

IWCS2023

**Proceedings of the 4th Natural Logic Meets Machine  
Learning Workshop (NALOMA23)**

June 23, 2023

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## Preface

This volume consists of papers presented at the fourth workshop entitled NATural LOGic Meets MACHine Learning (NALOMA). The workshop was held physically at the 15th International Conference on Computational Semantics (IWCS) in 2023, in Nancy, France.

NALOMA aims to bridge the gap between machine learning/deep learning and symbolic/logic-based approaches to Natural Language Inference (NLI), and it is one of the only workshops organized to do so. The workshop also lays focus on theoretical notions of NLI which influence the way approaches to NLI can and should operate.

We thank everyone who submitted papers to the meeting, including the authors who submitted nonarchival extended abstracts that are not part of these proceedings. The meetings were enriched by the inspiring talks of our invited speakers: Claire Gardent and Johan Bos. We also thank all and everyone who served on the program committee (most served twice): Lasha Abziniadize, Katrin Erk, Hai Hu, Thomas Icard, Katerina Kalouli, Larry Moss, and Hitomi Yanaka. The meeting would not have been possible without the encouragement and organizational support that we received from the chairs of IWCS2023, Ellen Breitholtz and Maxime Amblard.

When people combine research communities, the intent is not merely to talk together but also to find joint intellectual projects. NALOMA's parents are logic and symbolic AI on one side, and machine learning on the other side. As we welcome NALOMA to its third year, we watch expectantly for those joint projects.

Stergios Chatzikyriakidis and Valeria de Paiva



## **Organizers:**

Stergios Chatzikyriakidis (co-Chair), University of Crete

Valeria de Paiva (co-Chair), Topos Institute

## **Program Committee:**

Aikaterini-Lida Kalouli, Ludwig Maximilian University of Munich

Lasha Abzianidze, Utrecht University

Katrin Erk, University of Texas at Austin

Hai Hu, Shanghai Jiao Tong University

Thomas Icard, Stanford University

Lawrence S. Moss, Indiana University

Hitomi Yanaka, University of Tokyo and Riken Institute

## **Invited Speakers:**

Claire Gardent, Director of Research (first class), CNRS, LORIA, Nancy

Johan Bos, Professor of Computational Linguistics, University of Groningen



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## Conference Program

*Invited Talk by Claire Gardent: "What kind of errors are made by neural generation models and why?"*

*Evaluating Large Language Models with NeuBAROCO: Syllogistic Reasoning Ability and Human-like Biases*

Risako Ando, Takanobu Morishita, Hirohiko Abe, Koji Mineshima and Mitsuhiro Okada

*SpaceNLI: Evaluating the Consistency of Predicting Inferences In Space*

Lasha Abzianidze, Joost Zwarts and Yoad Winter

*Does ChatGPT Resemble Humans in Processing Implicatures?*

Zhuang Qiu, Xufeng Duan and Zhenguang Cai

*Recurrent Neural Network CCG Parser*

Sora Tagami and Daisuke Bekki

*Gijs Wijnholds: "Assessing Monotonicity Reasoning in Dutch through Natural Language Inference"*

*Daiki Matsuoka, Daisuke Bekki and Hitomi Yanaka: "Analyzing Relative Tense in Japanese with Dependent Type Semantics"*

*Invited Talk by Johan Bos: "Semantic Parsing with Large Language Models" (Chair: Staffan Larsson)*

*TTR at the SPA: Relating type-theoretical semantics to neural semantic pointers*

Staffan Larsson, Robin Cooper, Jonathan Ginzburg and Andy Luecking

*Triadic temporal representations and deformations*

Tim Fernando

*Discourse Representation Structure Parsing for Chinese*

Chunliu Wang, Xiao Zhang and Johan Bos

