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Medical Image Understanding and Analysis


24th Annual Conference, MIUA 2020
Oxford, UK, July 15-17, 2020
Proceedings


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Preface

We are very pleased to present the conference proceedings for the 24th Conference on Medical Image Understanding and Analysis (MIUA 2020), a UK-based international conference for the communication of image processing and analysis research and its application to biomedical imaging and biomedicine. The conference was supposed to be held at the St Anne's College, July 15–17 2020, in Oxford, UK, however due the COVID-19 pandemic the conference was, for the first time ever, organized as a fully virtual event. The virtual meeting was held on the same dates as originally planned, and featured pre-recorded presentations from the authors of all accepted papers. The conference also featured a workshop on medical image analysis using the latest MATLAB Deep Learning tools, organized jointly with MathWorks.

This year's edition was organized at the University of Oxford by academic members from the Medical Sciences Division: Nuffield Department of Clinical Neurosciences (<https://www.ndcn.ox.ac.uk/>); the Big Data Institute (<https://www.bdi.ox.ac.uk/>); and the Mathematical, Physical and Life Sciences Division: Institute of Biomedical Engineering (<http://www.ibme.ox.ac.uk/>); representing Oxford's core strategic partners in medical imaging research.

The conference was organized in partnership with Springer (www.springer.com), and with sponsorship received from MathWorks (<https://uk.mathworks.com/>), Brainomix (<https://www.brainomix.com/>), and the National Consortium of Intelligent Medical Imaging (<https://www.medsci.ox.ac.uk/research/networks/national-consortium-of-intelligent-medical-imaging>).

The diverse range of topics covered in these proceedings reflects the growth in development and application of biomedical imaging. The conference proceedings feature the most recent work in the field of: (i) image segmentation, (ii) image registration, reconstruction, and enhancement, (iii) radiomics, predictive models, and quantitative imaging biomarkers, (iv) ocular imaging analysis, and (v) biomedical simulation and modelling.

Despite growing concerns about the COVID-19 pandemic, this year's edition of MIUA received a large number of high-quality submissions making the review process particularly competitive. In total, 72 submissions were submitted to the Conference Management Toolkit (CMT), and after an initial quality check performed by the Program Committee, 70 technical papers progressed to the peer-review process completed by the Scientific Review Committee consisting of 79 reviewers. To keep the consistency and quality of the reviews for MIUA 2020, the majority of the reviewers was selected from (i) a pool of previous MIUA conference reviewers, and (ii) authors and co-authors of papers of past series of MIUA conferences.

Each of the submissions was reviewed in a double-blind manner by at least three members of the Scientific Review Committee. Based on their recommendations, a ranking was created and the best 34 papers (48%) were accepted to be presented at the

conference. Furthermore, the papers included in the proceedings were revised by the authors following feedback received from the reviewers.

Submissions were received from 84 different institutes from 23 countries across 5 continents, including the UK (40), Italy (8), Germany (7), USA (4), Denmark (3), Turkey (3), India (2), Switzerland (2), and one each from Belgium, Brazil, Canada, China, Finland, Iran, Japan, Lebanon, Mexico, the Netherlands, New Zealand, Pakistan, Portugal, Russia, and Spain.

We thank all members of the MIUA 2020 Organizing, Steering, and Scientific Review Committees. In particular, we wish to thank all who contributed greatly to the success of MIUA 2020: the authors for submitting their work, the reviewers for insightful comments improving the quality of the proceedings, the sponsors for financial support, and all participants in the first-ever virtual MIUA conference.

We also thank our invited keynote speakers Prof. Julia A. Schnabel, Prof. Fergus Gleeson, and Prof. Michael Bronstein for sharing their success, knowledge, and experiences.

We are delighted to be organizing the 25th MIUA conference in Oxford next year, and we look forward to once again being able to offer this research platform to the medical image analysis community in Summer 2021!

July 2020

Bartłomiej W. Papież
Ana I. L. Namburete
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