

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

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

EDUCATION

- | | |
|-------------|---|
| 2013 – 2017 | Ph.D. Natural Language Processing
<i>University of Amsterdam, Netherlands</i> |
| 2011 – 2013 | Mgr. Mathematical Linguistics
<i>Charles University in Prague, Czechia</i> |
| 2010 – 2011 | M.Sc. Human Language Science and Technology
<i>University of Malta, Malta</i> |
| 2006 – 2010 | B.Sc. Electrical Engineering
<i>University of Niš, Serbia</i> |
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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	<u>Formal Basis of a Language Universal</u> <i>Computational Linguistics — journal</i> Miloš Stanojević and Mark Steedman
EMNLP 2021	<u>A Root of a Problem: Optimizing Single-Root Dependency Parsing</u> <i>Conference on Empirical Methods in Natural Language Processing</i> Miloš Stanojević and Shay B. Cohen
IWCS 2021	<u>Computing All Quantifier Scopes with CCG</u> <i>International Conference on Computational Semantics</i> Miloš Stanojević and Mark Steedman
CMCL 2021	<u>Modeling incremental language comprehension in the brain with Combinatory Categorical Grammar</u> <i>Workshop on Cognitive Modeling and Computational Linguistics</i> Miloš Stanojević , Shohini Bhattachali, Donald Dunagan, Luca Campanelli, Mark Steedman, Jonathan Brennan, John Hale
CASE 2021	<u>Modality and Negation in Event Extraction</u> <i>Workshop on Challenges and Applications of Automated Extraction of Socio-political Events from Text</i> Sander Bijl de Vroe, Liane Guillou, Miloš Stanojević , Nick McKenna and Mark Steedman
ACL 2020	<u>Max-Margin Incremental CCG Parsing</u> <i>Annual Meeting of the Association for Computational Linguistics</i> Miloš Stanojević and Mark Steedman
IWPT 2020	<u>Span-Based LCFRS-2 Parsing</u> <i>The 16th International Conference on Parsing Technologies</i> Miloš Stanojević and Mark Steedman
CUNY 2020	<u>Predictive Processing of Coordination in CCG</u> <i>CUNY Human Sentence Processing Conference</i> Miloš Stanojević , John Hale and Mark Steedman
ACL 2019	<u>Wide-Coverage Neural A* Parsing for Minimalist Grammars</u> <i>Annual Meeting of the Association for Computational Linguistics</i> John Torr, Miloš Stanojević , Mark Steedman and Shay B. Cohen
FG 2019	<u>On the Computational Complexity of Head Movement and Affix Hopping</u> <i>Conference on Formal Grammar</i> 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 THE COMMUNITY

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](#)

SUPERVISION AND MENTORSHIP

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

TEACHING

2024/2025 winter <i>UCL</i>	Lectures on Parsing within Introduction to Computational Linguistics
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>Stony Brook University New York, USA, 2025</i>	Incremental Parsing with Minimalist Grammars
<i>ILFC Seminar CNRS, online, 2025</i>	Syntactic Universals in Grammars and LLMs
<i>Johns Hopkins University Baltimore, USA, 2024</i>	Syntactic Universals in Grammars and LLMs
<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

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

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
