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Cancer Prevention Through Early Detection

First International Workshop, CaPTion 2022
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Preface

CaPTion 2022, the 1st International Workshop on Cancer Prevention through early detecTion, was organized as a satellite event of the 25th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2022) in Singapore. The main idea of founding CaPTion was to create a new research interface where medical image analysis, machine learning, and clinical researchers could interact and address the challenges related to early cancer detection using computational methods.

Early cancer diagnosis and its treatment for the long-term survival of cancer patients have been a battle for decades. In 2020, 19.3 million cancer cases and almost 10 million deaths were reported, with lung (18%), colorectal (9.4%), liver (8.3%), stomach (7.7%), and female breast cancer (6.9%) being the leading causes of mortality. While computational methods in medical imaging have enabled the detection and assessment of cancerous tumors and assist in their treatment, early detection of cancer precursors opens an opportunity for early treatment and prevention. The workshop provided an opportunity to present research work in medical imaging around the central theme of early cancer detection. It strived to address the challenges that must be overcome to translate computational methods to clinical practice through well-designed, generalizable, interpretable, and clinically transferable methods. Through this new workshop, we aimed to identify a new ecosystem that would enable comprehensive method validation and reliability of methods, setting up a new gold standard for sample size and elaborating evaluation strategies to identify failure modes of methods when applied to real-world clinical environments.

The CaPTion 2022 proceedings contain 16 high-quality papers of 8 to 11 pages preselected through a rigorous peer review process (with an average of three reviews per paper). All submissions were peer-reviewed through a double-blind process by at least two members of the scientific review committee, comprising 21 experts in the field of medical imaging, especially within early cancer detection. The accepted manuscripts cover various medical image analysis methods and applications. In addition to the papers presented in this LNCS volume, the workshop hosted three keynote presentations from world-renowned experts: Fergus Gleeson (University of Oxford), Kristy K. Brock (University of Texas MD Anderson Cancer Center), and Michael Byrne (Vancouver General Hospital/University of British Columbia).

We wish to thank all the CaPTion 2022 authors for their participation and the members of the scientific review committee for their feedback and commitment to the workshop. We are very grateful to our sponsors: the NIHR Biomedical Research Centre, UK, and Satisfai Health Inc, Canada, for their valuable support.

The proceedings of the CaPTion workshop are published as a separate LNCS volume in conjunction with MICCAI 2022.

September 2022

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