

Proceedings of the 9th Workshop on
Natural Language Processing for Computer Assisted Language Learning
(NLP4CALL 2020)



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edited by

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Preface

The workshop series on Natural Language Processing (NLP) for Computer-Assisted Language Learning (NLP4CALL) is a meeting place for researchers working on the integration of Natural Language Processing and Speech Technologies in CALL systems and exploring the theoretical and methodological issues arising in this connection. The latter includes, among others, the integration of insights from Second Language Acquisition (SLA) research, and the promotion of “Computational SLA” through setting up Second Language research infrastructures.

The intersection of Natural Language Processing (or Language Technology / Computational Linguistics) and Speech Technology with Computer-Assisted Language Learning (CALL) brings “understanding” of language to CALL tools, thus making CALL intelligent. This fact has given the name for this area of research – Intelligent CALL, or for short, ICALL. As the definition suggests, apart from having excellent knowledge of Natural Language Processing and/or Speech Technology, ICALL researchers need good insights into second language acquisition theories and practices, as well as knowledge of second language pedagogy and didactics. This workshop therefore invites a wide range of ICALL-relevant research, including studies where NLP-enriched tools are used for testing SLA and pedagogical theories, and vice versa, where SLA theories, pedagogical practices or empirical data and modelled in ICALL tools. The NLP4CALL workshop series is aimed at bringing together competences from these areas for sharing experiences and brainstorming around the future of the field.

We invited submissions:

- that describe research directly aimed at ICALL
- that demonstrate actual or discuss the potential use of existing Language and Speech Technologies or resources for language learning
- that describe the ongoing development of resources and tools with potential usage in ICALL, either directly in interactive applications, or indirectly in materials, application, or curriculum development, e.g. learning material generation, assessment of learner texts and responses, individualized learning solutions, provision of feedback
- that discuss challenges and/or research agenda for ICALL
- that describe empirical studies on language learner data

This year a special focus was given to work done on second language vocabulary and grammar profiling, as well as the use of crowdsourcing for creating, collecting, and curating data in NLP projects. We encouraged paper presentations and software demonstrations describing the above-mentioned themes primarily, but not exclusively, for the Nordic languages.

A new feature in this year’s workshop is the special *research notes* session. This session included short talks about ongoing unfinished research that collaborating teams were eager to discuss with the community and get feedback. We tested this feature for the first time with an intention to evaluate its impact and utility for future uses. This time around, we did not circulate a separate call for papers/abstracts but selected for inclusion in the session the papers that were rejected but had at least one positive review. Additionally, we invited two moderators, **Torsten Zesch** and **Johannes Graÿn**, each of whom was also given the possibility to present ongoing research.

This year, we had the pleasure to welcome two invited speakers: Mark Brenchley (Cambridge Assessment English) and Magali Paquot (Université catholique de Louvain).

Dr **Mark Brenchley** is Senior Research Manager at Cambridge Assessment English. Mark manages research supporting the development and validation of Cambridge English products in the areas of speaking and writing, as well as vocabulary and grammar more broadly. He specialises in the application of corpus-based methodologies and is responsible for maintaining and developing the

company's internal corpus architecture, including the Cambridge Learner Corpus. His current work, in particular, focuses on the development and validation of auto-marking technologies.

In his talk, *What is an NLP NLP? Considerations from an L2 Assessment Perspective*, he offered a more philosophical perspective on the role of NLP in second language assessment, focusing on the question of what it might actually mean for something to be an "NLP NLP"; that is, a natural language processed, natural language profile. In general, he explored the relationship between NLP and L2 profiles with regard to the wider notion of validity as a key assessment concept.

Dr **Magali Paquot** is an FNRS research associate at the Centre for English Corpus Linguistics, UCLouvain. She specializes in the use of learner corpora to study key topics in SLA and is particularly interested in methodological issues. She is co-editor in chief of the *International Journal of Learner Corpus Research* and one of the founding members of the Learner Corpus Research Association.

In her talk, *Crowdsourcing as a means to democratize access to L2 enriched data: the case of L2 proficiency*, she reported on the first results of the Crowdsourcing Language Assessment Project (CLAP), which aims to investigate whether crowdsourcing can offer practical solutions to the time and cost difficulties often associated with foreign language proficiency assessment. More specifically, CLAP explores whether and how a crowd of people can be used to assess learner texts reliably and validly.

Previous workshops

This workshop follows a series of workshops on NLP4CALL organized by the NEALT Special Interest Group on Intelligent Computer-Assisted Language Learning (SIG-ICALL¹). The workshop series has previously been financed by the Center for Language Technology at the University of Gothenburg, the SweLL project², and the Swedish Research Council's conference grant. Currently the funding comes from Språkbanken Text³ and the L2 profiling project⁴.

