

Marek Rei

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Homepage: www.marekrei.com

Experience

Lecturer in Machine Learning, Imperial College London

October 2019 - current

Researching representation learning, transfer learning and language modelling for natural language understanding. Applying the technology in the areas of education, healthcare and business analytics. Lecturing Natural Language Processing, along with Introduction to Machine Learning, one of the largest courses in the department. Supervising/co-supervising 3 PhD students and a number of Master's students on their research projects.

Visiting Researcher, University of Cambridge

October 2019 - current

Researching neural machine learning algorithms for automated error detection, error correction, exercise creation and language proficiency scoring. Collaborating on the Automated Language Teaching and Assessment (ALTA) project.

Co-founder and Chief Scientific Officer, Transformative AI

October 2016 - current

Researching machine learning algorithms for the early prediction of cardiac arrest in critical care patients. The system is continuously analysing ECG signals in order to detect ventricular tachyarrhythmias before they occur. We have received investor funding, as well as substantial grants from Innovate UK and the Wellcome Trust.

Affiliated Lecturer, University of Cambridge

October 2018 - October 2019

My research is on machine learning and advanced neural network architectures, with a focus on representation learning, transfer learning, language modeling and multi-objective optimization. I teach courses on machine learning and data science to both undergraduate and MPhil students, and I supervise projects for the Advanced Computer Science degree.

Senior Research Associate, University of Cambridge

July 2016 - October 2019

Working on machine learning and natural language processing, structured prediction and multi-task learning. My work contributes to the ALTA project – an industry collaboration with Cambridge Assessment, with the goal of creating innovative new technologies for language learning and teaching. Supervising MPhil and undergraduate students for their course projects, and teaching as part of the MPhil course on Advanced Computer Science.

Research Associate, University of Cambridge

November 2014 - July 2016

Performed research on machine learning algorithms for automated language analysis. Among other things, I developed a general-purpose neural structured prediction framework, and an online representa-

tion learning algorithm for improved language modeling.

Visiting Lecturer, University of Tartu

March 2015 - June 2015

As a visiting lecturer, I created and delivered a new course on machine learning and language modeling. The lectures cover topics such as n-gram language modeling, smoothing techniques, language model evaluation, neural network language models, recurrent models, backpropagation, gradient descent, representation learning, and an overview of current state-of-the-art methods for language modeling.

Language Research Engineer, SwiftKey

November 2012 - November 2014

I was a member of the Research team, working on future technologies and prototyping new solutions. One of my main projects was the neural network version of SwiftKey, which was released to very positive reviews. Since then, SwiftKey has been acquired by Microsoft, largely based on the strength of its technology.

Supervision Tutor, University of Cambridge

January 2011 - March 2012

I organized tutoring sessions for undergraduate students in the subject of Information Retrieval. This involved regular tutorials in small groups, and providing them with theoretical and practical assignments.

Public Relations Manager, Board of European Students of Technology

September 2007 - July 2008

Organizing BEST General Assembly 2008 - an international student congress with representatives from 76 universities. Handled relations with the media, companies and universities, and designed various promotional materials. Worked in a core team of 5 people together with over 40 volunteers.

Software Analyst, Webmedia

June 2007 - August 2007

Internship as a software analyst. Worked on enhancing a self-service system for a mobile service provider, designed and performed usability tests and quality control, wrote specifications and created a prototype for a new user interface.

Project manager, Board of European Students of Technology

October 2006 - May 2007

Main organizer of Key to the Future (Võti Tulevikku) 2007, a national career project for graduates in Estonia with 74 participating companies. As the project manager I led a core team of 5 people plus many volunteers, and was involved in every aspect of the project.

Software Developer, Movies.ee

June 2006 - April 2007

Developed a custom-built content management system for managing movies, actors, news, galleries, contests and live cinema timetables.

Software Developer at Geomedia

February 2006 - June 2006

Developed software for conducting large-scale population surveys.

Education

PhD, University of Cambridge

2009 - 2013

My thesis is about minimally supervised dependency-based methods for natural language processing, under the supervision of Prof Ted Briscoe. I worked on topics such as distributional and semantic similarity, speculation detection, entailment detection, and unsupervised parse reranking. I applied various machine learning techniques and developed systems that achieved state-of-the-art performance.

