

MILOŠ STANOJEVIĆ

SENIOR RESEARCH SCIENTIST AT GOOGLE DEEPMIND

RESEARCH INTERESTS

- Natural Language Processing (MT and Parsing)
- Structured Prediction
- Deep Learning
- Formal Syntax and Semantics
- Unsupervised Learning

WORK EXPERIENCE

- Nov 2021 – now **Senior Research Scientist**
Google DeepMind
Language Team, London, UK
- Nov 2017 –
Oct 2021 **Research Associate**
University of Edinburgh
with Prof. Mark Steedman
School of Informatics, Edinburgh, UK
- July 2017 –
Oct 2017 **Internship**
Nuance Communications (now part of Microsoft)
with Prof. Edward Stabler
Natural Language and AI group, Sunnyvale, US

EDUCATION

- 2013 – 2017 **Ph.D. Natural Language Processing**
University of Amsterdam, Netherlands
topic: Permutation Forests for Modeling Word Order in MT
supervised by Prof. Khalil Sima'an and Dr. Wilker Aziz
- 2011 – 2013 **Mgr. Mathematical Linguistics**
Charles University in Prague, Czech Republic
- 2010 – 2011 **M.Sc. Human Language Science and Technology**
University of Malta, Malta
- 2006 – 2010 **B.Sc. Electrical Engineering**
University of Niš, Serbia
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- arXiv 2022** [**Transformer Grammars: Augmenting Transformer Language Models with Syntactic Inductive Biases at Scale**](#)
Conference on Empirical Methods in Natural Language Processing
Laurent Sartran, Samuel Barrett, Adhiguna Kuncoro,
Miloš Stanojević, Phil Blunsom, Chris Dyer
- EMNLP 2021** [**A Root of a Problem: Optimizing Single-Root Dependency Parsing**](#)
Conference on Empirical Methods in Natural Language Processing
Miloš Stanojević and Shay B. Cohen
- CL journal 2021** [**Formal Basis of a Language Universal**](#)
Computational Linguistics Journal
Miloš Stanojević and Mark Steedman
- IWCS 2021** [**Computing All Quantifier Scopes with CCG**](#)
International Conference on Computational Semantics
Miloš Stanojević and Mark Steedman
- CMCL 2021** [**Modeling incremental language comprehension in the brain with Combinatory Categorical Grammar**](#)
Workshop on Cognitive Modeling and Computational Linguistics
Miloš Stanojević, Shohini Bhattachali, Donald Dunagan, Luca Campanelli,
Mark Steedman, Jonathan Brennan, John Hale
- CASE 2021** [**Modality and Negation in Event Extraction**](#)
Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text
Sander Bijl de Vroe, Liane Guillou, **Miloš Stanojević**, Nick McKenna and Mark Steedman
- ACL 2020** [**Max-Margin Incremental CCG Parsing**](#)
Annual Meeting of the Association for Computational Linguistics
Miloš Stanojević and Mark Steedman
- IWPT 2020** [**Span-Based LCFRS-2 Parsing**](#)
The 16th International Conference on Parsing Technologies
Miloš Stanojević and Mark Steedman
- CUNY 2020** [**Predictive Processing of Coordination in CCG**](#)
CUNY Human Sentence Processing Conference
Miloš Stanojević, John Hale and Mark Steedman
- ACL 2019** [**Wide-Coverage Neural A* Parsing for Minimalist Grammars**](#)
Annual Meeting of the Association for Computational Linguistics
John Torr, **Miloš Stanojević**, Mark Steedman and Shay B. Cohen

- FG 2019** [On the Computational Complexity of Head Movement and Affix Hopping](#)
Conference on Formal Grammar
Miloš Stanojević
- NAACL 2019** [CCG Parsing Algorithm with Incremental Tree Rotation](#)
Conference of the North American Chapter of the Association for Computational Linguistics
Miloš Stanojević and Mark Steedman
- CMCL 2019** [The active-filler strategy in a move-eager left-corner Minimalist Grammar parser](#)
Workshop on Cognitive Modeling and Computational Linguistics
Tim Hunter, **Miloš Stanojević** and Edward Stabler
- CogACLL 2018** [A Sound and Complete Left-Corner Parsing for Minimalist Grammars](#)
Workshop on Cognitive Aspects of Computational Language Learning and Processing
Miloš Stanojević and Edward Stabler
- PROPOR 2018** [SICK-BR: a Portuguese corpus for inference](#)
International Conference on Computational Processing of the Portuguese Language
Livy Real, Ana Rodrigues, Andressa Vieira e Silva, Beatriz Albiero, Bruna Thalenberg, Bruno Guide, Cindy Silva, Guilherme de Oliveira Lima, Igor CS Câmara, **Miloš Stanojević**, Rodrigo Souza, Valeria de Paiva
- PhD Thesis 2017** [Permutation Forests for Modeling Word Order in Machine Translation](#)
University of Amsterdam 2017
Miloš Stanojević
- EMNLP 2017** [Neural Discontinuous Constituency Parsing](#)
Conference on Empirical Methods in Natural Language Processing
Miloš Stanojević and Raquel G. Alhama
- ACL 2017
short paper** [Alternative Objective Functions for Training MT Evaluation Metrics](#)
Annual Meeting of the Association for Computational Linguistics
Miloš Stanojević and Khalil Sima'an
- LACL 2016** [Minimalist Grammar Transition-Based Parsing](#)
Logical Aspects of Computational Linguistics
Miloš Stanojević
- COLING 2016** [Hierarchical Permutation Complexity for Word Order Evaluation](#)
International Conference on Computational Linguistics
Miloš Stanojević and Khalil Sima'an

