

# 5th Workshop on Natural Language Processing for Requirements Engineering (NLP4RE)

Fabiano Dalpiaz<sup>1</sup>, Davide Dell'Anna<sup>2</sup>, Sylwia Kopczyńska<sup>3</sup> and Lloyd Montgomery<sup>4</sup>

<sup>1</sup>*Utrecht University, The Netherlands*

<sup>2</sup>*Delft University of Technology, The Netherlands*

<sup>3</sup>*Poznan University of Technology, Poland*

<sup>4</sup>*University of Hamburg, Germany*

## 1. Introduction

Natural language processing (NLP) plays an important role in several areas of software engineering, including requirements engineering (RE). Requirements are often authored and communicated textually and with different degrees of formality, from structured (e.g., shall statements, user stories) to unstructured natural language. Moreover, in the last few years, the advent of massive and heterogeneous sources, such as tweets and app reviews, has attracted even more interest from the RE community, as demonstrated by the increasing number of scientific papers on this topic in conferences like ICSE, RE, and REFSQ.

The workshop on Natural Language Processing for Requirements Engineering (NLP4RE) was established in 2018 as a venue to foster communication between researchers and practitioners interested in the areas of RE and NLP. Through the previous four editions, the NLP4RE workshop has been constantly successful gathering at least 8 submissions and over 20 participants. This year, in 2022, the 5th edition was organized in Aston, Birmingham, The United Kingdom. As the previous editions, NLP4RE was co-located with the International Working Conference on Requirements Engineering: Foundation for Software Quality.

The workshop received five submissions. Each submission was independently reviewed by four program committee members, and, as a result, four of them were accepted. There was no single theme set for the workshop, and thus, the presentations of the accepted papers covered various topics related to NLP and RE. One concerned the detection of privacy requirements from user stories, another discussed the detection of ambiguities in requirements. The two other papers focused on automated requirements formalization using product design specification and supporting validation in RE with natural language generation, respectively.


*In: J. Fischbach, N. Condori-Fernández, J. Doerr, M. Ruiz, J.-P. Steghöfer, L. Pasquale, A. Zisman, R. Guizzardi, J. Horkoff, A. Perini, A. Susi, M. Daneva, A. Herrmann, K. Schneider, P. Mennig, F. Dalpiaz, D. Dell'Anna, S. Kopczyńska, L. Montgomery, A. G. Darby, and P. Sawyer (eds.): Joint Proceedings of REFSQ-2022 Workshops, Doctoral Symposium, and Poster & Tools Track, Birmingham, UK, 21-03-2022*

✉ f.dalpiaz@uu.nl (F. Dalpiaz); d.dellanna@tudelft.nl (D. Dell'Anna); sylwia.kopczynska@cs.put.poznan.pl (S. Kopczyńska); lloyd.montgomery@uni-hamburg.de (L. Montgomery)

🆔 0000-0003-4480-3887 (F. Dalpiaz); 0000-0002-1162-8341 (D. Dell'Anna); 0000-0002-9550-3334 (S. Kopczyńska); 0000-0002-8249-1418 (L. Montgomery)



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Due to the number of submissions, which might be the effect of the pandemic COVID-19, the organizers of NLP4RE and of another workshop–Requirements Engineering for Artificial Intelligence (RE4AI)–decided to join the two events into a one-day workshop. Therefore, during the workshop the participants had the opportunity to listen to six presentations of research works.

After the presentations of research papers, the participants of the workshop listened to the keynote given by Dr. Nicole Novielli on “On Designing SE-specific Sentiment Analysis Tools”. She raised several interesting and thought-provoking questions such as: Do you like your code? What kind of code makes developers happiest? What makes them angriest? Is it possible to monitor the mood of a large team of coders to determine when and where a codebase needs additional help? How do emotions act as a proxy for developers’ well-being and productivity? Next, she provided an overview of recent research about sentiment analysis in software engineering, open challenges, and empirically-based guidelines for safe (re)use of SE-specific tools to encourage the participants to discussions and designing the research to answer the initially formulated questions.

After the keynote, a working session was organized to encourage the collaboration between the participants and discuss open challenges as well as the ideas for future research.

## 2. Program Committee

We warmly thank all the reviewers of our Program Committee (PC), who helped in the selection of the papers by providing timely and accurate reviews. The PC members of NLP4RE’22 are:

- Han van der Aa, University of Mannheim, Germany
- Muhammad Abbas, RISE Research Institute, Sweden
- Sallam Abualhaija, University of Luxembourg, Luxembourg
- Chetan Arora, Deakin University, Australia
- Fatma Başak Aydemir, Boğaziçi University, Turkey
- Dan Berry, University of Waterloo, Canada
- Henning Femmer, Fachhochschule Südwestfalen, Germany
- Alessio Ferrari, CNR-ISTI, Italy
- Xavier Franch, Universitat Politècnica de Catalunya, Spain
- Julian Frattini, Blekinge Institute of Technology, Sweden
- Davide Fucci, Blekinge Institute of Technology, Sweden
- Sepideh Ghanavati, University of Maine, USA
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- Emitzá Guzmán, Vrije Universiteit Amsterdam, The Netherlands
- Eduard Groen, Fraunhofer IESE, Germany
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- Clara Lüders, University of Hamburg, Germany
- Luisa Mich, University of Trento, Italy
- Nan Niu, University of Cincinnati, USA

- Barbara Paech, Universität Heidelberg, Germany
- Mehrdad Sabetzadeh, University of Ottawa, Canada
- Damiano Torre, University of Central Texas, USA
- Michael Unterkalmsteiner, Blekinge Institute of Technology, Sweden
- Andreas Vogelsang, University of Cologne, Germany
- Liping Zhao, University of Manchester, UK