EACL 2014

14th Conference of the European Chapter of the Association for Computational Linguistics

Proceedings of the Workshop on Type Theory and Natural Language Semantics (TTNLS)

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Introduction

Type theory has been a central area of research in logic, the semantics of programming languages, and natural language semantics over the past fifty years. Recent developments in type theory have been used to reconstruct the formal foundations of computational semantics. The treatments are generally intensional and polymorphic in character. They allow for structured, fine-grained encoding of information across a diverse set of linguistic domains.

The work in this area has opened up new approaches to modelling the relations between, inter alia, syntax, semantic interpretation, dialogue, inference, and cognition, from a largely proof theoretic perspective. The papers in this volume cover a wide range of topics on the application of type theory to modelling semantic properties of natural language.

TTNLS 2014 is providing a forum for the presentation of leading edge research in this fast developing sub-field of computational linguistics. To the best of our knowledge it is the first major conference on this topic hosted by the ACL.

We received a total of 13 relevant submissions, 10 of which were accepted for presentation. Each submission was reviewed by two members of our Programme Committee. We thank these people for their detailed and helpful reviews.

We are also including Aarne Ranta's invited paper here. We are honoured that he has accepted our invitation to present this paper at TTNLS, and we look forward to his talk.

We would like to thank the organisers of the EACL 2014 both for their financial assistance and their organisational support. We are also grateful to the Dialogue Technology Lab at the Centre for Language Technology of University of Gothenburg, and to the Wenner-Gren Foundations for funding Shalom Lappin's research visits to University of Gothenburg, during which this workshop was organised.

Robin Cooper, Simon Dobnik, Shalom Lappin, and Staffan Larsson

University of Gothenburg and London

March 2014

Workshop Organisation

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Ray Turner (University of Essex)

Invited speaker:

Aarne Ranta (University of Gothenburg and Chalmers University of Technology)

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Conference Program

Sunday, 27 April 2014

8:15 Registration

8:45 Opening remarks by Robin Cooper

(9:00 - 10:30) Session 1

9:00 *Types and Records for Predication*
Aarne Ranta

10:00 *System with Generalized Quantifiers on Dependent Types for Anaphora*
Justyna Grudzinska and Marek Zawadowski

10:30 Coffee break

(11:00 - 12:30) Session 2

11:00 *Monads as a Solution for Generalized Opacity*
Gianluca Giorgolo and Ash Asudeh

11:30 *The Phenogrammar of Coordination*
Chris Worth

12:00 *Natural Language Reasoning Using Proof-Assistant Technology: Rich Typing and Beyond*
Stergios Chatzikyriakidis and Zhaohui Luo

12:30 Lunch

(14:00 - 15:30) Session 3

14:00 *A Type-Driven Tensor-Based Semantics for CCG*
Jean Maillard, Stephen Clark and Edward Grefenstette

14:30 *From Natural Language to RDF Graphs with Pregroups*
Antonin Delpeuch and Anne Preller

15:00 *Incremental semantic scales by strings*
Tim Fernando

15:30 Coffee break

Sunday, 27 April 2014 (continued)

(16:00 - 17:30) Session 4

16:00 *A Probabilistic Rich Type Theory for Semantic Interpretation*
Robin Cooper, Simon Dobnik, Shalom Lappin and Staffan Larsson

16:30 *Probabilistic Type Theory for Incremental Dialogue Processing*
Julian Hough and Matthew Purver

17:00 *Propositions, Questions, and Adjectives: a rich type theoretic approach*
Jonathan Ginzburg, Robin Cooper and Tim Fernando

17:30 Concluding remarks