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## Reproducible Research in Pattern Recognition: Third International Workshop, RRPR 2021

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## Preface

This volume contains the original contributions presented during the third edition of the Workshop on Reproducible Research in Pattern Recognition which was held online on January 11, 2021 as a satellite workshop of ICPR. Following the two previous editions, this event continues to cover advances in platforms on reproducibility and new reproducible research results, which were covered by regular or companion short papers. Despite the global health crisis, the workshop was a success thanks to extended deadlines, which allowed authors more time to prepare their contributions.

The growing success of this event is evidenced by the larger number of authors registered for this workshop (60 authors from 10 different countries), corresponding to an increase of 57%. The total number of submitted papers was also increased, in this case by 28% (18 papers) compared to the previous edition. Each contribution was reviewed by three to four reviewers (for the regular papers) or by two reviewers (for the short papers, which we also call ICPR *companion papers*). The online-only audience (due to the pandemic) ranged from 25 to 30 attendees in each session.

The thirteen accepted papers were organized into three main categories. The first contributions focused on reproducible research frameworks. One paper introduced the *ReproducedPapers.org* platform which opens new ways to share and validate reproducible research. This was complemented by a second contribution focused on the evaluation of reproducibility, including a survey of recommendations. A final article in this category introduced the *torchdistill* framework about knowledge distillation in the context of reproducible deep learning research. The second category of contributions focused on reproducible research results and addressed different topics ranging from intrusion detection, emotion recognition algorithms, and biological structure modeling using tree defect analysis and vesselness filters. All of these contributing papers included source code or online demonstrations, which allow users to reproduce results easily by themselves. The last category included ICPR companion papers describing implementation and details that are an absolute requirement for reproducibility. This set of papers covered several topics such as 3D volume segmentation or properly deploying neural networks. Some of these short papers were awarded the *Reproduced Label in Pattern Recognition*. Videos of the pre-recorded presentations remain available on the workshop's website: <https://rrpr2020.sciencesconf.org>

In this third edition, we were glad to invite Roberto Di Cosmo to present the *Software Heritage* project, which aims to establish a perpetual universal archive of software source code. Such an initiative is closely related to reproducibility, given that it ensures the availability of the source code in the long term and keeps important metadata. A second recent initiative in the Computer Graphics domain was presented by Nicolas Bonneel on *Code Replicability*. The evaluation of code replicability in computer graphics was presented along with <http://replicability.graphics>, the new platform they propose that encourages code sharing in this domain.

We thank the two invited speakers for the high quality of their presentations and the meaningful discussions with the attendees.

Finally, we would like to thank all researchers who submitted contributions to RRPR and also the reviewers in the scientific committee. We also address a special thank to the IAPR organizers, who have given their support once again to RRPR with the official IAPR's endorsement. We also warmly thank the ICPR's general chairs with Rita Cucchiara, Alberto Del Bimbo, and Stan Sclaroff. And the workshop chairs with Giovanni Maria Farinella and Tao Mei who allowed us to handle these special post-proceedings in parallel to the other several workshops in the main conference. The edition of these post-proceedings was also made easier with the *EasyChair* platform and the reactivity from Alfred Hoffman and his successor at Springer-Nature, Ronan Nugent. Finally, we also thank again Audrey Bichet from the MMI department of the IUT of Saint-Dié-des-Vosges who made the nice poster of this third RRPR edition.

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