Submissions to the nine workshop editions have targeted a wide range of languages, ranging from well-resourced languages (Chinese, German, English, French, Portuguese, Russian, Spanish) to lesser-resourced languages (Erzya, Arabic, Estonian, Irish, Komi-Zyrian, Meadow Mari, Saami, Udmurt, Võro). Among these, several Nordic languages have been targeted, namely Danish, Estonian, Finnish, Icelandic, Norwegian, Saami, Swedish and Võro. The wide scope of the workshop is also evident in the affiliations of the participating authors as illustrated in Table 1.

Country	2012-2020 (# speaker/co-author affiliations)
Algeria	1
Australia	2
Belgium	5
Canada	4
Denmark	3
Egypt	1
Estonia	3
Finland	9
France	9

¹ <https://spraakbanken.gu.se/en/research/themes/icall/sig-icall>

² <https://spraakbanken.gu.se/en/projects/swell>

³ <https://spraakbanken.gu.se>

⁴ <https://spraakbanken.gu.se/en/projects/l2profiles>

Germany	79
Iceland	4
Ireland	2
Japan	2
Lithuania	1
Netherlands	2
Norway	13
Portugal	5
Russia	10
Slovakia	1
Spain	3
Sweden	64
Switzerland	10
UK	2
US	7

Table 1. NLP4CALL speakers' and co-authors' affiliations, 2012-2020

The acceptance rate has varied between 50% and 77%, the average being 65% (see Table 2).

Although the acceptance rate is rather high, the reviewing process has always been very rigorous with two to three double-blind reviews per submission. This indicates that submissions to the workshop have usually been of high quality.

Workshop year	Submitted	Accepted	Acceptance rate
2012	12	8	67%
2013	8	4	50%
2014	13	10	77%
2015	9	6	67%
2016	14	10	72%
2017	13	7	54%
2018	16	11	69%
2019	16	10	63%
2020	7	4	57%

Table 2: Submissions and acceptance rates, 2012-2020

We would like to thank our Program Committee for providing detailed feedback for the reviewed papers:

- Lars Ahrenberg, Linköping University, Sweden
- David Alfter, University of Gothenburg, Sweden
- Claudia Borg, University of Malta, Malta
- António Branco, Universidade de Lisboa, Portugal
- Mark Brenchley, Cambridge Assessment English, UK
- Jill Burstein, Educational Testing Service, US
- Andrew Caines, University of Cambridge, UK
- Xiaobin Chen, Universität Tübingen, Germany
- Kordula de Kuthy, Universität Tübingen, Germany
- Simon Dobnik, University of Gothenburg, Sweden
- Thomas François, Université catholique de Louvain, Belgium
- Johannes Graën, University of Gothenburg, Sweden and Universitat Pompeu Fabra, Spain
- Andrea Horbach, University of Duisburg-Essen, Germany
- Herbert Lange, University of Gothenburg, Sweden and Chalmers Institute of Technology, Sweden

- Peter Ljunglöf, University of Gothenburg, Sweden and Chalmers Institute of Technology, Sweden
- Verena Lyding, EURAC research, Italy
- Beata Megyesi, Uppsala University, Sweden
- Detmar Meurers, Universität Tübingen, Germany
- Margot Mieskes, University of Applied Sciences Darmstadt, Germany
- Lionel Nicolas, EURAC research, Italy
- Ulrike Pado, Hochschule für Technik Stuttgart, Germany
- Magali Paquot, Université catholique de Louvain, Belgium
- Ildikó Pilán, Norwegian Computing Center, Norway
- Robert Reynolds, Brigham Young University, US
- Gerold Schneider, University of Zurich, Switzerland
- Egon Stemle, EURAC research, Italy
- Anaïs Tack, Université catholique de Louvain, Belgium and KU Leuven, Belgium
- Irina Temnikova, Mitra Translations, Bulgaria
- Francis M. Tyers, Indiana University Bloomington, US and Higher School of Economics Moscow, Russia
- Sowmya Vajjala, National Research Council, Canada
- Elena Volodina, University of Gothenburg, Sweden
- Zarah Weiss, Universität Tübingen, Germany
- Mats Wirén, Stockholm University, Sweden
- Torsten Zesch, University of Duisburg-Essen, Germany
- Ramon Ziai, Universität Tübingen, Germany
- Robert Östling, Stockholm University, Sweden

We intend to continue this workshop series, which so far has been the only ICALL-relevant recurring event based in the Nordic countries. Our intention is to co-locate the workshop series with the two major LT events in Scandinavia, SLTC (the Swedish Language Technology Conference) and NoDaLiDa (Nordic Conference on Computational Linguistics), thus making this workshop an annual event. Through this workshop, we intend to profile ICALL research in Nordic countries as well as beyond, and we aim at providing a dissemination venue for researchers active in this area.

Workshop website:

<https://spraakbanken.gu.se/en/research/themes/icall/nlp4call-workshop-series/nlp4call2020>

Workshop organizers

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