©2021 The Association for Computational Linguistics

Order copies of this and other ACL proceedings from:

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 978-1-955917-07-0
Introduction

This volume contains the papers presented at the CLASP Reasoning and Interaction conference (ReInAct 2021) at the Department of Philosophy, Linguistics and Theory of Science (FLoV), University of Gothenburg, held on October 4–6th, 2021.

ReInAct brings together researchers interested in computationally relevant approaches to reasoning and interaction in natural language, including machine learning, symbolic and experimental approaches, as well as combinations of these.

Papers were invited on topics in these and closely related areas, including (but not limited to) visual, dialogue and multi-modal inference systems; neurolinguistic and psycho-linguistic experimental approaches to reasoning and interaction; dialogue modelling and linguistic interaction; formal approaches to social meaning; statistical, machine learning and information theoretic approaches to reasoning and interaction; methodologies and practices for annotating dialogue and multi-modal datasets; formal aspects of reasoning and interaction; visual, dialogue and multi-modal generation; semantics and pragmatics of dialogue acts; multimodal and grounded approaches to computing meaning; semantics-pragmatics interface; applications of visual, dialogue and multi-modal system technology.

This conference aims to initiate a genuine discussion between these related areas and to examine different approaches and how these can inform each other. It features 3 invited talks by leading researchers, and 9 peer-reviewed papers.

We would like to thank all our contributors and programme committee members, with special thanks to CLASP for organising the hybrid conference and our sponsors SIGSEM http://sigsem.org, the ACL special interest group on semantics, and the Swedish Research Council for funding CLASP.

Christine Howes, Simon Dobnik, Ellen Breitholtz, and Stergios Chatzikyriakidis
Gothenburg
October 2021
Programme Committee:

Luciana Benotti, Universidad Nacional de Córdoba, Argentina
Christoph Benzmüller, Freie Universität Berlin
Jean-Philippe Bernardy, University of Gothenburg
Patrick Blackburn, University of Roskilde
Ellen Breitholtz, University of Gothenburg
Stergios Chatzikyriakidis, University of Gothenburg
Stephen Clark, Queen Mary University of London
Robin Cooper, University of Gothenburg
Simon Dobnik, University of Gothenburg
Philippe de Groote, Inria
Markus Egg, Humboldt University
Adam Ek, University of Gothenburg
Katrin Erk, University of Texas at Austin
Jonathan Ginzburg, Université Paris-Diderot
Dimitra Gkatzia, Edinburgh Napier University
Eleni Gregoromichelaki, University of Gothenburg
Julian Hough, Queen Mary University of London
Christine Howes, University of Gothenburg
Richard Johansson, Chalmers University of Technology
Ralf Klabunde, Ruhr-Universität Bochum
Nikhil Krishnaswamy, Colorado State University
Shalom Lappin, University of Gothenburg
Staffan Larsson, University of Gothenburg
Vladislav Maraev, University of Gothenburg
Ralf Klabunde, Ruhr-Universität Bochum
Elin McCready, Aoyama Gakuin University
Paul McKevitt, Ulster University
Louise McNally, Universitat Pompeu Fabra
Violaine Prince, University of Montpellier
Stephen Pulman, Oxford University
Matthew Purver, Queen Mary University of London
Christian Retoré, University of Montpellier
German Rigau, University of the Basque Country
Hannah Rohde, University of Edinburgh
Asad Sayeed, University of Gothenburg
Vidya Somashekarampa, University of Gothenburg
Tim Van de Cruys, University of Toulouse
Carl Vogel, Trinity College Dublin
Sina Zarrieß, Universität Bielefeld

Invited Speakers:

Verena Rieser, Heriot-Watt University, Edinburgh
Joyce Chai, University of Michigan
Riccardo Fusaroli, Aarhus University
Invited talk 1: Verena Rieser

Responsible Conversational AI: Trusted, Safe and Bias-free

With recent progress in deep learning, there has been an increased interest in learning dialogue systems from data, also known as “Conversational AI”. In this talk, I will focus on the task of response generation, for which I will highlight lessons learnt and ongoing challenges, such as reducing ‘hallucinations’ for task-based systems, safety critical issues for open-domain chat-bots, and the often overlooked problem of ‘good’ persona design. I will argue that we will need to solve these challenges to create trusted, safe and bias-free systems for end-user applications.

