Kumar Shridhar

kumar-shridhar.github.io • shridhar.stark@gmail.com • +49 176 77659867
Kurt-Schumacher Strasse 16, Kaiserslautern, Germany 67663

Experience

- **BOTSUPPLY** **Copenhagen, Denmark**
  Chief AI Scientist *12/2016 – Present*
  - Developed a Natural Language Processing Framework [1] from scratch in 40+ languages that powers all the customers chatbots at BotSupply[2].
  - Created and trained models for Intent classification, Entity recognition, Sentiment Analysis, Language Translation, POS tagging that are in par with state-of-the-art models.
  - Designed architectures for handling imbalanced datasets, for improving performance with continuous learning over feedback and for automated selection of the best threshold.
  - Gathered data and feedbacks from real users, crowd-sourced annotations, worked with linguists and designers to improve the whole conversational flow in chatbots.
  - My current work focuses on learning representations from unsupervised datasets that generalizes well to any tasks when fine tuned upon.
- **INSIDERS TECHNOLOGIES** **Kaiserslautern, Germany**
  Research Assistant *01/2018 – 09/2018*
  - Worked in the Ovation Machine Learning Team of Insiders that handles huge amounts of data, reads and understands their content, handles queries or interacts with end users through Conversational Intelligent Bots.
  - My work involved finding the most suitable and accurate model based on the client dataset and to improve the model performance on scarce datasets.
  - Project was awarded Digital Thought Leadership award in leading contest of German insurance industry by leading German newspaper *Süddeutsche Zeitung* and Google[3] and covered by *Süddeutsche Zeitung*[4].
- **Microsoft** **Dublin, Ireland**
  Linguistic Engineering Intern, XBox *02/2015 – 06/2015*
  - Contributed to developing an ML system for analyzing linguistic complexity of strings in C# for localization prioritization during testing; performed feature analysis and framed problem as anomaly detection.
  - Created proof of concept and implemented morphology-based terminology validation algorithm.
  - Evangelized customer sentiment analysis efforts, drove cross-team collaboration, and provided insights to stakeholders.
- **The OpenCog Foundation** opencog.org
  Google Summer of Code Intern *Summer 2014*
  - Implemented deductive reasoning algorithms to enable a model to make common-sense inferences, e.g. *All men are mortal. Socrates is a man.* $\rightarrow$ *Socrates is mortal.*
  - Applied inference using probabilistic logic networks on the output of a relationship extractor.
  - Documented and extended Python code for temporal inference.
- **Lingenio GmbH** **Heidelberg, Germany**
  Software Engineering Intern *Spring 2014*
  - Created a converter from TBX to Lingenio native format and vice versa.
  - Integrated TBX term bases in Dictionary Server; created localized web service using Jinja2, Flask-Babel, and lighttpd.
- **SAP** **Walldorf, Germany**
  Working Student, Development University *02/2013 – 02/2014*
  - Created content for internal programming and Design Thinking courses.

[1] https://www.botsupply.ai/natural-language-processing
[2] https://www.botsupply.ai/
[3] https://www.sv-veranstaltungen.de/site/fachbereiche/versicherungs-leuchtturm
[4] http://www.sueddeutsche.de/wirtschaft/kuenstliche-intelligenz-aerger-fuer-watson-1.2772927

  - Automated reporting processes, e.g. reduced expenditure of work for monthly training report from 8 hours to 2 hours using Excel / VBA scripts.

- **TEMIS** **Heidelberg, Germany**
  Freelancing Developer *02/2013 – 10/2013*
  - Created a cosine metric-based word sense disambiguation system leveraging text extracted from Wikipedia and DBpedia dumps; achieved performance comparable to the state-of-the-art.