MPhil, University of Cambridge

2008 - 2009

MPhil in Computer Speech, Text and Internet Technologies. Covered topics such as speech recognition, speech synthesis, parsing, discourse, dialogue systems, machine translation and question answering.

BSc, Tallinn University of Technology

2005 - 2008

Bachelor's Degree in Computer Science from the Tallinn University of Technology. Specialised in Network Applications and Logic, graduated *cum laude*.

Membership

I am a member of the following organizations:

Member of the Association for the Advancement of Artificial Intelligence (AAAI)

Member of the Association for Computational Linguistics (ACL)

Member of the Special Interest Group on Representation Learning (SigREP)

Member of the Special Interest Group on NLP and Education (SigEDU)

Member of the AI4Health Training Board at Imperial College London

Member of the AI Network at Imperial College London

Member of the Leonardo Centre for Sustainable Business

Organization

I helped organize the following events:

Senior Area Chair for the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP 2022)

Organizer of the 10th Conference on Automated Knowledge Base Construction (AKBC 2022)

Area Chair for the 2021 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2021)

Organizer of the 2020 Workshop on Representation Learning for NLP (RepL4NLP 2020)

Area Chair for the 58th Annual Meeting of the Association for Computational Linguistics (ACL 2020)

Area Chair for the 57th Annual Meeting of the Association for Computational Linguistics (ACL 2019)
Area Chair for the Eighth Joint Conference on Lexical and Computational Semantics (*SEM 2019)
Organizer of the 2019 Workshop on Representation Learning for NLP (RepL4NLP 2019)
Organizer of the Workshop on Machine Translation and Natural Language Processing at Makerere University 2018

Awards, Grants and Scholarships

EU-Horizon-RIA grant for Combatting Diet Related Non-Communicable Disease through Enhanced Surveillance (CoDiet). Co-investigator, 2023-2027
Young IT Scientist of the Year, Presidential Award. Estonia, 2021
Nominated for the President's Award for Excellence in Education, by the Imperial College Department of Computing, 2021
King's College Junior Research Fellowship, 2017-2021
Cambridge-Africa Alborada Research award, 2017-2018
Best Paper Award for Research Inspired by Human Language Learning, CoNLL 2018
Language Sciences Research Incubator Fund, 2017
EPSRC Doctoral Training award, 2009-2012
Cambridge European Trust award, 2009-2012
Computer Laboratory Local Industry Fund, 2009-2012
Churchill College Studentship, 2009-2012
EPSRC Collaborative Training award, 2008
Cambridge European Trust award, 2008
Estonian Academy of Sciences research award, 2008
AS Elion Scholarship, 2007

Lecturing

The courses I have created and lectured:

Natural Language Processing, Imperial College London, 2023 Spring
Introduction to Machine Learning, Imperial College London, 2022 Autumn
Introduction to Machine Learning, Imperial College London, 2022 Spring
Introduction to Machine Learning, Imperial College London, 2021 Autumn
Introduction to Machine Learning, Imperial College London, 2021 Spring
Introduction to Machine Learning, Imperial College London, 2020 Autumn

Introduction to Machine Learning, Imperial College London, 2020 Spring

Interpreting the Black Box: Explainable Neural Network Models, University of Cambridge, 2019

Data Science: Principles and Practice, University of Cambridge, 2018

Constructing and Evaluating Word Embeddings, University of Cambridge, 2017

Constructing and Evaluating Word Embeddings, University of Cambridge, 2016

Machine Learning for Language Modelling, University of Tartu, 2015

Supervision

Students whom I supervise for their thesis or course project:

Developing more robust NLI models that generalise better to other unseen datasets

Joe Stacey

PhD, Imperial College London, to finish in 2024.

Generative Neural-led Visual Dialog

Nihir Vedda

PhD, Imperial College London, to finish in 2023.

Co-supervisor, together with Prof Lucia Specia.

Noise Reduction for Robust Language Processing Models

Zhenhao Li

PhD, Imperial College London, to finish in 2023.

Co-supervisor, together with Prof Lucia Specia.

Being Right for the Right Reasons: Using Auxiliary Datasets During Training to Create More Robust NLP Models

Marine De Backer

MSc in Advanced Computing, Imperial College London, 2022.

