

ABSTRACT: We present a platform for semantic medical image annotation and retrieval. It leverages on the MEDICO ontology which covers formal background information from various biomedical ontologies such as the Foundational Model of Anatomy (FMA), terminologies like ICD10 and RadLex and covers various aspects of clinical procedures. This ontology is used during several steps of annotation and retrieval: We developed an ontology-driven metadata extractor for the medical image format DICOM. Its output contains, e.g., person name, age, image acquisition parameters, body region etc. (2) The output from (1) is used to simplify the manual annotation by providing intuitive visualizations and to provide a preselected subset of annotation concepts. Furthermore, the extracted metadata is linked together with anatomical annotations and clinical findings to generate a unified view on a patient's medical history. (3) On the search side we perform query expansion based on the structure of the medical ontologies. (4) Our ontology for clinical data management allows to link and combine patients, medical images and annotations together in a comprehensive result list. (5) The medical annotations are further extended by links to external sources like Wikipedia to provide additional information.