MWE 2023

The 19th Workshop on Multiword Expressions (MWE 2023)

Proceedings of the Workshop

May 6, 2023
Introduction

The 19th Workshop on Multiword Expressions (MWE 2023), colocated with EACL 2023 in Dubrovnik, Croatia, will take place as a hybrid event (on-site and virtual) on May 6, 2023. MWE 2023 is organized and sponsored by the Special Interest Group on the Lexicon (SIGLEX) of the Association for Computational Linguistics (ACL).

Multiword expressions (MWEs) present an interesting research area due to the lexical, syntactic, semantic, pragmatic, and/or statistical idiosyncrasies they exhibit. Given their irregular nature, they pose complex problems in linguistic modeling (e.g. annotation), NLP tasks (e.g. parsing), and end-user applications (e.g. natural language understanding and MT). For the past two decades, modeling and processing MWEs for NLP has been the topic of the MWE workshop. Impressive progress has been made in the field, but our understanding of MWEs still requires much research considering their need and usefulness in NLP applications. This is also relevant to domain-specific NLP pipelines that need to tackle terminologies that often manifest as MWEs. For the 19th edition of the workshop, we identified the following topics on which contributions were particularly encouraged:

- **MWE processing and identification in specialized languages and domains:** Multiword terminology extraction from domain-specific corpora is of particular importance to various applications, such as MT, or for the identification and monitoring of neologisms and technical jargon. We expect approaches that deal with the processing of MWEs as well as the processing of terminology in specialized domains can benefit from each other.

- **MWE processing to enhance end-user applications:** MWEs have gained particular attention in end-user applications, including MT, simplification, language learning and assessment, social media mining, and abusive language detection. We believe that it is crucial to extend and deepen these first attempts to integrate and evaluate MWE technology in these and further end-user applications.

- **MWE identification and interpretation in pre-trained language models:** Most current MWE processing is limited to their identification and detection using pre-trained language models, but we still lack understanding about how MWEs are represented and dealt with therein, how to better model the compositionality of MWEs from semantics. Now that NLP has shifted towards end-to-end neural models like BERT, capable of solving complex tasks with little or no intermediary linguistic symbols, questions arise about the extent to which MWEs should be implicitly or explicitly modeled.

- **MWE processing in low-resource languages:** The PARSEME shared tasks, among others, have fostered significant progress in MWE identification, providing datasets that include low-resource languages, evaluation measures, and tools that now allow fully integrating MWE identification into end-user applications. A few efforts have recently explored methods for the automatic interpretation of MWEs, and their processing in low-resource languages. Resource creation and sharing should be pursued in parallel with the development of methods able to capitalize on small datasets.

Pursuing the tradition of MWE Section of SIGLEX to foster future synergies with other communities to address scientific challenges in the creation of resources, models and applications to deal with MWEs, and in accordance with one of our special topics in MWE 2023 on specialized languages and domains, we are organizing a special track on “MWEs in Clinical NLP” as part of the MWE 2023 Workshop, collaborating with the Clinical NLP Workshop (colocated with ACL 2023).

We received 21 submissions of original research papers (10 long and 11 short) and selected 14 of them (7 long and 7 short), with an overall acceptance rate of 66.67% for the archival submissions. 9 of the accepted papers will be presented orally and 5 will be presented as posters. Two of the 14 accepted papers will be presented in the Special Track on MWEs in Clinical NLP. In addition to the archival submissions,
we also invited and accepted two non-archival submissions (published at other venues) for presentation (1 oral and 1 poster). The papers range from focus on (i) tasks such as identification or detection of MWEs, detection of idiomaticity, probing for idiomaticity, or measuring idiomaticity in the clinical domain, processing and comprehension of MWEs (experiments to measure human and computational processing), or comprehension of verbal MWEs; (ii) their evaluation through a survey of papers, e.g., on MWE identification focusing on their experimental designs; (iii) annotation or corpus development efforts, for example, annotations for lexical bundles used as discourse connectives, release of an annotated multilingual corpus of verbal MWEs and related recent developments of technical infrastructure for various languages, automatic generation of difficulty-graded vocabulary lists with MWEs graded based on their semantic compositionally, automated generation of pronunciation information for multiword terms in Wiktionary; (iv) methods to evaluate corpora, e.g., evaluating MWE lexicon formalisms based on observational adequacy; or (v) their applications, for example, studying effects of identifying MWEs on topic modeling, or development of a tool to enable complex queries over instances of verbal MWEs. The papers cover a large number of languages and a number of domains demonstrating the pervasiveness of MWEs and usefulness of research and synergistic efforts involving this area.

