ScreenPoint’s Transpara™ Deep Learning Software Application Reads Mammograms as well as Experienced Radiologists

Study by Radboud University Medical Centre Being Presented at RSNA Compared Performance of Deep Learning, Artificial Intelligence Software to That of Radiologists

CHICAGO (PRWEB) November 27, 2017 -- Deep learning and artificial intelligence improves the efficiency and accuracy of reading mammograms, according to research presented, here at the upcoming 103rd Annual Radiological Society of North America (RSNA) meeting, November 26-December 1, 2017. (South Hall #3178). Three studies accepted for presentation at RSNA this demonstrate that the performance of Transpara™ deep learning system developed by ScreenPoint Medical BV (Nijmegen, The Netherlands) is approaching that of experienced breast radiologists.

The study “Detecting Breast Cancer in Mammography: How Close Are Computers to Radiologists?” (SSK02-02, Wednesday 10:30-12:00 PM, Room: E451A), will be presented by Alejandro Rodriguez-Ruiz during the Science Session with Keynote - Breast Imaging (Deep Learning, Quantitative Imaging and Big Data). In the study, researchers from Radboud University Medical Centre in Nijmegen, Netherlands, compared the performance of experienced radiologists to that of the deep learning computer detection system Transpara in detecting breast cancer on mammograms.

Researchers collected reader study data from multiple breast imaging centers across Europe to assess performance. In four different studies, more than 1,400 mammograms from three different vendors were retrospectively reviewed by groups of radiologists to measure their ability to detect breast cancer. The data included 336 exams with cancer, 430 with benign abnormalities, and 669 normal mammograms. In total, 24 radiologists participated in these studies. Results showed no significant difference between automated reading with the Transpara software and reading by the radiologists. In two studies the radiologists had a higher AUC performance while Transpara had a higher AUC in the two other studies.

In the session, “Development of Deep Learning Systems for Improving Breast Cancer Screening,” (SPSH40B, Wednesday 7:15-8:15 AM, Room: E450A), Prof. Nico Karssemeijer presents on how recent developments in machine learning offer unprecedented opportunities for researchers to develop fully automated systems for the reading of mammograms and breast tomosynthesis.

“The scope of these systems will be much wider than that of existing CAD systems for mammography. They will provide decision support to improve recall decisions and pre-screening of exams by computers will become a reality. This will lead to more efficient screening procedures where human readers rely on automation to select normal exams that they don't need to read. This will allow them to focus on making optimal decisions for women with potentially abnormal exams in which cancer is most likely,” said Prof. Nico Karssemeijer, PhD, CEO of ScreenPoint Medical.

The scientific exhibit, “Automated Pre-Selection of Mammograms without Abnormalities Using Deep learning” (BRS-TUB, Tuesday 12:45-1:15 PM), will be presented by Jonas Teuwen, MSc, PhD, at Breast Tuesday Poster Discussions at the Learning Center.

Exploiting Big Data, Deep Learning and the latest developments in Artificial Intelligence (AI), Transpara is based on innovative insights into how breast radiologists can best be supported to improve the efficiency and
accuracy of reading mammograms.

Utilizing state of the art image analysis and revolutionary deep learning technology, Transpara automatically identifies soft-tissue and calcification lesions and combines the findings of all available views into a single cancer suspiciousness score. While calcifications are marked as in traditional CAD systems, only a small number of soft-tissue lesion marks are shown and are proven to have extremely low false positive rates. However, readers can probe any suspicious image region for decision support to help determine whether further investigation is needed.

About ScreenPoint Medical BV
ScreenPoint Medical develops image analysis technology for automated reading of mammograms and digital breast tomosynthesis exams, exploiting Big Data, Deep Learning and the latest developments in Artificial Intelligence. ScreenPoint Medical was founded in 2014 by Nico Karssemeijer and Michael Brady, two experts in breast imaging, machine learning, computer vision, and computer-aided detection. The main office is in Nijmegen, The Netherlands.

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