Capturing the Gap in Pre-trained Language Models

Hangyu Li

MSc in Advanced Computing, Imperial College London, 2022.

Entity Relation Extraction within the Telecommunications Domain

Alba Espinosa Rastoll

MSc in Artificial Intelligence, Imperial College London, 2022.

ICD Coding with Transformers

Clarence Ng

MSc in Computing (AI & ML), Imperial College London, 2022.

Finding the Needle in a Haystack: Zero-shot Rationale Extraction for Long Text Classifiers

Kamil Bujel

MEng in Mathematics and Computer Science, Imperial College London, 2022.

Hierarchical Models for Grammatical Error Correction

Stuart Mesham

MPhil in Advanced Computer Science, University of Cambridge, 2022.

Co-supervision with Christopher Bryant and Zheng Yuan.

Multi-level Optimization in Transformer Models

Tom Taylor

*MSc in Computing (AI & ML), Imperial College London, 2021.***Sustainability Initiative Detection in Company Reports**

Mircea-Dan Hirlea

*MSc in Artificial Intelligence, Imperial College London, 2021.***Pre-training Contextual Language Decoders**

Jordan Clive

*MSc in Computing (AI & ML), Imperial College London, 2021.***Temporal Modelling in Electronic Health Records for Diagnosis Prediction**

Ziyue Xu

*MSc in Computing (AI & ML), Imperial College London, 2021.***Capturing Outliers with Neural Episodic Memory**

Michael Tanzer

*MSc in Computing (AI & ML), Imperial College London, 2020.***Twice-cooked Contextual Embeddings**

Sun Whang

*MSc in Artificial Intelligence, Imperial College London, 2020.***Unsupervised Error Detection**

Simone Primarosa

*MPhil in Advanced Computer Science, University of Cambridge, 2020.**Co-supervising together with Dr Chris Bryant.***Supervised Interpretability for Text Classification**

Kamil Bujel

*MEng in Mathematics and Computer Science, Imperial College London, 2020.***Joint modelling of compositionality, metaphor and emotion**

Verna Dankers

*Master's dissertation, University of Amsterdam, 2019.**Supervising in collaboration with Dr Ekaterina Shutova and Dr Martha Lewis.***Joint Text Classification on Multiple Levels with Multiple Labels**

Miruna Pislari

*MPhil in Advanced Computer Science, University of Cambridge, 2019.***Few-Shot Learning in Distributional Semantics**

Jeroen Van Haute

*MPhil in Advanced Computer Science, University of Cambridge, 2019.**Supervising in collaboration with Dr Guy Emerson.***Language Modelling for Neural Error Detection**

Samuel Bell

*MPhil in Advanced Computer Science, University of Cambridge, 2018.***Neural Architectures for Visual Question Answering**

Joshua Wong

Computer Science Tripos, University of Cambridge, 2018.

Supervised Attention for Neural Error Correction

Gladys Tien

*MPhil in Advanced Computer Science, University of Cambridge, 2018.**Supervising in collaboration with Dr Zheng Yuan.***Domain Adaptation for Neural Named Entity Recognition**

Stefan Hosein

*MPhil in Advanced Computer Science, University of Cambridge, 2017.***Hybrid Language Modeling for Text Prediction**

Devan Kuleindiren

*Computer Science Tripos, University of Cambridge, 2017.***Convolutional Neural Networks for Automated Essay Assessment**

Younna Farag

*MPhil in Advanced Computer Science, University of Cambridge, 2016.***Predicting Word Difficulty for Lexical Acquisition**

Shushan Arakelyan

MPhil in Advanced Computer Science, University of Cambridge, 2016.

