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Dalhousie professor teams up with CIMTEC to make breast density measurement a reality

By stevenl
administrator

A Dalhousie professor, with help from technology found at the Centre for Imaging Technology Commercialization (CIMTEC), has developed a way to provide more quantitative measurement of identifying the risk that a woman has in developing breast cancer.

Mohamed Abdoell's is an associate professor in the diagnostic radiology department at Dalhousie University in Halifax. His method involves using a fully automated algorithm that processes images to generate a standardized, reliable measure of density.

Traditionally, radiologists have used breast density as one measure of the likelihood of a woman developing breast cancer. Women with breast tissue density measuring above 75 per cent have a four-to-six times greater chance of developing breast cancer.

"It's a flag," says Abdoell. "It's a way to triage women for appropriate follow-up imaging."

Until now, radiologists have estimated breast density using four broad categories (BI-RADS) relying on visual assessment of mammograms.

"They're generally pretty good at it," Abdoell said. "But a less subjective way to measure breast density would generate more accurate and reliable density measures. If we can provide a more quantitative measurement, it will be a real benefit."

In a unique nod to personalized medicine, women will be able to upload their mammogram images to the internet and the algorithm will give them a personalized breast density measure. Having access to this service is more profound than simply satisfying curiosity, Abdoell says. He points to the emerging consensus in the health sector that better health outcomes can be realized when patients are empowered with their own health information.

Densitas Inc. is the company Abdoell formed to commercialize his discovery. He has also discovered there is more to commercializing than simply having a good idea. So he turned to CIMTEC, the Centre for Imaging Technology Commercialization, for help.

In early testing, Densitas, as the algorithm is known, showed strong agreement with radiologists' density assessments of full-field digital mammography images.

CIMTEC has played an important role in evaluating the early prototype to validate those results and to develop an improved and more robust algorithm.

The Canadian medical imaging technology organization also worked with Densitas Inc. to determine a solution for seamless integration of the algorithm into clinical workflow and helped prepare the company for developing

new strategic partnerships. With CIMTEC's assistance, Abdoell estimates that Densitas could be commercially available by the end of 2013 or early 2014 and as a result, he believes working with CIMTEC has been invaluable.

"Finding such expertise under one roof has been critical," he said. "It would be virtually impossible for a lean start-up to go out and recruit this kind of expertise – it's tough enough generally, but it's even more difficult in the imaging world.

"One of the greatest benefits of working with CIMTEC is the continuity and coherence that comes from its ability to provide assistance along the entire continuum of commercialization; from product development and technical know-how to considering regulatory issues as part of the commercialization process.

"It's almost a one-stop shop. It's impossible to put a value on having access to that pool of skills in one place. I can't imagine being where we are now without CIMTEC."

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