

Preface

This volume contains the Proceedings of the Second International Conference on Medical Imaging with Deep Learning – MIDL 2019. The conference was organized jointly by Imperial College London, UK and King’s College London, UK, with a team of program chairs from University of Copenhagen/Technical University of Denmark, Denmark, ETH Zürich, Switzerland, Istanbul Technical University, Turkey, and Vanderbilt University, USA. The conference was held between July 8 and 10, 2019, at Imperial College’s South Kensington Campus in London, UK.

MIDL 2019 attracted world-class researchers, scientists, engineers, as well as clinicians, who are keen on developing novel algorithms to solve medical imaging problems using deep learning techniques. The conference had two submission tracks: *full paper* and *extended abstract*. Through the OpenReview system, 117 full paper and 158 extended abstract submissions were received. For both tracks, the review process was single blind by default but the authors were also given the option to keep their identities anonymous. All submitted papers were on display at the OpenReview system from the time of their submission. All reviews and rebuttals were made publicly available after the decision process. Authors were however given the option of removing rejected submissions from the system.

For the full paper track, the review process was initiated by the Program Chairs (PC), and was handled by one primary Area Chair (AC) for each paper. The AC assigned exactly three expert reviewers, whose identities were kept anonymous. Area chairs wrote an additional report based on the submission, the anonymous reviews and the rebuttals. Submissions that were proposed to be accepted by all the reviewers and area chairs were accepted without further discussion by the PC. There were 31 such *early accepted* submissions (26.5% of all submissions). Likewise, submissions that were proposed to be rejected by all the reviewers and area chairs were rejected without further discussion by the PC. There were 33 such *early rejected* submissions (28.2% of all submissions). The remaining 53 articles were further discussed in a PC meeting that included the program chairs as well as the conference chairs. As a result of this meeting, out of these 53 discussed papers, 16 submissions were accepted and 37 were rejected. The decisions were based on careful examination of the submission, AC and reviewer comments and the rebuttals. The final acceptance rate of the full paper track was 40.2%. Among the 47 accepted full paper articles, 19 were selected as oral presentations (16.2% of all submissions), based on reviewer and AC proposals, and 28 for poster presentations.

Acknowledging the benefits of sharing novel ideas at their infancy, at MIDL 2019, extended abstract submissions were reviewed with a more lightweight process by exactly two reviewers, whose identities were kept anonymous. The focus of the review was put on the potential for encouraging constructive and thought-provoking discussions at the conference. The acceptance rate for the extended abstract track was kept higher than for the full papers to encourage a wide representation of the field. All submissions proposed to be accepted based on the average score of the reviewers weighted by reviewer confidence were thus accepted. Among the 158 submitted abstracts, 105 abstracts were accepted to be presented as posters at the conference (66.5% acceptance rate). These

proceedings only contain the accepted full paper submissions, the extended abstracts can be found in the OpenReview system or in the corresponding arXiv compendium.

The articles in these proceedings are presented in alphabetical order by first author name. The papers comprise of a wide range of topics including new deep learning architectures, loss functions, geometric learning, domain adaptation, transfer learning, and applications to lesion segmentation, brain imaging, cardiac imaging, neurodegenerative diseases and image reconstruction.

The PC and organizing chairs would like to thank the OpenReview staff for their support in hosting the submission site and PMLR staff for their support in finalizing these proceedings.

Most importantly, we would like to thank our Area Chairs, and Reviewers for their hard work in preparing and helping us shape the final technical program of MIDL 2019. The conference and the current proceedings are a result of their work.

Finally, we would like to thank all our sponsors for the financial support, which made the MIDL 2019 conference possible. We look forward to seeing you in Montreal, Canada, in 2020 for the next edition of MIDL!

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