Publications

Logical Reasoning with Span-Level Predictions for Interpretable and Robust NLI Models

Joe Stacey, Pasquale Minervini, Haim Dubossarsky and Marek Rei

*In Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP 2022).***Multimodal Conversation Modelling for Topic Derailment Detection**

Zhenhao Li, Marek Rei and Lucia Specia

*In Findings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP 2022).***Probing for targeted syntactic knowledge through grammatical error detection**

Christopher Davis, Christopher Bryant, Andrew Caines, Marek Rei and Paula Buttery

*In Proceedings of the 26th Conference on Computational Natural Language Learning (CoNLL 2022).***Guiding Visual Question Generation**

Nihir Vedd, Zixu Wang, Marek Rei, Yishu Miao and Lucia Specia

*In Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics - Human Language Technologies (NAACL-HLT 2022).***Memorisation versus Generalisation in Pre-trained Language Models**

Michael Tanzer, Sebastian Ruder and Marek Rei

*In Proceedings of the 60th annual meeting of the Association for Computational Linguistics (ACL 2022).***Supervising Model Attention with Human Explanations for Robust Natural Language Inference**

Joe Stacey, Yonatan Belinkov and Marek Rei

*In Proceedings of the Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI 2022).***Visual Cues and Error Correction for Translation Robustness**

Zhenhao Li, Marek Rei and Lucia Specia

*In Findings of the Association for Computational Linguistics: EMNLP 2021.***GiBERT: Introducing Linguistic Knowledge into BERT through a Lightweight Gated Injection Method**

Nicole Peinelt, Marek Rei and Maria Liakata

In Findings of the Association for Computational Linguistics: EMNLP 2021.

Zero-shot Sequence Labeling for Transformer-based Sentence Classifiers

Kamil Bujel, Helen Yannakoudakis and Marek Rei

*In Proceedings of the 6th Workshop on Representation Learning for NLP (RepL4NLP 2021).***How Metaphors Impact Political Discourse: A Large-Scale Topic-Agnostic Study Using Neural Metaphor Detection**

Vinodkumar Prabhakaran, Marek Rei and Ekaterina Shutova

*In Proceedings of the 15th International Conference on Web and Social Media (ICWSM 2021).***Control Prefixes for Text Generation**

Jordan Clive, Kris Cao and Marek Rei

*ArXiv, 2021. Under review.***Contextual Sentence Classification: Detecting Sustainability Initiatives in Company Reports**

Dan Hirlea, Christopher Bryant, Maurizio Zollo and Marek Rei

*ArXiv, 2021.***Seeing Both the Forest and the Trees: Multi-head Attention for Joint Classification on Different Compositional Levels**

Miruna Pislari and Marek Rei

*In Proceedings of the 28th International Conference on Computational Linguistics (COLING 2020).***Grammatical error detection in transcriptions of spoken English**

Andrew Caines, Christian Bentz, Kate Knill, Marek Rei and Paula Buttery

*In Proceedings of the 28th International Conference on Computational Linguistics (COLING 2020).***Grammatical Error Correction in Low Error Density Domains: A New Benchmark and Analyses**

Simon Flachs, Ophelie Lacroix, Helen Yannakoudakis, Marek Rei and Anders Søgaard

*In Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP 2020).***Multidirectional Associative Optimization of Function-Specific Word Representations**

Daniela Gerz, Ivan Vulić, Marek Rei, Roi Reichart and Anna Korhonen

*In Proceedings of the 58th annual meeting of the Association for Computational Linguistics (ACL 2020).***Verbal Multiword Expressions for Identification of Metaphor**

Omid Rohanian, Marek Rei, Shiva Taslimipour and Le An Ha

*In Proceedings of the 58th annual meeting of the Association for Computational Linguistics (ACL 2020).***Bad Form: Comparing Context-Based and Form-Based Few-Shot Learning in Distributional Semantic Models**Jeroen Van Hautte, Guy Emerson and Marek Rei *In Proceedings of the Second Workshop on Deep Learning for Low-Resource NLP (DeepLo 2019).***Modelling the interplay of metaphor and emotion through multitask learning**

Verna Dankers, Marek Rei, Martha Lewis and Ekaterina Shutova

*In Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and 9th International Joint Conference on Natural Language Processing (EMNLP-IJCNLP 2019).***Semi-Supervised Bootstrapping of Dialogue State Trackers for Task-Oriented Modelling**

Bo-Hsiang Tseng, Marek Rei, Pawel Budzianowski, Richard Turner, Bill Byrne and Anna Korhonen

*In Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and 9th International Joint Conference on Natural Language Processing (EMNLP-IJCNLP 2019).***Neural and FST-based approaches to grammatical error correction**

Zheng Yuan, Felix Stahlberg, Marek Rei, Bill Byrne and Helen Yannakoudakis

In Proceedings of the 14th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2019).

