

# 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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- 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?](#)  
*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	<a href="#"><u>Formal Basis of a Language Universal</u></a> <i>Computational Linguistics — journal</i> <b>Miloš Stanojević</b> and Mark Steedman
EMNLP 2021	<a href="#"><u>A Root of a Problem: Optimizing Single-Root Dependency Parsing</u></a> <i>Conference on Empirical Methods in Natural Language Processing</i> <b>Miloš Stanojević</b> and Shay B. Cohen
IWCS 2021	<a href="#"><u>Computing All Quantifier Scopes with CCG</u></a> <i>International Conference on Computational Semantics</i> <b>Miloš Stanojević</b> and Mark Steedman
CMCL 2021	<a href="#"><u>Modeling incremental language comprehension in the brain with Combinatory Categorical Grammar</u></a> <i>Workshop on Cognitive Modeling and Computational Linguistics</i> <b>Miloš Stanojević</b> , Shohini Bhattachali, Donald Dunagan, Luca Campanelli, Mark Steedman, Jonathan Brennan, John Hale
CASE 2021	<a href="#"><u>Modality and Negation in Event Extraction</u></a> <i>Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text</i> Sander Bijl de Vroe, Liane Guillou, <b>Miloš Stanojević</b> , Nick McKenna and Mark Steedman
ACL 2020	<a href="#"><u>Max-Margin Incremental CCG Parsing</u></a> <i>Annual Meeting of the Association for Computational Linguistics</i> <b>Miloš Stanojević</b> and Mark Steedman
IWPT 2020	<a href="#"><u>Span-Based LCFRS-2 Parsing</u></a> <i>The 16th International Conference on Parsing Technologies</i> <b>Miloš Stanojević</b> and Mark Steedman
CUNY 2020	<a href="#"><u>Predictive Processing of Coordination in CCG</u></a> <i>CUNY Human Sentence Processing Conference</i> <b>Miloš Stanojević</b> , John Hale and Mark Steedman
ACL 2019	<a href="#"><u>Wide-Coverage Neural A* Parsing for Minimalist Grammars</u></a> <i>Annual Meeting of the Association for Computational Linguistics</i> John Torr, <b>Miloš Stanojević</b> , Mark Steedman and Shay B. Cohen
FG 2019	<a href="#"><u>On the Computational Complexity of Head Movement and Affix Hopping</u></a> <i>Conference on Formal Grammar</i> <b>Miloš Stanojević</b>

- 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

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Reviewing for conferences: ARR, ACL, NAACL, EMNLP, EACL, CoNLL, AACL

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

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2024 <b>Google DeepMind</b> <i>internship mentor</i>	Matthias Lindemann now PhD student at University of Edinburgh <b>Compressing Syntax into LLMs</b>
2023 <b>Google DeepMind</b> <i>scholar mentor</i>	Catherine Nana Nyaah Essuman now MSc student at University of Cape Town <b>Part of Google DeepMind's scholars programme.</b>
2022 <b>Google DeepMind</b> <i>scholar mentor</i>	Mukhtar Mohamed now intern at Google DeepMind <b>Part of Google DeepMind's scholars programme.</b>
2021 <b>University of Edinburgh</b> <i>MSc thesis</i> <i>main supervisor</i>	Seth Aycock now PhD student at University of Amsterdam <a href="#">Target-side CCG Supertag Prediction Improves Machine Translation</a>
2019 <b>University of Edinburgh</b> <i>BSc project</i> <i>main supervisor</i>	Chiehmin Wei now software engineer at Roblox <b>Zero-Shot and Universal Parsing with Multilingual Contextualized Embeddings</b>
2018 – 2019 <b>University of Edinburgh</b> <i>PhD thesis</i> <i>co-supervisor</i>	John Torr now RS at Apple Research, Cambridge <a href="#">Wide-Coverage Statistical Parsing with Minimalist Grammars</a>

## TEACHING

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

## INVITED TALKS

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