

Quantitative imaging and artificial intelligence in oncology

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Propositions accompanying the PhD-thesis

Quantitative Imaging and Artificial Intelligence Oncology

Ashish Kumar Jha

Tuesday, November 22nd 2022, 13:00 hours

1. Imaging is an integral part of disease management in oncology, helping manage the disease better (Chapter: 1). - A. K. Jha
2. Radiomics-based quantitative imaging has the potential to revolutionize medical imaging and support individualized cancer care (Chapter: 2, 3). - A. K. Jha
3. Stability of radiomic features is needed to be established before utilizing them as imaging biomarkers in the management of a patient in oncology (Chapter: 5). - A. K. Jha
4. The stable features chosen in our stability analysis demonstrated excellent predictive value in predicting 5-year overall survival in cervical cancer, which is suggestive of the significance of radiomic features in oncology. (Chapter: 5, 8). - A. K. Jha
5. Our suggested data integration for HIS subsystems that complies with FAIR data principles, specifically relying on domain semantic ontologies for terminology standardization, knowledge representation, and internal data linkage, will enhance graph machine learning and distributed machine learning in oncology. (Chapter: 7). - A. K. Jha
6. Imaging biomarker-based decision support systems presented in this thesis may be a game-changer in oncology. (Chapter: 9). - A. K. Jha
7. A computer would deserve to be called intelligent if it could deceive a human into believing that it was human. -Alan Turing
8. Machine intelligence is the last invention that humanity will ever need to make. — Nick Bostrom
9. Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks. -Stephen Hawking
10. The most important, the most fundamental and the deepest investigations are those that affect human life and activities most profoundly. Only those scientists who have laboured, not with the aim of producing this or that, but with the sole desire to advance knowledge ultimately prove to be the greatest benefactors of humanity. - C. V. Raman