Education

- **National University of Ireland** **Galway, Ireland**
  College of Engineering and Informatics, Ph.D. Natural Language Processing *10/2015 – Present*
  - My main research interests are transfer learning, multi-task learning, domain adaptation, and cross-lingual learning for Natural Language Processing.
- **University of Copenhagen** **Copenhagen, Denmark**
  Natural Language Processing Group, Department of Computer Science *04/2017 – 06/2017*
  - Research visit invited by Anders Søgaard.
  - Created a new model for multi-task learning that learns which parts of the model to share.
- **Ruprecht-Karls-Universität Heidelberg** **Heidelberg, Germany**
  Institute of Computational Linguistics, B.A. Computational Linguistics, English Linguistics *10/2012 – 09/2015*
  - Final grade: 1.0 (German scale), i.e. GPA 4.0; thesis: *Construction and Analysis of an Emotion Proposition Store*
- **Trinity College** **Dublin, Ireland**
  School of Computer Science and Statistics, Computer Science and Language *09/2014 – 01/2015*
  - Semester abroad
  - relevant courses: AI, Fuzzy Logic, High-Tech Entrepreneurship

Certificates and awards

- Google Developer Expert – Machine Learning *12/2017 – Present*
- Scholarship of the Irish Research Council *10/2015 – Present*
- Scholarship of the *Cusanuswerk*, one of the 13 German sponsorship organizations *04/2014 – 09/2015*
- Microsoft Certified Professional (Programming in C#) *06/2015*
- Best Delegate award in various Model United Nations conferences *11/2012 – 01/2014*
- Second and third prizes *Bundeswettbewerb Fremdsprachen*, national foreign languages competition *2007 – 2008*
- First and second prizes *Landeswettbewerb Mathematik*, state mathematics competition *2006 – 2008*

Languages and Technologies

Programming Languages: Python, Java, C#, R, C, LaTeX, Prolog, JavaScript, SPARQL
Technologies: SciPy, NumPy, Keras, TensorFlow, DyNet, scikit-learn, NLTK, CoreNLP, MALLET, Weka, UNIX, Git
Natural Languages: Fluent in German and English, advanced in French and Spanish, beginner in Portuguese and Latin
Open Source Contributions: The OpenCog Foundation

Other activities

- **Natural Language Processing Dublin organizer** *08/2016 – Present*
  - Organized 10 events. Meetup[5] has 600+ members and connects students, researchers, and industry professionals.

[5] https://www.meetup.com/NLP-Dublin/

Publications

1. **Sebastian Ruder**, Barbara Plank (2018). Strong Baselines for Neural Semi-supervised Learning under Domain Shift. In *Proceedings of ACL 2018*, Melbourne, Australia.
2. Jeremy Howard*, **Sebastian Ruder*** (2018). Universal Language Model Fine-tuning for Text Classification. In *Proceedings of ACL 2018*, Melbourne, Australia.
3. Anders Søgaard, **Sebastian Ruder**, Ivan Vulić (2018). On the Limitations of Unsupervised Bilingual Dictionary Induction. In *Proceedings of ACL 2018*, Melbourne, Australia.
4. **Sebastian Ruder**, John Glover, Afshin Mehrabani, Parsa Ghaffari (2018). 360° Stance Detection. In *Proceedings of NAACL-HLT 2018: System Demonstrations*, New Orleans, US.
5. **Sebastian Ruder**, Ivan Vulić, Anders Søgaard (2018). A Survey Of Cross-lingual Word Embedding Models. *Journal of Artificial Intelligence Research*.
6. Isabelle Augenstein*, **Sebastian Ruder***, Anders Søgaard (2018). Multi-task Learning of Pairwise Sequence Classification Tasks Over Disparate Label Spaces. In *Proceedings of NAACL-HLT 2018*, New Orleans, US.
7. **Sebastian Ruder**, Barbara Plank (2017). Learning to select data for transfer learning with Bayesian Optimization. In *Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing*, Copenhagen, Denmark.
8. **Sebastian Ruder** (2017). An Overview of Multi-Task Learning in Deep Neural Networks. arXiv preprint arXiv:1706.05098.
9. **Sebastian Ruder**, Joachim Bingel, Isabelle Augenstein, Anders Søgaard (2017). Learning what to share between loosely related tasks. arXiv preprint arXiv:1705.08142.
10. **Sebastian Ruder**, Parsa Ghaffari, John G. Breslin (2017). Data Selection Strategies for Multi-Domain Sentiment Analysis. arXiv preprint arXiv:1702.02426.
11. **Sebastian Ruder**, Parsa Ghaffari, John G. Breslin (2017). Knowledge Adaptation: Teaching to Adapt. arXiv preprint arXiv:1702.02052.
12. **Sebastian Ruder**, Parsa Ghaffari, John G. Breslin (2016). Towards a continuous modeling of natural language domains. In *Proceedings of EMNLP 2016 Workshop on Uphill Battles in Language Processing: Scaling Early Achievements to Robust Methods*, pages 53-57, Austin, Texas, US.
13. **Sebastian Ruder**, Parsa Ghaffari, John G. Breslin (2016). A Hierarchical Model of Reviews for Aspect-based Sentiment Analysis. In *Proceedings of the 2016 Conference on Empirical Methods in Natural Language Processing*, pages 999–1005, Austin, Texas, US.
14. Ian D. Wood and **Sebastian Ruder** (2016). Emoji as emotion tags for tweets. In *Emotion and Sentiment Analysis Workshop, LREC*, Portorož, Slovenia.
15. **Sebastian Ruder**, Peiman Barnaghi, John G. Breslin (2016). Analysis and Applications of a Novel Corpus of Influencers on Twitter. In *Twitter for Research Conference*, Galway, Ireland.
16. **Sebastian Ruder**, Parsa Ghaffari, John G. Breslin (2016). INSIGHT-1 at SemEval-2016 Task 4: Convolutional Neural Networks for Sentiment Classification and Quantification. In *Proceedings of the 10th International Workshop on Semantic Evaluation (SemEval 2016)*, San Diego, US.
17. **Sebastian Ruder**, Parsa Ghaffari, John G. Breslin (2016). INSIGHT-1 at SemEval-2016 Task 5: Convolutional Neural Networks for Multilingual Aspect-based Sentiment Analysis. In *Proceedings of the 10th International Workshop on Semantic Evaluation (SemEval 2016)*, San Diego, US.
18. **Sebastian Ruder** (2016). An overview of gradient descent optimization algorithms. arXiv preprint arXiv:1609.04747.

