Detection of Fracture in Skull by Hit-or-Miss Transformation

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Abstract

This paper gives us an idea of the occurrence of a fracture in skull by applying hit-or-miss transformation on the images that are generated by X-ray computed tomography. X-ray Computed Tomography (CT) is a technology which generates tomographic (mainly horizontal) slices of any specific area of object under observation, by which we can look inside the object without the need of cutting it open. The algorithm is developed which takes the images of tomographic slices of cranial skull, applies hit-or-miss transformation, algorithm that is used to detect the shape of an object and determines whether the skull is ruptured. By collectively observing various image slices of the skull, the algorithm can highlight the location of the fracture, provided that sufficient information is available to it. Hit-or-miss transformation is a technique of Digital Image Morphology that is used to determine the shape of an object.

Keywords

Digital image processing, hit-or-miss transformation, computed tomography, skull fracture, image morphing, CT scan, digital image morphology, X-ray.