

MILOŠ STANOJEVIĆ

LECTURER (~ASSISTANT PROFESSOR) AT UCL

SENIOR RESEARCH SCIENTIST AT GOOGLE DEEPMIND

RESEARCH INTERESTS

- Linguistics: Language Universals, Syntactic Formalisms and Incremental Parsing
- Learning: Neural Latent Variable Models and Probabilistic Inference over Structures
- Applications: Machine Translation, Sign Language Generation and LLMs in general

WORK EXPERIENCE

- Sep 2024 – now **Lecturer (~Assistant Professor) in Computational Linguistics**
University College London
Linguistics Department, London, UK
- Nov 2021 – now **Senior Research Scientist**
Google DeepMind
Language Team, London, UK
- Nov 2017 –
Oct 2021 **PostDoc / Research Associate**
University of Edinburgh
School of Informatics, Edinburgh, UK
- July 2017 –
Oct 2017 **Internship**
Nuance Communications (now part of Microsoft)
Natural Language and AI group, Sunnyvale, US

EDUCATION

- 2013 – 2017 **Ph.D. Natural Language Processing**
University of Amsterdam, Netherlands
- 2011 – 2013 **Mgr. Mathematical Linguistics**
Charles University in Prague, Czechia
- 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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[S://STANOJEVIC.GITHUB.IO/](https://STANOJEVIC.GITHUB.IO/)

- ACL 2024** [Multipath parsing in the brain](#)
Annual Meeting of the Association for Computational Linguistics
Berta Franzluebbers, Donald Dunagan, **Miloš Stanojević**, Jan Buys, John Hale
- CMCL 2024** [How can large language models become more human?](#)
best paper award *Workshop on Cognitive Modeling and Computational Linguistics*
Daphne Wang, Mehrnoosh Sadrzadeh, Miloš Stanojević, Wing-Yee Chow, Richard Breheny
- EMNLP System Demo 2023** [SynJax: Structured Probability Distributions for JAX](#)
Empirical Methods in Natural Language Processing System Demonstration
Miloš Stanojević and Laurent Sartran
- Cognitive Science journal 2023** [Modeling structure-building in the brain with CCG parsing and large language models](#)
Cognitive Science — journal
Miloš Stanojević, Jonathan Brennan, Donald Dunagan, Mark Steedman, John Hale
- Neurobiology of Language journal 2023** [Neural correlates of long-distance dependencies in Chinese and English](#)
Neurobiology of Language — journal
Donald Dunagan, **Miloš Stanojević**, Maximin Coavoux, Shulin Zhang, Shohini Bhattachali, Jixing Li, Jonathan Brennan, John Hale
- EMNLP 2022** [Unbiased and Efficient Sampling of Dependency Trees](#)
Conference on Empirical Methods in Natural Language Processing
Miloš Stanojević
- TACL journal 2022** [Transformer Grammars: Augmenting Transformer Language Models with Syntactic Inductive Biases at Scale](#)
Transactions of the Association for Computational Linguistics — journal
Laurent Sartran, Samuel Barrett, Adhiguna Kuncoro, **Miloš Stanojević**, Phil Blunsom, Chris Dyer
- Computational Linguistics journal 2021** [Formal Basis of a Language Universal](#)
Computational Linguistics — journal
Miloš Stanojević and Mark Steedman
- 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



- 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
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CONTRIBUTIONS TO THE COMMUNITY

Reviewing for conferences: ARR, ACL, NAACL, EMNLP, EACL, CoNLL, AAAI
Reviewing for journals: TACL, CL, NLE, LREC, MT, LM
Organizing shared tasks: Workshop on Machine Translation - Metrics task in [2015](#) and [2016](#)
Workshop on Machine Translation - Tuning task in [2015](#) and [2016](#)

SUPERVISION AND MENTORSHIP

2024 Google DeepMind internship mentor	Matthias Lindemann – now PhD student at University of Edinburgh Compressing Syntax into LLMs
2022 Google DeepMind scholar mentor	Mukhtar Mohamed – now MSc student at University of Edinburgh Part of DeepMind’s scholars programme.
2021 University of Edinburgh MSc thesis main supervisor	Seth Aycock – now PhD student at University of Amsterdam <u>Target-side CCG Supertag Prediction Improves Machine Translation</u>
2019 University of Edinburgh BSc project main supervisor	Chiehmin Wei – now MSc student at Cornell Zero-Shot and Universal Parsing with Multilingual Contextualized Embeddings
2018 – 2019 University of Edinburgh PhD thesis co-supervisor	John Torr – now RS at Apple Research, Cambridge <u>Wide-Coverage Statistical Parsing with Minimalist Grammars</u>

TEACHING

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>University of Amsterdam Netherlands, 2023</i>	Syntactic Structures and Large Language Models
<i>University of Cambridge Cambridge, UK, 2023</i>	The role of syntax in the world of large language models
<i>UCL London, UK, 2023</i>	What is the relation of Syntactic Parsing, Language Universals, Brain Activity and Large Language Models?
<i>ETH Zürich Zürich, Switzerland, 2022</i>	Testing Syntactic Theory on all Marr's Levels of Analysis
<i>Mathematics of Language Montpellier, France, 2021</i>	CCG Combinators in Brain Activity and Linguistic Universals
<i>DeepMind London, UK, 2021</i>	Integrating Deep Learning with Deep Syntax
<i>Nuance NL & AI lab Sunnyvale, USA, 2017</i>	Learning Reordering Grammars
<i>Rich Parsing Workshop Amsterdam, 2016</i>	Minimalist Grammar Transition-Based Parsing
<i>MT Marathon Prague, Czechia, 2015</i>	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

