Tim Rocktäschel. "MuFuRU: The Multi-Function Recurrent Unit". In: *arXiv preprint arXiv:1606.03002* (2016).

[8] **Dirk Weissenborn**, Michael Schroeder, and George Tsatsaronis. "Discovering Relations between Indirectly Connected Biomedical Concepts". In: *Journal of Biomedical Semantics* (to appear in 2015).

[9] **Dirk Weissenborn**, Feiyu Xu, and Hans Uszkoreit. "DFKI: Multi-objective Optimization for the Joint Disambiguation of Entities and Nouns & Deep Verb Sense Disambiguation". In: *SemEval*. 2015.

[10] **Dirk Weissenborn**, Leonhard Hennig, Feiyu Xu, and Hans Uszkoreit. "Multi-Objective Optimization for the Joint Disambiguation of Nouns and Named Entities". In: *ACL*. 2015.

[11] George Tsatsaronis, Georgios Balikas, Prodromos Malakasiotis, Ioannis Partalas, Matthias Zschunke, Michael R Alvers, **Dirk Weissenborn**, Anastasia Krithara, Sergios Petridis, Dimitris Polychronopoulos, et al. "An overview of the BIOASQ large-scale biomedical semantic indexing and question answering competition". In: *BMC bioinformatics* 16.1 (2015), p. 138.

[12] **Dirk Weissenborn**, Michael Schroeder, and George Tsatsaronis. "Discovering Relations between Indirectly Connected Biomedical Concepts". In: *Data Integration in the Life Sciences*. 2014, pp. 112–119.

[13] Pablo N Mendes, **Dirk Weissenborn**, and Chris Hokamp. "DBpedia Spotlight at the MSM2013 Challenge". In: *Making Sense of Microposts (# MSM2013)* (2013).

[14] **Dirk Weissenborn**, George Tsatsaronis, and Michael Schroeder. "Answering Factoid Questions in the Biomedical Domain." In: *BioASQ@ CLEF* 1094 (2013).