## Proceedings of the

## 22nd Belgium-Netherlands Software Evolution Workshop

# **BENEVOL 2023**

November 27–28, 2023 Nijmegen, Netherlands

Edited by

Fernanda Madeiral and Ayushi Rastogi

Supported by

TNO ESI, VERSEN, NWO, SECO-ASSIST, Université de Mons, Institute for Computing and Information Sciences-Radboud University

### **Message from the Chairs**

The 22nd Belgium-Netherlands Software Evolution Workshop (BENEVOL 2023) was held in Nijmegen, Netherlands, on November 27–28, 2023.

BENEVOL 2023 invited submissions of technical papers and presentation abstracts. Technical papers concern novel results in the early stages of research and are to be included in the proceedings if the authors want to. On the other hand, presentation abstracts are short texts that were only reviewed for relevance and can have already been published, so they are not included in the proceedings. BENEVOL 2023 received 26 submissions: 10 technical papers and 16 presentation abstracts. All submissions were reviewed by three program committee members. Nine technical papers were accepted (out of 10 submissions), and 17 submissions were accepted as presentation abstracts (including the one not accepted as a technical paper). The proceedings include 7 technical papers.

The accepted submissions represent a wide range of topics related to software evolution, including human aspects, software sustainability, software testing, software security, code analysis, repository mining, software ecosystems, and software architecture.

In addition to the accepted presentations, we were happy to have three invited keynote speakers at the workshop. Nicole Novielli (University of Bari, Italy) gave the keynote on "Emotions and Perceived Productivity of Software Developers." Fernando Castor (University of Twente, Netherlands) presented "Energy and Performance: A (sometimes) synergistic relationship," and Tom Mens (University of Mons, Belgium) discussed "How to be(come) a successful PhD student – for dummies".

On behalf of the organizing committee, we would like to thank all community members who have contributed to making BENEVOL 2023 a success. A special thanks to the authors for submitting and presenting their work, the keynote speakers for sharing their knowledge and experiences during the workshop, the program committee members for their time and care in reviewing the submissions, and the sponsors for providing resources for making the workshop possible.

Fernanda Madeiral and Ayushi Rastogi Program Co-chairs

Copyright 2023 for this preface by its authors.

Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0)

# **Organizing Committee**

#### **General Chair**

Mairieli Wessel, Radboud University, Netherlands

#### **Program Co-chairs**

Ayushi Rastogi, *University of Groningen, Netherlands* Fernanda Madeiral, *Vrije Universiteit Amsterdam, Netherlands* 

#### **Steering Committee Chair**

Tom Mens, University of Mons, Belgium

### **Program Committee**

Ana-Maria Oprescu, University of Amsterdam, Netherlands

Andrea Capiluppi, University of Groningen, Netherlands

Anne Etien, University of Lille, France

Bin Lin, Radboud University, Netherlands

Cezar Sas, University of Groningen, Netherlands

Coen De Roover, Vrije Universiteit Brussel, Belgium

Emitzá Guzmán, Vrije Universiteit Amsterdam, Netherlands

Fernando Castor, University of Twente, Netherlands

Gemma Catolino, Jheronimus Academy of Data Science, Netherlands

June Sallou, Delft University of Technology, Netherlands

Katja Tuma, Vrije Universiteit Amsterdam, Netherlands

Luís Cruz, Delft University of Technology, Netherlands

Michel Chaudron, Eindhoven University of Technology, Netherlands

Mike Papadakis, University of Luxembourg, Luxembourg

Serge Demeyer, University of Antwerp, Belgium

Slinger Jansen, Utrecht University, Netherlands

Stefano Zacchiroli, Télécom Paris, Polytechnic Institute of Paris, France

Tegawendé F. Bissyandé, University of Luxembourg, Luxembourg

Thomas Durieux, Delft University of Technology, Netherlands

Tom Mens, University of Mons, Belgium