Context is Key: Grammatical Error Detection with Contextual Word Representations

Samuel Bell, Helen Yannakoudakis and Marek Rei

In Proceedings of the 14th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2019).

CAMsterdam at SemEval-2019 Task 6: Neural and graph-based feature extraction for the identification of offensive tweets

Guy Aglionby, Christopher Davis, Pushkar Mishra, Andrew Caines, Helen Yannakoudakis, Marek Rei, Ekaterina Shutova and Paula Buttery

In Proceedings of the International Workshop on Semantic Evaluation 2019 (SemEval 2019).

A Simple and Robust Approach to Detecting Subject-Verb Agreement Errors

Simon Flachs, Ophélie Lacroix, Marek Rei, Helen Yannakoudakis and Anders Søgaard

In Proceedings of the 17th Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2019).

Jointly Learning to Label Sentences and Tokens

Marek Rei and Anders Søgaard

In Proceedings of the Thirty-Third AAAI Conference on Artificial Intelligence (AAAI 2019).

Advance Prediction of Ventricular Tachyarrhythmias using Patient Metadata and Multi-Task Networks

Marek Rei, Josh Oppenheimer and Marek Sirendi

In Proceedings of the NeurIPS Workshop on Machine Learning for Health (ML4H 2018).

Sequence Classification with Human Attention

Maria Barrett, Joachim Bingel, Nora Hollenstein, Marek Rei and Anders Søgaard

In Proceedings of the SIGNLL Conference on Computational Natural Language Learning (CoNLL 2018).

Special award for the best paper on research inspired by human language learning and processing

Scoring Lexical Entailment with a Supervised Directional Similarity Network

Marek Rei, Daniela Gerz and Ivan Vulić

In Proceedings of the 56th Annual Meeting of the Association for Computational Linguistics (ACL 2018).

Zero-shot Sequence Labeling: Transferring Knowledge from Sentences to Tokens

Marek Rei and Anders Søgaard

In Proceedings of the 16th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL 2018).

Variable Typing: Assigning Meaning to Variables in Mathematical Text

Yiannos Stathopoulos, Simon Baker, Marek Rei and Simone Teufel

In Proceedings of the 16th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL 2018).

A Supervised Similarity Network for Metaphor Detection

Marek Rei, Luana Bulat, Douwe Kiela and Katia Shutova

In Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing (EMNLP 2017).

Neural Sequence-Labeling Models for Grammatical Error Correction

Helen Yannakoudakis, Marek Rei, Øistein E. Andersen and Zheng Yuan

In Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing (EMNLP 2017).

Artificial Error Generation with Machine Translation and Syntactic Patterns

Marek Rei, Mariano Felice, Zheng Yuan and Ted Briscoe

*In Proceedings of the 12th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2017).***Auxiliary Objectives for Neural Error Detection Models**

Marek Rei and Helen Yannakoudakis

*In Proceedings of the 12th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2017).***An Error-Oriented Approach to Word Embedding Pre-Training**

Youmna Hussein, Marek Rei and Ted Briscoe

*In Proceedings of the 12th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2017).***Detecting Off-topic Responses to Visual Prompts**

Marek Rei

*In Proceedings of the 12th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2017).***Semi-supervised Multitask Learning for Sequence Labeling**

Marek Rei

*In Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (ACL 2017).***Attending to Characters in Neural Sequence Labeling Models**

Marek Rei, Sampo Pyysalo and Gamal K.O. Crichton

*In Proceedings of the 26th International Conference on Computational Linguistics (COLING 2016).***A Joint Model for Word Embedding and Word Morphology**

Kris Cao and Marek Rei

*In Proceedings of the 1st Workshop on Representation Learning for NLP (RepL4NLP 2016).***Compositional Sequence Labeling Models for Error Detection in Learner Writing**

Marek Rei and Helen Yannakoudakis

*In Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (ACL 2016).***Automatic Text Scoring Using Neural Networks**

Dimitrios Alikaniotis, Helen Yannakoudakis and Marek Rei

*In Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (ACL 2016).***Sentence Similarity Measures for Fine-Grained Estimation of Topical Relevance in Learner Essays**

Marek Rei and Ronan Cummins

*In Proceedings of the 11th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2016).***Online Representation Learning in Recurrent Neural Language Models**

Marek Rei

*In Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing (EMNLP 2015).***Looking for hyponyms in vector space**

Marek Rei and Ted Briscoe

*In Proceedings of the Eighteenth Conference on Computational Natural Language Learning (CoNLL 2014).***Parser lexicalisation through self-learning**

Marek Rei and Ted Briscoe

In Proceedings of the 2013 Conference of the North American Chapter of the Association for Computational Linguistics (NAACL-HLT 2013).

