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## Breast Density: New Software Developed by Spanish Researchers



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New software developed in Spain will help physicians assess breast cancer risk by quantifying breast density, a known risk factor for the disease.

Researchers from the Universitat Politècnica de València, in collaboration with the Instituto de Salud Carlos III and the Foundation for the Health and Biomedical Research of the Comunitat Valenciana (Fisabio) have developed DMScan, which takes images from mammogrammes to look at breast density.

Rafael Llobet, from the Computer Technology Institute at the Universitat Politècnica de València explained that the breast is made up of adipose tissue and fibroglandular tissue; the density is the proportion of the latter to the breast size. DMScan quantifies this value, thus distinguishing dense from fat tissue. It offers a more objective measurement than physicians can give from a visual inspection, he explained.

The software can work in both automatic and assisted mode. In assisted mode, users can adjust different parameters associated to the density calculation. Llobet noted that the combination of an expert radiologist and an assisted read-out provides the best information, but an automatic read-out will be very useful in providing a preliminary assessment.

DMScan works by using shape recognition, automatic learning and computer vision techniques. It also includes a statistical model created from a database of 650 mammogrammes, which allows it to classify new tests. It takes new mammogrammes and compares them to the images in the database, using the information to train the system as reference standards.

The researchers took into account the fact that breast density decreases with age and with the body mass index, two factors also related to the probability of having breast cancer.

More than 1,6 million new cases of breast cancer are diagnosed every year around the world. In Spain, there are more than 6.000 deaths every year, with 25,000 new diagnoses.

Image: Rafael Llobet (UPV) and Josefa Miranda (FISABIO)

Source: AlphaGalileo

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