

Technology Licensing Opportunity

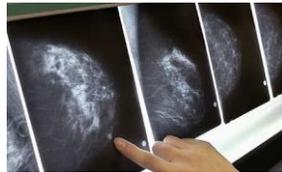
Non-Confidential Summary



AUTOMATED DETECTION OF ABNORMALITIES IN MAMMOGRAPHIC IMAGES ROI# 06-021

Opportunity:

Researchers at the University of Saskatchewan have created a software-based system that pre-screens mammogram images. This pre-screening prioritizes mammograms, reduces the frequency of diagnostic errors, and reduces inconsequential reading volume by radiologists.



Background:

Typical computer aided detection systems deal with the subtlety of cancer signs on images by marking all suspicious regions for radiologists to re-examine. A major challenge in the interpretation of mammograms is that only a small percentage of images show abnormalities, which increases the likelihood of false positive identifications. The consequence is that many patients undergo unnecessary procedures, creating patient anxiety and added costs to the health care system. It has been reported that 5-7% of women were recalled for further tests, although only 10% of those recalled were positive for cancer.

Invention:

The inventors developed a software-based system that processes digitized mammogram images by performing artifact removal, noise reduction, wavelet map decomposition, and generating scalar features from the wavelet maps. The software then employs the scalar features to classify the images by way of a modified naïve Bayesian classifier in a “concerted effort” configuration. The software operates on standard DIACOM medical images and provides a degree of confidence for each classified image. When tested on the Mammographic Images Analysis Society’s database (204 normal images & 79 images with a pathological feature), the software provided 100% sensitivity. Since pathologies are only present in a small percentage of mammograms, this software enables radiologists to identify which images should be accorded higher priority for examination and reduces oversights (human error) that might otherwise occur in the analysis of a large volume of images. This technology can be implemented on-site in an x-ray office, a clinic, or a hospital.

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Researcher profile:



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Patent Status:

International Patent Application no. WO2009073963
US Patent Application no. US2010310183

Development Stage:

Proof-of-concept completed

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