MoL 2015

The 14th Meeting on the Mathematics of Language

Proceedings

July 25–26, 2015
Chicago, USA
Introduction

We are pleased to introduce the proceedings of the 14th Meeting on Mathematics of Language, MoL, to be held at the University of Chicago on July 25–26, 2015.

This volume contains eleven regular papers and two invited papers. The regular papers, which were selected by the Program Committee from a total of twenty-two submissions, feature a broad variety of work on mathematics of language, including phonology, formal language theory, natural language semantics, and language learning. The invited papers are presented by two distinguished researchers in the field: David McAllester, Professor and Chief Academic Officer at the Toyota Technological Institute at Chicago, and Ryo Yoshinaka, Assistant Professor at Kyoto University.

We would like to express our sincere gratitude to our colleagues on the Program Committee for the time and effort that they put into the reviewing of the papers, and to Min-Yen Kan for his help with the publishing of these proceedings in the ACL Anthology.

We wish you all a fruitful meeting.

Marco Kuhlmann, Makoto Kanazawa and Gregory M. Kobele (editors)
Program Chairs:

Marco Kuhlmann (Linköping University, Sweden)
Makoto Kanazawa (National Institute of Informatics, Japan)

Local Chair:

Gregory M. Kobele (University of Chicago, USA)

Program Committee:

Henrik Björklund (Umeå University, Sweden)
David Chiang (University of Notre Dame, USA)
Alexander Clark (King’s College London, UK)
Shay Cohen (University of Edinburgh, UK)
Carlos Gómez-Rodríguez (University of A Coruña, Spain)
Jeffrey Heinz (University of Delaware, USA)
Gerhard Jäger (University of Tübingen, Germany)
Aravind Joshi (University of Pennsylvania, USA)
András Kornai (Hungarian Academy of Sciences, Hungary)
Giorgio Magri (CNRS, France)
Andreas Maletti (University of Stuttgart, Germany)
Jens Michaelis (Bielefeld University, Germany)
Gerald Penn (University of Toronto, Canada)
Carl Pollard (The Ohio State University, USA)
Jim Rogers (Earlham College, USA)
Mehnoosh Sadrzadeh (Queen Mary University of London, UK)
Sylvain Salvati (INRIA, France)
Ed Stabler (University of California, Los Angeles, USA)
Mark Steedman (Edinburgh University, UK)
Anssi Yli-Jyrä (University of Helsinki, Finland)

Invited Speakers:

David McAllester (Toyota Technological Institute at Chicago, USA)
Ryo Yoshinaka (Kyoto University, Japan)
# Table of Contents

**A Refined Notion of Memory Usage for Minimalist Parsing**  
Thomas Graf, Brigitta Fodor, James Monette, Gianpaul Rachiele, Aunika Warren and Chong Zhang. ................................................................. 1

**Abstract Categorial Parsing as Linear Logic Programming**  
Philippe de Groote. ................................................................. 15

**Topology of Language Classes**  
Sean A. Fulop and David Kephart. ............................................ 26

**Individuation Criteria, Dot-types and Copredication: A View from Modern Type Theories**  
Stergios Chatzikyriakidis and Zhaohui Luo. .................................. 39

**Lexical Semantics and Model Theory: Together at Last?**  
András Kornai and Marcus Kracht. ........................................... 51

**A Frobenius Model of Information Structure in Categorial Compositional Distributional Semantics**  
Dimitri Kartsaklis and Mehrnoosh Sadrzadeh. .............................. 62

**A Synopsis of Morphoid Type Theory**  
David McAllester ................................................................. 75

**General Perspective on Distributionally Learnable Classes**  
Ryo Yoshinaka. ................................................................. 87

**Canonical Context-Free Grammars and Strong Learning: Two Approaches**  
Alexander Clark. ................................................................. 99

**Output Strictly Local Functions**  
Jane Chandlee, Rémi Eyraud and Jeffrey Heinz. ............................ 112

**How to Choose Successful Losers in Error-Driven Phonotactic Learning**  
Giorgio Magri and René Kager. .............................................. 126

**A Concatenation Operation to Derive Autosegmental Graphs**  
Adam Jardine and Jeffrey Heinz. ............................................. 139

**Syntactic Polygraphs. A Formalism Extending Both Constituency and Dependency**  
Sylvain Kahane and Nicolas Mazziotta. ....................................... 152
Program

Saturday, July 25

09:30–10:15   A Refined Notion of Memory Usage for Minimalist Parsing
               Thomas Graf, Brigitta Fodor, James Monette, Gianpaul Rachiele, Aunika Warren
               and Chong Zhang

10:15–11:00   Abstract Categorial Parsing as Linear Logic Programming
               Philippe de Groote

11:00–11:15   Coffee Break

11:15–12:00   Topology of Language Classes
               Sean A. Fulop and David Kephart

12:00–14:00   Lunch Break

14:00–14:20   S.-Y. Kuroda Prize Ceremony

14:20–15:05   Individuation Criteria, Dot-types and Copredication: A View from Modern Type
               Theories
               Stergios Chatzikyriakidis and Zhaohui Luo

15:05–15:50   Lexical Semantics and Model Theory: Together at Last?
               András Kornai and Marcus Kracht

15:50–16:35   A Frobenius Model of Information Structure in Categorical Compositional Distri-
               butional Semantics
               Dimitri Kartsaklis and Mehrnoosh Sadrzadeh

16:35–16:50   Coffee Break

16:50–17:50   Invited Talk: A Synopsis of Morphoid Type Theory
               David McAllester
Sunday, July 26

09:30–10:30 Invited Talk: *General Perspective on Distributionally Learnable Classes*
Ryo Yoshinaka

10:30–10:45 Coffee Break

10:45–11:30 *Canonical Context-Free Grammars and Strong Learning: Two Approaches*
Alexander Clark

11:30–12:15 *Output Strictly Local Functions*
Jane Chandlee, Rémi Eyraud and Jeffrey Heinz

12:15–13:00 *How to Choose Successful Losers in Error-Driven Phonotactic Learning*
Giorgio Magri and René Kager

13:00–15:00 Lunch Break

15:00–15:45 *A Concatenation Operation to Derive Autosegmental Graphs*
Adam Jardine and Jeffrey Heinz

15:45–16:30 *Syntactic Polygraphs. A Formalism Extending Both Constituency and Dependency*
Sylvain Kahane and Nicolas Mazziotta

16:30–17:30 Business Meeting