

EMNLP 2022

**The 2022 Conference on Empirical Methods in Natural
Language Processing: Tutorial Abstracts**

Tutorial Abstracts

December 7-8, 2022

©2022 Association for Computational Linguistics

Order copies of this and other ACL proceedings from:

Association for Computational Linguistics (ACL)
209 N. Eighth Street
Stroudsburg, PA 18360
USA
Tel: +1-570-476-8006
Fax: +1-570-476-0860
acl@aclweb.org

ISBN 978-1-959429-30-2

Introduction

Welcome to the Tutorials Session of EMNLP 2022

The EMNLP 2022 tutorials session provides an in depth coverage of a variety of topics reflecting recent advances in Natural Language Processing methods and applications, presented by experts from academia and ranging from introductory to cutting-edge.

This year, as has been the tradition over the past few years, the call, submission, reviewing and selection of tutorials were coordinated jointly for multiple conferences: ACL, NAACL, COLING and EMNLP. A review committee consisting of ACL, NAACL, COLING and EMNLP tutorial chairs as well as 23 external reviewers (see Program Committee for the full list), was formed. The committee followed a review process that ensured that each of the 47 submitted tutorial proposals, received 3 reviews. The selection criteria included clarity and preparedness, novelty or timely character of the topic, instructors' experience, likely audience interest, open access of the tutorial instructional material, and diversity and inclusion.

The six tutorials selected for EMNLP include 2 introductory tutorials and 4 cutting-edge tutorials. The two introductory tutorials address Arabic natural language processing (T2) and causal inference for natural language processing(T4) while the cutting-edge tutorials address meaning representations for natural languages (T1), emergent language-based coordination in deep Multi-Agent Systems (T3), modular and parameter-efficient fine-tuning for NLP models (T5), and non-autoregressive models for fast sequence generation (T6).

We would like to thank the ACL, NAACL, and COLING tutorial chairs and the 23 external reviewers for their effective collaboration and their efforts to ensure a smooth selection process as well as their invaluable assistance in the decision process. We would also like to thank EMNLP's general chair Noah Smith for his readiness to extend support whenever requested. We are very grateful for tutorial organizers for their valuable contributions.

As has been the case last year, tutorial presentations will be a mixture of online, on-site and hybrid presentations. We hope you all benefit from and enjoy the tutorial program at EMNLP 2022!

EMNLP 2022 Tutorial Co-chairs
Samhaa R. El-Beltagy
Xipeng Qiu

Organizing Committee

General Chair

Noah Smith, University of Washington/Allen Institute for Artificial Intelligence

Program Chairs

Yoav Goldberg, Bar Ilan University, Isreal

Zornitsa Kozareva, SliceX AI, USA

Yue Zhang, Westlake University, China

Tutorial Chairs

Samhaa R. El-Beltagy, Newgiza University, Egypt

Xipeng Qiu, Fudan University, China

Program Committee

Program Committee

Cecilia Alm, Rochester Institute of Technology, USA
Antonios Anastasopoulos, George Mason University, USA
Miguel Ballesteros, Amazon, USA
Daniel Beck, University of Melbourne, Australia
Luciana Benotti, National University of Córdoba, Argentina
Yevgeni Berzak, Technion, Israel Institute of Technology, Israel
Erik Cambria, Nanyang Technological University, Singapore
Hsin-Hsi Chen, National Taiwan University, Taiwan
Gaël Dias, University of Caen Normandy, France
Lucia Donatelli, Saarland University, Germany
Samhaa R. El-Beltagy, Newgiza University, Egypt
Karën Fort, Sorbonne Université / LORIA, France
Heng Ji, University of Illinois, Urbana-Champaign, USA
David Jurgens, University of Michigan, USA
Naoaki Okazaki, Tokyo Institute of Technology, Japan
Alexis Palmer, University of Colorado, Boulder, USA
Mohammad Taher Pilehvar, Tehran Institute for Advanced Studies, Iran
Barbara Plank, LMU Munich, Germany and IT University of Copenhagen, Denmark
Emily Prud'hommeaux, Boston College, USA
Xipeng Qiu, Fudan University, China
Agata Savary, Université Paris-Saclay, France
João Sedoc, New York University, USA
Yulia Tsvetkov, University of Washington, USA
Aline Villavicencio, University of Sheffield, UK
Ivan Vulić, University of Cambridge, UK
Yogarshi Vyas, Amazon, USA
Joachim Wagner, Dublin City University, Ireland
Taro Watanabe, Nara Institute of Science and Technology, Japan
Aaron Steven White, University of Rochester, USA
Diyi Yang, Georgia Institute of Technology, USA
Marcos Zampieri, Rochester Institute of Technology, USA
Meishan Zhang, Harbin Institute of Technology (Shenzhen), China
Yue Zhang, Westlake University, China
Arkaitz Zubiaga, Queen Mary University London, UK

Table of Contents

<i>Meaning Representations for Natural Languages: Design, Models and Applications</i> Jeffrey Flanigan, Ishan Jindal, Yunyao Li, Tim O’Gorman, Martha Palmer and Nianwen Xue . .	1
<i>Arabic Natural Language Processing</i> Nizar Habash	9
<i>Emergent Language-Based Coordination In Deep Multi-Agent Systems</i> Marco Baroni, Roberto Dessi and Angeliki Lazaridou	11
<i>CausalNLP Tutorial: An Introduction to Causality for Natural Language Processing</i> Zhijing Jin, Amir Feder and Kun Zhang	17
<i>Modular and Parameter-Efficient Fine-Tuning for NLP Models</i> Sebastian Ruder, Jonas Pfeiffer and Ivan Vulić	23
<i>Non-Autoregressive Models for Fast Sequence Generation</i> Yang Feng and Chenze Shao	30

Program

Wednesday, December 7, 2022

09:00 - 17:30 *Day 1*

Meaning Representations for Natural Languages: Design, Models and Applications

Jeffrey Flanigan, Ishan Jindal, Yunyao Li, Tim O’Gorman, Martha Palmer and Nianwen Xue

Arabic Natural Language Processing

Nizar Habash

Emergent Language-Based Coordination In Deep Multi-Agent Systems

Marco Baroni, Roberto Dessi and Angeliki Lazaridou

Thursday, December 8, 2022

09:00 - 17:30 *Day 2*

CausalNLP Tutorial: An Introduction to Causality for Natural Language Processing

Zhijing Jin, Amir Feder and Kun Zhang

Modular and Parameter-Efficient Fine-Tuning for NLP Models

Sebastian Ruder, Jonas Pfeiffer and Ivan Vulić

Meaning Representations for Natural Languages: Design, Models and Applications

Jeffrey Flanigan, Ishan Jindal, Yunyao Li, Tim O’Gorman, Martha Palmer and Nianwen Xue