Hand-crafted and deep radiomics for the management of advanced cancer stages

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STELLINGEN

Behorende bij het proefschift

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of advanced cancer stages

Simon Keek, 12 oktober 2023

1. *An advantage of radiomics over deep learning is its feasibility with smaller datasets, which is often the case for clinical studies* – This thesis

2. *Radiomics can provide information on a patient's prognosis that a doctor never could* – This thesis

3. *For radiomics to be clinically implemented, it needs data which is already produced in routine clinical practice* – This thesis

4. *Radiomics will never be feasible clinically without either a thorough investigation of the repeatability of features between scanners or a large-scale harmonization effort* – This thesis

5. *Application of prognostic models requires unambiguous definitions of predictors and outcomes and reproducible measurements using methods available in clinical practice* – Karel G M Moons et al., BMJ, 2009

6. *The need for replication of an important finding is a cornerstone of the scientific method and is accepted practice in all areas of science, including clinical trials.* – Royston & Altman, BMC Medical Research Methodology, 2013

7. *Good data management is not a goal in itself, but rather is the key conduit leading to knowledge discovery and innovation, and to subsequent data and knowledge integration and reuse by the community after the data publication process.* – Wilkinson et al., Nature, 2019

8. *In these studies, we have shown the potential of radiomics to be complementary to other clinical predictors, but also the need for future research mainly in the generalizability of the features from different scanners or different imaging protocols.* – This thesis

9. *Finally, from so little sleeping and so much reading, his brain dried up and he went completely out of his mind.* – Miguel de Cervantes Saavedra, Don Quixote

10. *Nor again is there anyone who loves or pursues or desires to obtain pain of itself, because it is pain, but because occasionally circumstances occur in which toil and pain can procure them some great pleasure.* – Marcus Tullius Cicero, De finibus bonorum et malorum