

SESAME

Synchrotron-light for Experimental
Science and Applications in the
Middle East



Vi-SEEM

CCC / CCCSCMRR VI-SEEM 2nd Call application

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Outline:

- ☐ CCC In Brief
- ☐ CCCSCMRR
- ☐ Use case study
- ☐ Theoretical vs Practical
- ☐ Summary and the roadmap



CCC In Brief



- * Cancer Cell Classifications (CCC) .
- * Is a cancer screening, computer-aided detection (CAD) systems.
- * Mammography is generally accepted as the best available breast cancer screening method; however, some cancers detectable on mammography images are missed. Cancer Cell Classifications (CCC) systems for mammography are intended to reduce false negatives by marking suspicious areas of the mammograms for reviewers to consider.

- * This is the first software developed by Jordanian Assist. Prof. Mohammad Alfraheed ,Department of Computer and Information Technology , Faculty of Science ,Tafila Technical University.
- * And used by researcher Dr Sa'ed Hayajneh , radiologist at ministry of health ,Jordan for research purpose.

- * **Computers don't get fatigued.**
- * **Computers are consistent.**
- * **Computers don't get distracted.**
- * **Current processing speeds allow very complex analyses in a short amount of time.**
- * **First step - an adjunctive aid to the radiologist to help detect abnormalities on screening mammograms.**



Screening Challenge

complex image interpretation

short viewing time

extremely low incidence (3-10/1,000)



CCCSCMRR



OBJECTIVE

To assess the diagnostic performance of CCC for screening mammography and to compare it with virtual inspection.



Use case study



- * **Study Population :** Jordanian population ,consent were taken from the patient ,with hiding the personal information.
- * **Case Selection :** we select random cases for came for screening.
- * **CCC and Reading Environment :** CCC used in our study was designed to detect malignant masses and architectural distortions, and was trained with a set of digitized film mammograms.

