

# MILOŠ STANOJEVIĆ

LECTURER (ASSISTANT PROFESSOR) AT UCL

SENIOR RESEARCH SCIENTIST AT GOOGLE DEEPMIND

## RESEARCH INTERESTS

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- 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

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- 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

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- 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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## PUBLICATIONS

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- HSP 2025**      [Generalizing active gap-filling](#)  
*Conference on Human Sentence Processing*  
Tim Hunter, Miloš Stanojević, Edward Stabler
- COLING 2025**      [Extracting structure from an LLM - how to improve on surprisal-based models of Human Language Processing](#)  
*International Conference on Computational Linguistics*  
Daphne Wang, Mehrnoosh Sadrzadeh, **Miloš Stanojević**, Wing-Yee Chow, Richard Breheny
- EMNLP 2024**      [Do LLMs learn a true syntactic universal?](#)  
*Empirical Methods in Natural Language Processing*  
John Hale and **Miloš Stanojević**
- 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?](#)  
*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](#)  
*Conference on Human Sentence Processing*  
**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 Jawaaid, 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 [Fitting Sentence Level Translation Evaluation with Many Dense](#)

short paper

[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](#)

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#### SUPERVISION AND MENTORSHIP

2024

**Google DeepMind  
internship mentor**

Matthias Lindemann

now PhD student at University of Edinburgh

**Compressing Syntax into LLMs**

2023

**Google DeepMind  
scholar mentor**

Catherine Nana Nyaah Essuman

now MSc student at University of Cape Town

**Part of Google DeepMind's scholars programme.**

2022

**Google DeepMind  
scholar mentor**

Mukhtar Mohamed

now intern at Google DeepMind

**Part of Google DeepMind's scholars programme.**

2021

**University of Edinburgh  
MSc thesis  
main supervisor**

Seth Aycock

now PhD student at University of Amsterdam

[Target-side CCG Supertag Prediction Improves Machine Translation](#)

2019

**University of Edinburgh  
BSc project  
main supervisor**

Chiehmin Wei

now software engineer at Roblox

**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

[Wide-Coverage Statistical Parsing with Minimalist Grammars](#)

## TEACHING

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|  |   |
|--|---|
| 2024/2025 winter<br><i>UCL</i>                     | Lectures on Parsing within <b>Introduction to Computational Linguistics</b> |
| 2012/2013 summer<br><i>University of Amsterdam</i> | TA <b>Statistical Structure in NLP</b>                                      |
| 2013/2014 winter<br><i>University of Amsterdam</i> | TA <b>Elements of Language Processing</b>                                   |
| 2014/2015 summer<br><i>University of Amsterdam</i> | TA project course on <b>Monte Carlo Inference for PCFG</b>                  |
| 2015/2016 summer<br><i>University of Amsterdam</i> | TA <b>Natural Language Processing 2</b>                                     |
| 2016/2017 summer<br><i>University of Amsterdam</i> | TA <b>Natural Language Processing 2</b>                                     |

## INVITED TALKS

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| <i>Stony Brook University<br/>New York, USA, 2025</i>        | <b>Incremental Sentence Processing of Right-Adjunction</b>   |
| <i>ILFC Seminar - CNRS,<br/>Paris, France, 2025</i>          | <b>Linguistic Universals in Grammars and Language Models</b>   |
| <i>Johns Hopkins University<br/>Baltimore, USA, 2024</i>     | <b>Syntactic Universals in Grammars and LLMs</b>   |
| <i>University of Amsterdam<br/>Netherlands, 2023</i>         | <b>Syntactic Structures and Large Language Models</b>  |
| <i>University of Cambridge<br/>Cambridge, UK, 2023</i>       | <b>The role of syntax in the world of large language models</b>  |
| <i>UCL<br/>London, UK, 2023</i>                              | <b>What is the relation of Syntactic Parsing, Language Universals, Brain Activity and Large Language Models?</b> |
| <i>ETH Zürich<br/>Zürich, Switzerland, 2022</i>              | <b>Testing Syntactic Theory on all Marr's Levels of Analysis</b>   |
| <i>Mathematics of Language<br/>Montpellier, France, 2021</i> | <b>CCG Combinators in Brain Activity and Linguistic Universals</b>   |
| <i>DeepMind<br/>London, UK, 2021</i>                         | <b>Integrating Deep Learning with Deep Syntax</b>  |

*Nuance NL & AI lab*  
Sunnyvale, USA, 2017

**Learning Reordering Grammars**

*Rich Parsing Workshop*  
Amsterdam, 2016

**Minimalist Grammar Transition-Based Parsing**

*MT Marathon*  
Prague, Czechia, 2015

**Discriminative Training for Statistical Machine Translation**

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#### 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

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