- COLING 2016** [Universal Reordering via Linguistic Typology](#)
International Conference on Computational Linguistics
Joachim Daiber, **Miloš Stanojević** and Khalil Sima'an
- WMT 2016** [Examining the Relationship between Preordering and Word Order Freedom in Machine Translation](#)
Conference on Machine Translation
Joachim Daiber, **Miloš Stanojević**, Wilker Aziz and Khalil Sima'an
- WMT 2016** [Results of the WMT16 Metrics Shared Task](#)
Conference on Machine Translation
Ondřej Bojar, Yvette Graham, Amir Kamran and **Miloš Stanojević**
- WMT 2016** [Results of the WMT16 Tuning Shared Task](#)
Conference on Machine Translation
Bushra Jawaid, Amir Kamran, **Miloš Stanojević** and Ondřej Bojar
- EMNLP 2015** [Reordering Grammar Induction](#)
Conference on Empirical Methods in Natural Language Processing
Miloš Stanojević and Khalil Sima'an
- PBML 2015** [Evaluating MT systems with BEER](#)
The Prague Bulletin of Mathematical Linguistics
Miloš Stanojević and Khalil Sima'an
- WMT 2015** [BEER 1.1: ILLC UvA submission to metrics and tuning task](#)
Workshop on Machine Translation
Miloš Stanojević and Khalil Sima'an
- WMT 2015** [Results of the WMT15 Metrics Shared Task](#)
Workshop on Machine Translation
Miloš Stanojević, Amir Kamran, Philipp Koehn and Ondřej Bojar
- WMT 2015** [Results of the WMT15 Tuning Shared Task](#)
Workshop on Machine Translation
Miloš Stanojević, Amir Kamran and Ondřej Bojar
- SSST 2014** [Evaluating Word Order Recursively over Permutation-Forests](#)
Workshop on Syntax, Semantics and Structure in Statistical Translation
Miloš Stanojević and Khalil Sima'an

- WMT 2014** [BEER: BETter Evaluation as Ranking](#)
Workshop on Machine Translation
Miloš Stanojević and Khalil Sima'an
- EMNLP 2014**
short paper [Fitting Sentence Level Translation Evaluation with Many Dense Features](#)
Conference on Empirical Methods in Natural Language Processing
Miloš Stanojević and Khalil Sima'an
- WMT 2012** [Selecting data for English-to-Czech machine translation](#)
Workshop on Machine Translation
Aleš Tamchyna, Petra Galuščáková, Amir Kamran, **Miloš Stanojević**,
Ondřej Bojar

CONTRIBUTIONS TO COMMUNITY

- Reviewing for conferences: ACL, NAACL, EMNLP, CoNLL, AACL
- Reviewing for journals: CL, NLE, LREC, MT, LM
- Organizing shared tasks: WMT Metrics and WMT Tuning tasks in 2015 and 2016

SUPERVISION

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| 2021
<i>University of Edinburgh</i>
<i>MSc thesis</i>
<i>main supervisor</i> | Seth Aycock
Target-side CCG Supertag Prediction Improves Machine Translation |
| 2019
<i>University of Edinburgh</i>
<i>BSc project</i>
<i>main supervisor</i> | Chiehmin Wei – accepted for PhD studies at Cornell
Zero-Shot and Universal Parsing with Multilingual Contextualized Embeddings |
| 2018 – 2019
<i>University of Edinburgh</i>
<i>PhD thesis</i>
<i>co-supervised</i> | John Torr – accepted at Apple Research, Cambridge
Wide-Coverage Statistical Parsing with Minimalist Grammars |

TEACHING

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| 2012/2013 summer
<i>University of Amsterdam</i> | TA Statistical Structure in NLP |
| 2013/2014 winter
<i>University of Amsterdam</i> | TA Elements of Language Processing |

2014/2015 summer <i>University of Amsterdam</i>	TA project course on Monte Carlo Inference for PCFG
2015/2016 summer <i>University of Amsterdam</i>	TA Natural Language Processing 2
2016/2017 summer <i>University of Amsterdam</i>	TA Natural Language Processing 2

INVITED TALKS

<i>Mathematics of Language</i> Montpellier, 2021	CCG Combinators in Incremental Processing, Brain Activity and Linguistic Universals
<i>DeepMind</i> London, 2021	Integrating Deep Learning with Deep Syntax
<i>Nuance NL & AI lab</i> Sunnyvale, 2017	Learning Reordering Grammars
<i>Rich Parsing Workshop</i> Amsterdam, 2016	Minimalist Grammar Transition-Based Parsing
<i>MT Marathon</i> Prague, 2015	Discriminative Training for Statistical Machine Translation

SCHOLARSHIPS

2010 - 2012	Erasmus Mundus scholarship
2004 - 2010	Scholarship from the Ministry of Science and Technological Development of Serbia awarded for taking part in international mathematical competitions
2002 - 2004	Scholarship from the Ministry of Education of Serbia awarded for taking part in international mathematical competition