Unsupervised Entailment Detection between Dependency Graph Fragments

Marek Rei and Ted Briscoe

In Proceedings of the 2011 Workshop on Biomedical Natural Language Processing (BioNLP 2011).

Combining Manual Rules and Supervised Learning for Hedge Cue and Scope Detection

Marek Rei and Ted Briscoe

The 14th Conference on Natural Language Learning (CoNLL 2010).

Note 1: In the areas of ML and NLP, most top-level publishing happens through conferences instead of journals. ML/NLP conferences only publish full-length peer-reviewed papers.

Note 2: Between 2012-2014 I was working as a researcher in SwiftKey. Research from that period was not published due to confidentiality restrictions, but a section of it has been made available as a patent.

Book Chapters

Intelligent Information Access from Scientific Papers

Ted Briscoe, Karl Harrison, Andrew Naish-Guzman, Andy Parker, Marek Rei, Advait Siddharthan, David Sinclair, Mark Slater and Rebecca Watson

Current Challenges in Patent Information Retrieval, edited by Mihai Lupu, Katja Mayer, John Tait and Anthony J. Trippe, 2011.

Patents

Patent applications for which I am the named inventor:

Improved Artificial Neural Network for Language Modelling and Prediction

Customised neural network structure for increasing the efficiency of language models, based on my research in SwiftKey.

London, United Kingdom, 2016

Prediction of Cardiac Events

Machine learning system for predicting cardiac events in patients and using it to guide their medical care, based on my research for Transformative AI.

London, United Kingdom, 2017

Theses

Minimally Supervised Dependency-based Methods for Natural Language Processing

PhD thesis, University of Cambridge

Supervised by Ted Briscoe

Cambridge, United Kingdom, 2013

Adaptive Interactive Information Extraction

MPhil thesis, University of Cambridge

Supervised by Ted Briscoe

Cambridge, United Kingdom, 2009

Audio-visual Speech Synthesis

Bachelor's thesis, Tallinn University of Technology

Supervised by Einar Meister

Tallinn, Estonia, 2008

Invited Talks**Encoders: The Art of Packing Text into Vectors**

ESSCaSS Tartu Summer School. August 2022

Memorisation versus Generalisation in Language Models

University of Cambridge, UK. May 2022

Memorisation versus Generalisation in Language Models

Polish Natural Language Processing Group, UK. Nov 2021

Multidirectional Associative Optimization of Function-Specific Word Representations

University of Cambridge, UK. June 2020

Inductive Transfer Learning for Neural Models

Ajou University, South Korea. July 2019

Application of Deep Learning in NLP

RANLP Summer School on Deep Learning in NLP, Bulgaria. August 2019

How to Pay Attention: Learning to Transfer Knowledge between Sentences and Tokens

University of Cambridge, UK. May 2019

Inductive Transfer Learning for Neural Models of Natural Language

Imperial College London, UK. March 2019

Semi-supervised and Zero-shot Methods for Sequence Labeling

TU Darmstadt, Germany. November 2018

Language Modelling and Machine Translation

University of Makerere, Uganda. June 2018

Human Interpretability of Machine Learning Models

University of Tartu, Estonia. May 2018

Understanding and Assessing Language with Neural Network Models

Grammarly, Ukraine. March 2018

Neural Architectures for Sequence Labelling

Grammarly, Ukraine. March 2018

Auxiliary Objectives for Neural Sequence Labelling Models

University of Copenhagen, Denmark. November 2017

Sequence Labeling Models for Error Detection in Learner Writing

Machine Learning for Further Language Learning, summer school in Chania, Greece. July 2017

Neural Architectures for Sequence Labelling

Apple Cambridge. June 2017

Neural Architectures for Sequence Labelling*University College London. May 2017***Neural Architectures for Sequence Labelling***University of Cambridge. May 2017***Character-based and Multi-task Learning for Neural Sequence Labeling***University of Sheffield. March 2017*