In addition to the oral and poster presentations of the accepted papers, the workshop features two keynote talks and a panel discussion with distinguished guests from the MWEs community and the Clinical NLP community. In the main session, Dr. Leo Wanner (ICREA and University Pompeu Fabra) will deliver a keynote talk titled ‘Lexical collocations: Explored a lot, still a lot more to explore’. In the special track on MWEs in Clinical NLP, Dr. Asma Ben Abacha (Microsoft) and Dr. Goran Nenadic (University of Manchester) will deliver a keynote talk titled ‘MWEs in ClinicalNLP and Healthcare Text Analytics’.

We are grateful to the keynote speakers and panelists for agreeing to share their experiences and insights, the members of the Program Committee for their thorough and timely reviews to help us select an excellent technical program, and all members of the organizing committee for the fruitful collaboration. Our thanks also go to the EACL 2023 organizers for their support, to SIGLEX for their endorsement, and to the Clinical NLP workshop organizers for their efforts and interest in collaborating with MWE 2023 to create synergies between the two communities. Finally, we thank all the authors for their valuable contributions to the workshop and to all the workshop participants for their interest in the event.

Archna Bhatia, Kilian Evang, Marcos Garcia, Voula Giouli, Lifeng Han, Shiva Taslimipoor
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Jakub Waszczyk, University of Duesseldorf
Eric Wehrli, University of Geneva
Marion Weller-Di Marco, Ludwig Maximilian University of Munich
Seid Muhie Yimam, Universität Hamburg

Keynote Speakers
Leo Wanner, ICREA and Universitat Pompeu Fabra
Asma Ben Abacha, Microsoft
Goran Nenadic, University of Manchester
Keynote Talk: Lexical collocations: Explored a lot, still a lot more to explore

Leo Wanner
ICREA and Universitat Pompeu Fabra
2023-05-06 –

Abstract: Lexical collocations: Explored a lot, still a lot more to explore
Lexical collocations, i.e., idiosyncratic binary lexical item combinations, have been an active research topic already for a number of years. State-of-the-art neural network models report to detect and classify specific types of lexical collocations with high accuracy, which might suggest that the problem has been solved. However, a cross-type and cross-language analysis of the results of one of these models raises several relevant research questions. In the first part of my talk, I will present our recent work on the identification and classification of lexical collocations with respect to the fine-grained taxonomy of lexical functions (LFs) in English, French, Spanish and Japanese. Drawing on the outcome of this work, I will focus, in the second part of my talk, on the comparative analysis of the “LF profiles” of English and Japanese material. In particular, I will discuss (i) how the considered LFs are distributed in the given corpora; (ii) how rich the repertoires of the LF instances are in each of them; (iii) whether the contexts of the LF instances overlap; and (iv) to what extent the “profile” of an LF correlates with the accuracy of the recognition of its instances. To conclude, I will formulate the research questions that arise from this analysis.

Bio: Dr. Leo Wanner, ICREA and Universitat Pompeu Fabra
Leo Wanner is ICREA Research Professor at the Pompeu Fabra University in Barcelona, with 230+ peer reviewed publications and 10 edited volumes. He is Associate Editor of the Computational Intelligence and Frontiers in AI, Language and Computation journals and serves as regular reviewer for a number of high-profile conferences and journals on Computational Linguistics. Throughout his career, Leo worked on a number of topics in the field, including natural language generation and summarization, concept extraction, conversational agents, hate speech recognition, and, in particular, also lexical collocation identification and classification.
Keynote Talk: MWEs in ClinicalNLP and Healthcare Text Analytics

Asma Ben Abacha and Goran Nenadic
Microsoft and University of Manchester (respectively)

2023-05-06

Abstract: MWEs in ClinicalNLP and Healthcare Text Analytics

MWEs are a common phenomenon in the clinical domain: for example, diagnoses and clinical findings are often expressed using complex, compositional multi-word expressions that contain references to a disease, its anatomy, laterality, severity, temporality etc. This applies both to the ‘formal' clinical language (e.g. in clinical letters, clinical terminologies) and spoken or written healthcare discussions (e.g. patient-doctor conversations, healthcare social media). Despite advances in language modelling, the extraction and disentangling of clinical MWEs are still challenging tasks. In this talk, we will first look at the structure of multi-word disease descriptions in clinical letters, and discuss the challenges in mapping such free-text mentions to standard clinical vocabularies. We will then discuss how MWE extraction could be evaluated using various automatic evaluation metrics. We will compare several evaluation methods and metrics, and explore the correlation between automatic metrics and manual judgments, in particular in the context of the summarization of doctor-patient conversations and generation of clinical notes.

