Message from Program Chairs
NLBSE 2023

Welcome to the 2nd edition of the International Workshop on Natural Language-Based Software Engineering (NLBSE). The potential of Natural Language Processing (NLP) and Natural Language Generation (NLG) to support developers and engineers in a wide number of software engineering-related tasks (e.g., requirements engineering, extraction of knowledge and patterns from the software artifacts, summarization and prioritization of development and maintenance activities, etc.) is increasingly evident. Furthermore, the current availability of libraries (e.g., NLTK, CoreNLP, and fasttext) and models (e.g., BERT) that allow efficiently and easily dealing with low-level aspects of natural language processing and representation, pushed more and more researchers to closely work with industry to attempt to solve software engineers' real-world problems.

A. NLBSE Relevant Topics

Leveraging NLP in Software Engineering. Software artifacts written in natural language (e.g., requirements, design documents, user manuals, use case scenarios, bug reports, etc.), together with the source code comments and identifiers encode the domain and developers' knowledge. In this context, NLP approaches are mainly leveraged to gain this knowledge and support development and maintenance activities.

NLP for Requirements Engineering. Natural language processing supported requirements engineering is a well-established area of research and development that applies NLP technologies to requirements documents or artifacts for supporting analysts in requirements elicitation, analysis, specification, modeling, verification, and validation processes.

Application of NLP to software debug and repair. Natural language processing can be used to parse diagnostic messages and logs to predict certain bugs or flaws or to detect inconsistencies between source code and documentation. We are interested in NLP solutions and techniques whose outputs can help the software evaluation and validation processes.

Generation of software artifacts by applying NLP techniques. Natural language processing (NLP) techniques offer potential advantages to improve the quality of software documentation. In this context, NLP showed potential in a variety of directions. As relevant examples, in the last decades, researchers proposed many NLP-based approaches for automatically generating test cases and code comments.

NLP-based tools and datasets for SE. As mentioned in recent literature, only a minority of NLBSE-related tools and datasets presented in scientific papers are actually available for download. We want to particularly encourage workshop participants to share their tools and datasets and make them available to the community.

Application of NLP in industrial practice and classrooms. We have begun to see the adoption of NLP techniques in industrial settings. We would like to explore where NLP can and should be making an impact. Similarly, we would like to explore the practicality of teaching NLP as part of the software engineering or computer science curriculum.

B. What to Expect from the 2nd Edition of NLBSE

The 2nd edition of NLBSE is a one-day workshop co-located with the 45th International Conference on Software Engineering (ICSE 2023) which takes place in Melbourne, Australia in May 2023. The workshop program contains two keynote talks by **David Lo**, full professor at Singapore Management University, and **Albert Ziegler**, staff ML engineer at GitHub Next to stimulate discussions about automated bug management and application of large language models. NLBSE 2023 also hosts two tool competitions on issue report and code comment classification. The workshop received a total of 8 submissions (3 full and 5 short papers) of which 7 have been accepted for presentation at the workshop. Moreover, 6 tools participated in the NLBSE tool competitions, 5 of which were accepted.

We thank all the authors and attendees for their contributions and active participation in NLBSE 2023. We thank the distinguished invited speakers Dr. Prof. David Lo and Dr. Albert Ziegler for sharing with the NLBSE community their cutting-edge research and valuable insights. We are grateful to the members of the Program and Organization Committees for their effort in making the workshop possible, and to the student volunteers for their sustained support.

Last but not least, thanks to the ICSE Workshop Chairs for guiding and supporting us in the organization of the workshop, too.

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