Program Committee

I am part of the program committee for the following conferences and workshops:

The 2023 International Conference on Learning Representations (ICLR 2023)

The 39th International Conference on Machine Learning (ICML 2022)

The Conference on Neural Information Processing Systems (NeurIPS 2022)

The 2022 International Conference on Learning Representations (ICLR 2022)

Joint CDT Conference on AI for Healthcare (CAI4H 2022)

The 2021 Conference on Empirical Methods in Natural Language Processing (EMNLP 2021)

The Conference on Neural Information Processing Systems (NeurIPS 2021)

The Joint Conference of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing (ACL-IJCNLP 2021)

The 3rd Workshop on NLP for Conversational AI (NLP4CONVAI 2021)

The 2021 International Conference on Learning Representations (ICLR 2021)

The 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP 2020)

The Conference on Neural Information Processing Systems (NeurIPS 2020)

The Second Workshop on Knowledge Extraction and Integration for Deep Learning Architectures (DeeLIO 2020)

The Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI 2020)

The 37th International Conference on Machine Learning (ICML 2020)

The SIGNLL Conference on Computational Natural Language Learning (CoNLL 2020)

The Conference on Neural Information Processing Systems (NeurIPS 2019)

The 2019 Conference on Empirical Methods in Natural Language Processing (EMNLP-IJCNLP 2019)

The SIGNLL Conference on Computational Natural Language Learning (CoNLL 2019)

The 14th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2019)

The 1st Workshop on NLP for ConvAI (NLP4CONVAI 2019)

The 5th Workshop on Noisy User-generated Text (W-NUT 2019)

The 22nd Nordic Conference on Computational Linguistics (NoDaLiDa 2019)

The 36th International Conference on Machine Learning (ICML 2019)

The 2nd Learning from Limited Labeled Data Workshop (LLD 2019)

The 3rd Workshop on Evaluating Vector Space Representations for NLP (RepEval 2019)

The Second Workshop on Fact Extraction and Verification (FEVER 2019)

The Workshop on Structured Prediction for NLP (SPNLP 2019)

The Workshop on Deep Learning Approaches for Low Resource Natural Language Processing (DeepLo 2019)

The 56th Annual Meeting of the Association for Computational Linguistics (ACL 2018)

The SIGNLL Conference on Computational Natural Language Learning (CoNLL 2018)

The Conference on Computational Linguistics (COLING 2018)

The 13th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2018)

The Seventh Joint Conference on Lexical and Computational Semantics (*SEM 2018)

The 3rd Workshop on Representation Learning for NLP (RepL4NLP 2018)

The First Workshop on Fact Extraction and Verification (FEVER 2018)

The Workshop on Figurative Language Processing (FigLang 2018)

Workshop on Deep Learning Approaches for Low Resource Natural Language Processing (DeepLo 2018)

Workshop on Subword and Character Level Models in NLP 2018 (SCLeM 2018)

Workshop on Figurative Language Processing 2018 (FigLang 2018)

The Sixth Joint Conference on Lexical and Computational Semantics (*SEM 2017)

The 12th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2017)

Workshop on Evaluating Vector Space Representations for NLP 2017 (RepEval 2017)

Workshop on Subword and Character Level Models in NLP 2017 (SCLeM 2017)

Workshop on Evaluating Vector Space Representations for NLP 2016 (RepEval 2016)

The 11th Workshop on Innovative Use of NLP for Building Educational Applications (BEA 2016)

Additional Reviewing

In addition to the program committees above, I review for the following journals and publishers:

MIT Press

The AAAI Conference on Artificial Intelligence (AAAI)

Journal of Natural Language Engineering (JNLE)

Special Issue of the Natural Language Engineering: Informing Neural Architectures for NLP with Linguistic and Background Knowledge

Artificial Intelligence Journal

International Journal of Artificial Intelligence in Education (IJAIED)

Cambridge Language Sciences Symposium

Programming Skills

Main experience: Python, PyTorch, Tensorflow, Theano, Java, JavaScript, PHP, SQL, HTML, CSS

Limited experience: C++, C, Android, Clojure, Perl, JSP, Lisp, Prolog, Haskell