Services to the community

- **Reviewer for journals:** Transactions on Audio, Speech and Language Processing; Artificial Intelligence; IEEE Computational Intelligence Magazine
- **Reviewer for workshops:** RELNLP 2018, DeepLo 2018, SemEval-2016 Task 5
- **Reviewer for conferences:** ACL 2018, EMNLP 2018, CoNLL 2018

*Equal contribution.

Talks

- Insight@DCU Deep Learning Workshop Keynote, May 2018: Successes and Frontiers of Deep Learning[6]
- Dublin Institute for Technology Computational Intelligence Course Guest Lecture, November 2017: Optimization for Deep Learning[7]
- Natural Language Processing Copenhagen Meetup Talk, May 2017: Transfer Learning for NLP[8]
- Accenture Tech Talk, March 2017: Transfer Learning – The Next Frontier for Machine Learning
- LinkedIn Tech Talk, March 2017: Transfer Learning – The Next Frontier for Machine Learning[9]
- NLP Dublin meetup, December 2016: NIPS 2016 Highlights[10]
- INSIGHT SIG NLP meetup, August 2016: A Hierarchical Model of Reviews for Aspect-based Sentiment Analysis[11]
- NLP Dublin meetup, August 2016: Softmax Approximations for Learning Word Embeddings and Language Modelling[12]

[6] https://www.slideshare.net/SebastianRuder/successes-and-frontiers-of-deep-learning
[7] https://www.slideshare.net/SebastianRuder/optimization-for-deep-learning
[8] https://www.slideshare.net/SebastianRuder/transfer-learning-for-natural-language-processing
[9] https://www.slideshare.net/SebastianRuder/transfer-learning-the-next-frontier-for-machine-learning
[10] http://www.slideshare.net/SebastianRuder/nips-2016-highlights-sebastian-ruder
[11] http://www.slideshare.net/SebastianRuder/a-hierarchical-model-of-reviews-for-aspectbased-sentiment-analysis
[12] http://www.slideshare.net/SebastianRuder/softmax-approximations-for-learning-word-embeddings-and-language-modeling-sebastian-ru