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Developing the Quantitative Histopathology Image Ontology (QHIO): A case study using hot spot detection problem

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Abstract

Interoperability across data sets is a key challenge for quantitative histopathological imaging. There is a need for an ontology that can support effective merging of pathological image data with associated clinical and demographic data. To foster organized, cross-disciplinary, information-driven collaborations in the pathological imaging field, we propose to develop an ontology to represent imaging data and methods used in pathological imaging and analysis, and call it Quantitative Histopathological Imaging Ontology – QHIO. We apply QHIO to breast cancer hot-spot detection with the goal of enhancing reliability of detection by promoting the sharing of data between image analysts.

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