Radina Dobreva

PhD student in Natural Language Processing

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Research interests: language production, event description, pragmatics

Education

PhD in Natural Language Processing   *September 2020 - Present*

University of Edinburgh

- Supervisors: Dr Alexandra Birch, Prof Frank Keller and Dr Annie Holtz
- My research is in language production and linguistic cognition, focusing on event descriptions. I have experience with gathering and preparing language data, frequentist and Bayesian statistical analysis and project management.
- I also have experience working with LLMs, language grounding in vision, interpretability of NLP models and machine translation.
- Member of the *Centre for Doctoral Training in Natural Language Processing* and the *Institute for Language, Cognition and Computation*.

MSc Speech and Language Processing, with Distinction   *September 2018 - August 2019*

University of Edinburgh

- A programme combining computer science, machine learning and linguistics.
- MSc Project: Exploiting Predictable Document Sub-structure in Neural Machine Translation (NMT)
  - Supervisors: Dr Rachel Bawden, Prof Bonnie Webber, Dr Annie Louis
  - A project focusing on using the structure of documents to improve translation. As part of this project I compiled a corpus of parallel data, researched possible ways to incorporate structural information, implemented the selected method, conducted experiments to evaluate the proposed models, and analysed and reported the results.

BA(Hons) Linguistics, First class degree   *September 2015 - June 2018*

University of Manchester

- A broad programme covering both theoretical and applied aspects of linguistics, such as semantics, syntax, historical linguistics and forensic linguistics, among others.
- Undergraduate dissertation: The Causative Alternation in Bulgarian
  - Supervisor: Prof Delia Bentley
- Study abroad: *National University of Singapore*, January 2017 - May 2017

Employment

Teaching Support Provider   *January 2021 - Present*

University of Edinburgh

- I have occupied teaching support roles in a variety of courses, including Computer Programming for Speech and Language Processing, Doing Research in Natural Language Processing, Accelerated Natural Language Processing, Natural Language Understanding, Generation and Machine Translation
- I have experience as a tutor (teaching computer labs), teaching assistant (assisting with coursework planning) and marker (for coursework and exams)

Research Software Engineer   *April 2020 - August 2020*

University of Edinburgh

- Worked on projects focusing on machine translation.
- Responsibilities included building machine translation models using Marian NMT and packaging them for use by the project partners.

Research Assistant *October 2019 - March 2020*
University of Edinburgh
- Worked on a project focusing on low-resource machine translation in the news domain (GoURMET).
- Responsibilities included gathering parallel data for machine translation, creating machine translation models and packaging them for use by the project partners.

Skills

Programming languages	Python, Bash, R, HTML, CSS
Tools and packages	RStudio, jsPsych, spaCy, PyTorch, Numpy, NLTK, Git, Latex, Docker
Natural languages	English (fluent), Bulgarian (native)

Awards and achievements

The School of Philosophy, Psychology and Language Sciences Highly Commended Dissertation Award, for my dissertation submitted for the MSc Speech and Language Processing degree — *University of Edinburgh* — *2019*

Outstanding Academic Achievement Award, awarded to the top 0.5% undergraduate students graduating from the university — *University of Manchester* — *2018*

Montfollick prize, for highest final year mark in the subject area of Linguistics and English Language in academic year 2017/18 — *University of Manchester* — *2018*

Stella Brook Prize, for highest mark in first-year exams — *University of Manchester* — *2016*

Bronze medal, 13th International Olympiad in Linguistics 2015 — *Blagoevgrad, Bulgaria* — *2015*

Additional training

11th Lisbon Machine Learning School – LxMLS 2021, summer school — *Lisbon, Portugal (Online)* — *2021*

Publications

Radina Dobreva, Frank Keller, and Alexandra Birch. Effects of context on the use of descriptive verbs. In *Proceedings of the Annual Meeting of the Cognitive Science Society*, volume 46 of *Proceedings of the Annual Meeting of the Cognitive Science Society*, pages 4174–4180. Cognitive Science Society, July 2024

Radina Dobreva and Frank Keller. Investigating negation in pre-trained vision-and-language models. In *Proceedings of the Fourth BlackboxNLP Workshop on Analyzing and Interpreting Neural Networks for NLP*, pages 350–362, Punta Cana, Dominican Republic, November 2021. Association for Computational Linguistics

Ulrich Germann, Roman Grundkiewicz, Martin Popel, **Radina Dobreva**, Nikolay Bogoychev, and Kenneth Heafield. Speed-optimized, Compact Student Models that Distill Knowledge from a Larger Teacher Model: the UEDIN-CUNI Submission to the WMT 2020 News Translation Task. In *Proceedings of the Fifth Conference on Machine Translation*, pages 191–196, Online, November 2020. Association for Computational Linguistics

Rachel Bawden, Alexandra Birch, **Radina Dobreva**, Arturo Oncevay, Antonio Valerio Miceli Barone, and Philip Williams. The University of Edinburgh's English-Tamil and English-Inuktitut submissions to the WMT20 news translation task. In *Proceedings of the Fifth Conference on Machine Translation*, pages 92–99, Online, November 2020. Association for Computational Linguistics

Radina Dobreva, Jie Zhou, and Rachel Bawden. Document Sub-structure in Neural Machine Translation. In *Proceedings of the 12th Language Resources and Evaluation Conference*, pages 3657–3667, Marseille, France, May 2020. European Language Resources Association