Bio: Dr. Asma Ben Abacha (Microsoft) and Dr. Goran Nenadic (University of Manchester)

Asma Abacha is a Senior Scientist at Microsoft, with over 80 peer reviewed publications. Her research interests include Natural Language Processing, Machine Learning, Artificial Intelligence and their applications in medicine and healthcare.

Goran Nenadic is a Professor in the Department of Computer Science at University of Manchester and a Turing Fellow at the Alan Turing Institute, with more than 250 peer reviewed publications. His research interests include Natural Language Processing, text mining, and health informatics.
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Program

Saturday, May 6, 2023

08:30 - 09:00  Registration
09:00 - 09:10  Opening
09:10 - 10:30  Oral long paper presentations

*Are Frequent Phrases Directly Retrieved like Idioms? An Investigation with Self-Paced Reading and Language Models*
Giulia Rambelli, Emmanuele Chersoni, Marco S. G. Senaldi, Philippe Blache and Alessandro Lenci

*A Survey of MWE Identification Experiments: The Devil is in the Details*
Carlos Ramisch, Abigail Walsh, Thomas Blanchard and Shiva Taslimipoor

*The Better Your Syntax, the Better Your Semantics? Probing Pretrained Language Models for the English Comparative Correlative*
Leonie Weissweiler, Valentin Hofmann, Abdullatif Koksal and Hinrich Schütze

*Predicting Compositionality of Verbal Multiword Expressions in Persian*
Mahtab Sarlak, Yalda Yarandi and Mehrnoush Shamsfard

10:30 - 11:15  Morning coffee break
11:15 - 12:15  Keynote Talk, Leo Wanner: Lexical collocations: Explored a lot, still a lot more to explore
12:15 - 12:50  Oral paper presentations

*Romanian Multiword Expression Detection Using Multilingual Adversarial Training and Lateral Inhibition*
Andrei Avram, Verginica Barbu Mititelu and Dumitru-Clementin Cercel

*PARSEME corpus release 1.3*

12:50 - 14:15  Lunch Break
Saturday, May 6, 2023 (continued)

14:15 - 14:45  Keynote Talk, Asma Abacha and Goran Nenadic: MWEs in Clinical NLP and Healthcare Text Analytics

14:45 - 15:15  Oral short paper presentations

Detecting Idiomatic Multiword Expressions in Clinical Terminology using Definition-Based Representation Learning
François Remy, Alfiya Khabibullina and Thomas Demeester

Investigating the Effects of MWE Identification in Structural Topic Modelling
Dimitrios Kokkinakis, Ricardo Sánchez, Sebastianus Bruinsma and Mia-Marie Hammarlin

15:15 - 15:45  Panel discussion: Multiword Expressions in Knowledge-intensive Domains: Clinical Text as a Case Study

15:45 - 16:30  Afternoon coffee break

16:30 - 17:15  Poster session

Idioms, Probing and Dangerous Things: Towards Structural Probing for Idiomaticity in Vector Space
Filip Klubička, Vasudevan Nedumpozhimana and John Kelleher

Simple and Effective Multi-Token Completion from Masked Language Models
Oren Kalinsky, Guy Kushilevitz, Alexander Libov and Yoav Goldberg

Annotation of lexical bundles with discourse functions in a Spanish academic corpus
Eleonora Guzzi, Margarita Alonso-Ramos, Marcos Garcia and Marcos García Salido

Enriching Multiword Terms in Wiktionary with Pronunciation Information
Lenka Bajcetic, Thierry Declerck and Gilles Sérasset

Automatic Generation of Vocabulary Lists with Multiword Expressions
John Lee and Adilet Uvaliyev

A MWE lexicon formalism optimised for observational adequacy
Adam Lion-Bouton, Agata Savary and Jean-Yves Antoine
Saturday, May 6, 2023 (continued)

17:15 - 17:45  Oral short paper presentations

*Token-level Identification of Multiword Expressions using Pre-trained Multilingual Language Models*
Raghuraman Swaminathan and Paul Cook

*Graph-based multi-layer querying in Parseme Corpora*
Bruno Guillaume

17:45 - 18:00  Closing