Invited talk 2: Joyce Chai

Language, Action, and Physical Causality

Language communication plays an important role in human learning and skill acquisition. With the emergence of a new generation of cognitive robots, it becomes increasingly important to empower these embodied agents with an ability to learn directly from human partners through language. One of the key challenges is to connect language with actions in the physical world, whether it is to perceive actions or to execute actions. While we humans develop an understanding of physical actions and their cause and effect to the physical world at a very young age, such understanding of physical causality is a major bottleneck in machine intelligence. In this talk, I will give a brief introduction to our recent work on grounding language to actions in the context of communicative task learning. I will highlight the important role of physical causality in this process and discuss key research challenges and opportunities.

Invited talk 3: Riccardo Fusaroli

Interactive linguistic alignment in perspective: How do we re-use each other’s language to understand each other, solve problem together and learn language

In this talk I will present an overview on interactive linguistic alignment, the tendency to re-use one’s interlocutor’s linguistic forms. From an early enthusiastic foray (Fusaroli et al 2012, Coming to terms), I will move onto the challenges of building standardised tools to analyse alignment (Duran et al 2019, ALIGN) and the overview that is emerging when applying these tools to a variety of domains: diverse conversational tasks, diverse languages, diverse language acquisition stages and clinical populations.
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental Graph-Based Semantics and Reasoning for Conversational AI</td>
<td>Angus Addlesee and Arash Eshghi</td>
<td>1</td>
</tr>
<tr>
<td>The Impact of Answers in Referential Visual Dialog</td>
<td>Mauricio Mazuecos, Patrick Blackburn and Luciana Benotti</td>
<td>8</td>
</tr>
<tr>
<td>Semantic Classification and Learning Using a Linear Transformation Model in a Probabilistic Type Theory with Records</td>
<td>Staffan Larsson and Jean-Philippe Bernardy</td>
<td>14</td>
</tr>
<tr>
<td>The Spoon Is in the Sink: Assisting Visually Impaired People in the Kitchen</td>
<td>Katie Baker, Amit Parekh, Adrien Fabre, Angus Addlesee, Ruben Kruiper and Oliver Lemon</td>
<td>32</td>
</tr>
<tr>
<td>Dogwhistles as Inferences in Interaction</td>
<td>Ellen Breitholtz and Robin Cooper</td>
<td>40</td>
</tr>
<tr>
<td>Decoupling Pragmatics: Discriminative Decoding for Referring Expression Generation</td>
<td>Simeon Schüz and Sina Zarrieß</td>
<td>47</td>
</tr>
<tr>
<td>Generating Justifications in a Spatial Question-Answering Dialogue System for a Blocks World</td>
<td>Georgiy Platonov, Benjamin Kane and Lenhart Schubert</td>
<td>53</td>
</tr>
</tbody>
</table>
Conference Program

Monday 4th October

14:30–15:00 Opening Remarks

15:00–16:00 Invited Talk: Verena Rieser

16:15–16:45 Incremental Graph-Based Semantics and Reasoning for Conversational AI
Angus Addlesee and Arash Eshghi

16:45 The Impact of Answers in Referential Visual Dialog
Mauricio Mazuecos, Patrick Blackburn and Luciana Benotti

Tuesday 5th October

10:30–11:15 Semantic Classification and Learning Using a Linear Transformation Model in a Probabilistic Type Theory with Records
Staffan Larsson and Jean-Philippe Bernardy

11:15–12:00 Communicative Grounding of Analogical Explanations in Dialogue: A Corpus Study of Conversational Management Acts and Statistical Sequence Models for Tutoring through Analogy
Jorge Del-Bosque-Trevino, Julian Hough and Matthew Purver

13:15–14:00 The Spoon Is in the Sink: Assisting Visually Impaired People in the Kitchen
Katie Baker, Amit Parekh, Adrien Fabre, Angus Addlesee, Ruben Kruiper and Oliver Lemon

14:00–14:45 Dogwhistles as Inferences in Interaction
Ellen Breitholtz and Robin Cooper

14:45–15:15 Decoupling Pragmatics: Discriminative Decoding for Referring Expression Generation
Simeon Schüz and Sina Zarrieß

15:30–16:30 Invited talk: Joyce Chai
Wednesday 6th October

10:00–11:00  Invited talk: Ricardo Fusaroli

11:15–11:45  Generating Justifications in a Spatial Question-Answering Dialogue System for a Blocks World
Georgiy Platonov, Benjamin Kane and Lenhart Schubert

Vladislav Maraev