* SEM 2021

The 10th Conference on Lexical and Computational Semantics

Proceedings of the Conference

August 5 - 6, 2021
Bangkok, Thailand (online)

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ISBN 978-1-954085-77-0

Message from the General Chair and the Program Chairs

Welcome to ***SEM 2021**, the Joint Conference on Lexical and Computational Semantics! The conference celebrates a small jubilee, with its **10th** edition, and we are pleased to present this volume containing the accepted long and short papers.

*SEM 2021 was held as a virtual conference following ACL-IJCNLP 2021, on August 5-6, 2021, due to the exceptional circumstances imposed by the COVID-19 pandemic.

Since its first edition in 2012, *SEM has become a major venue to present recent advances in all areas of lexical and computational semantics, including semantic representations, semantic processing, multilingual semantics, and others. *SEM is sponsored by SIGLEX, the ACL Special Interest Group on the Lexicon.

*SEM 2021 received 78 submissions in 10 areas:

- Theoretical and formal semantics
- Sentiment analysis and argument mining
- Semantics in NLP applications
- Semantic composition and sentence-level semantics
- Resources and evaluation
- Psycholinguistics, cognitive linguistics and semantic processing
- Multilinguality
- Lexical semantics and word representations
- Commonsense reasoning and natural language understanding

We compiled an exciting program across all these areas. This year saw a particularly strong batch of submissions; finally, **30** papers were accepted – **21** long papers and **9** short papers.

The submitted papers were carefully evaluated by a program committee led by 20 area chairs, who coordinated a panel of 174 reviewers. Each submission was reviewed by three reviewers, who were encouraged to discuss any divergence in evaluations. The papers in each area were subsequently assessed by the area chairs, who added meta-reviews to explain their accept/reject suggestions. The final selection was made by the program co-chairs after an independent check of all the reviews, meta-reviews, and discussions with the area chairs. The reviewers' recommendations were also used to shortlist a set of papers nominated for the Best Paper Award.

We are also very excited to have two excellent keynote speakers: **Diyi Yang** (Georgia Institute of Technology) discussing the inclusion of social factors into natural language processing models, and **Felix Hill** (DeepMind) talking about learning embodied language.

We are deeply thankful to all area chairs and reviewers for their invaluable help in the selection of the program, for their readiness in engaging in thoughtful discussions about individual papers, and for providing valuable feedback to the authors. We are grateful to our Publicity chair, Yashar Mehdad (Facebook AI), who set up and regularly updated *SEM's website and publicized it through social media. We thank the Publication Chair, Mark-Christoph Müller (HITS), for his help with the compilation of the

proceedings, and the ACL-IJCNLP 2021 workshop organizers for all the valuable help and support with organisational aspects of the conference. Finally, we thank all our authors and presenters for making *SEM 2021 such an exciting event. We hope you will find the content of these proceedings as well as the program of *SEM 2021 enjoyable, interesting and inspirational!

Vivi Nastase and **Ivan Vulić**, Program Co-Chairs

Lun-Wei Ku, General Chair

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Semantic composition and sentence representations

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Daniel Hershcovich, University of Copenhagen

Discourse, dialogue, and generation

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Thang Vu, University of Stuttgart

Multilinguality

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Edoardo Maria Ponti, Mila Quebec AI Institute & McGill University

Psycholinguistics and semantic processing

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Emily Prud'hommeaux, Boston College

Resources and evaluation

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Kilian Evang, University of Düsseldorf

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Invited Talk: Why Do Embodied Language Learning?

Felix Hill
Deep Mind

Abstract: In this talk, I'll give some good reasons to study language learning and processing in the context of an embodied or situated agent. Learning in an embodied context is fundamentally different from other ML settings. Working out how to perceive and move in addition to understanding and using language can be a substantial additional burden for the learner. However, I will show that it can also bring important benefits. The embodied learner sees the world from an egocentric perspective, is necessarily located at a specific place at a given time, exerts some control over the learning data it encounters, and confronts face-on the relationship between language and the physical world. These factors place strong constraints on the learner's experience, which can in turn lead to more human-like learning outcomes. Our findings suggest that embodied learning may play an important role in convincingly replicating human linguistic intuitions and behaviours in a machine.

Bio: Felix Hill is a Research Scientist at DeepMind, and leads a team focusing on grounded language learning and processing. He has a Masters degree in pure mathematics from the University of Oxford, and a Masters in Psycholinguistics and PhD in Computer Science from the University of Cambridge. His graduate studies focused on representation-learning in neural network models of language, on which he worked with many great collaborators including Ivan Vulić, Douwe Kiela, Yoshua Bengio, Kyunghyun Cho and Jason Weston. At DeepMind, he has focused on developing better learning, meta-learning, reasoning, memory systems and generalization in agents that explore and interact with simulated environments.

Invited Talk: Seven Social Factors in Natural Language Processing: Theory and Practice

Diyi Yang
Georgia Institute of Technology

Abstract: Recently, natural language processing (NLP) has had increasing success and produced extensive industrial applications. Despite being sufficient to enable these applications, current NLP systems often ignore the social part of language, e.g., who says it, in what context, for what goals. In this talk, we take a closer look at social factors in language via a new theory taxonomy, and its interplay with computational methods via two lines of work. The first one studies what makes language persuasive by introducing a semi-supervised method to leverage hierarchical structures in text to recognize persuasion strategies in good-faith requests. The second part demonstrates how various structures in conversations can be utilized to generate better summaries for everyday interaction. We conclude by discussing several open-ended questions towards how to build socially aware language technologies, with the hope of getting closer to the goal of human-like language understanding.

Bio: Diyi Yang is an assistant professor in the School of Interactive Computing at Georgia Tech. She is broadly interested in Computational Social Science, and Natural Language Processing. Diyi received her PhD from the Language Technologies Institute at Carnegie Mellon University. Her work has been published at leading NLP/HCI conferences, and also resulted in multiple award nominations from EMNLP, ICWSM, SIGCHI and CSCW. She is named as a Forbes 30 under 30 in Science, a recipient of IEEE AI 10 to Watch, and has received faculty research awards from Amazon, Facebook, JPMorgan Chase, and Salesforce.

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