MOL 2019

The 16th Meeting on the Mathematics of Language

Proceedings of the Conference

18–19 July, 2019 University of Toronto Toronto, Canada





©2019 The Association for Computational Linguistics

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 978-1-950737-51-2

Introduction

These are the proceedings of the 16th Meeting on the Mathematics of Language (MOL 2019), held at the University of Toronto, on July 18–19, 2019.

The volume contains ten regular papers, which have been selected from a total of eighteen submissions, using the EasyChair conference management system.

The conference benefited from the financial support of the University of Toronto and of the Natural Sciences and Engineering Research Council of Canada, which we gratefully acknowledge.

Last but not least, we would like to express our sincere gratitude to all the reviewers for MOL 2019 and to all the people who helped with the local organization.

Philippe de Groote, Frank Drewes, and Gerald Penn (editors)

Program Chairs:

Philippe de Groote, INRIA Nancy - Grand Est (France) Frank Drewes, Umeå University (Sweden)

Organizing Chair:

Gerald Penn, University of Toronto (Canada)

Program Committee:

Henrik Björklund, Umeå University (Sweden) David Chiang, University of Notre Dame (USA) Alexander Clark, King's College London (UK) Valeria de Paiva, Nuance Communications (USA) Carlos Gómez-Rodríguez, University of A Coruña (Spain) Jeffrey Heinz, Stony Brook University (USA) Makoto Kanazawa, Hosei University (Japan) Greg Kobele, Leipzig University (Germany) Marco Kuhlmann, Linköping University (Sweden) Giorgio Magri, CNRS (France) Andreas Maletti, Leipzig University (Germany) Jens Michaelis, Bielefeld University (Germany) Glyn Morrill, Universitat Politècnica de Catalunya (Spain) Larry Moss, Indiana University, Bloomington (USA) Reinhard Muskens, Tilburg University (The Netherlands) Jim Rogers, Earlham College (USA) Mehrnoosh Sadrzadeh, Queen Mary University of London (UK) Anssi Yli-Jyrä, University of Helsinki (Finland)

Invited Speakers:

Matilde Marcolli, California Institute of Technology (USA) Rohit Parikh, City University of New York (USA)

Table of Contents

Parsing Weighted Order-Preserving Hyperedge Replacement GrammarsHenrik Björklund, Frank Drewes and Petter Ericson	1
Sensing Tree Automata as a Model of Syntactic DependenciesThomas Graf and Aniello De Santo	12
Presupposition Projection and Repair Strategies in Trivalent Semantics	27
Dependently-Typed Montague Semantics in the Proof Assistant Agda-flat	40
Quantifier-free least fixed point functions for phonology	50
Some classes of sets of structures definable without quantifiers	63
Efficient learning of Output Tier-based Strictly 2-Local functionsPhillip Burness and Kevin McMullin	78
Learning with Partially Ordered Representations	91
Maximum Likelihood Estimation of Factored Regular Deterministic Stochastic Languages Jeffrey Heinz and Chihiro Shibata	102
Sentence LengthSentence LengthGábor Borbély and András Kornai	114