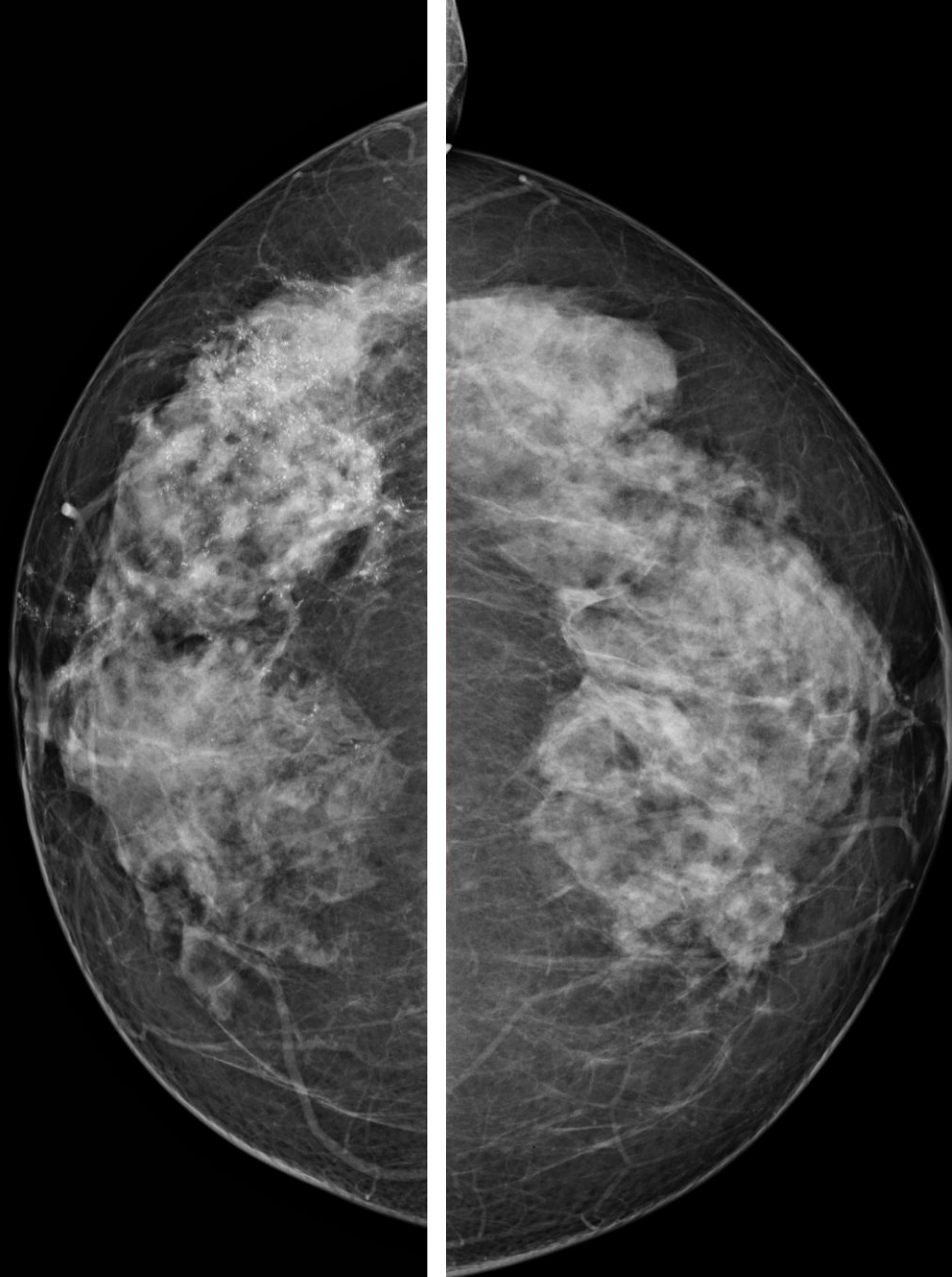


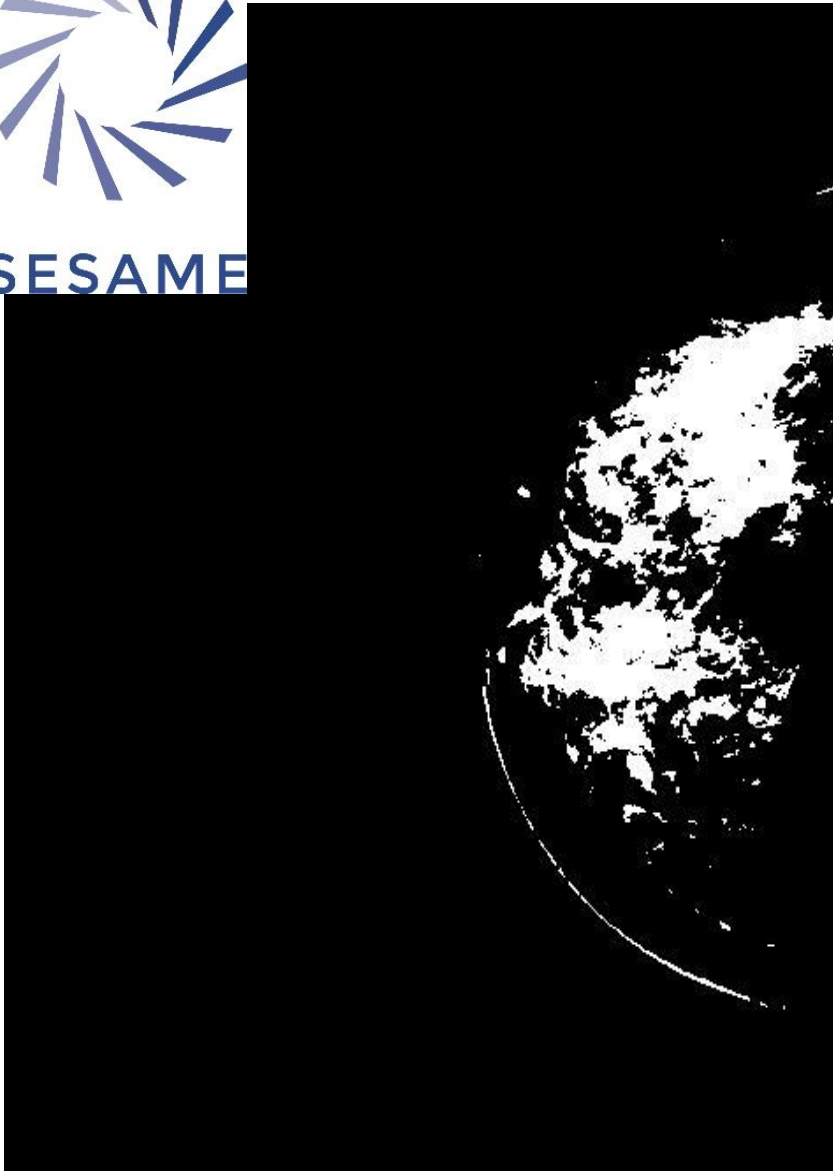
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- * This example is to detect and classify a suspicious breast mass region. A suspicious mass is automatically detected by CCC and queried by the observer.
- * In CCC, the mass region , selected ROIs are not subtracted while unsuspicious are ,to help us focusing in that ROI.





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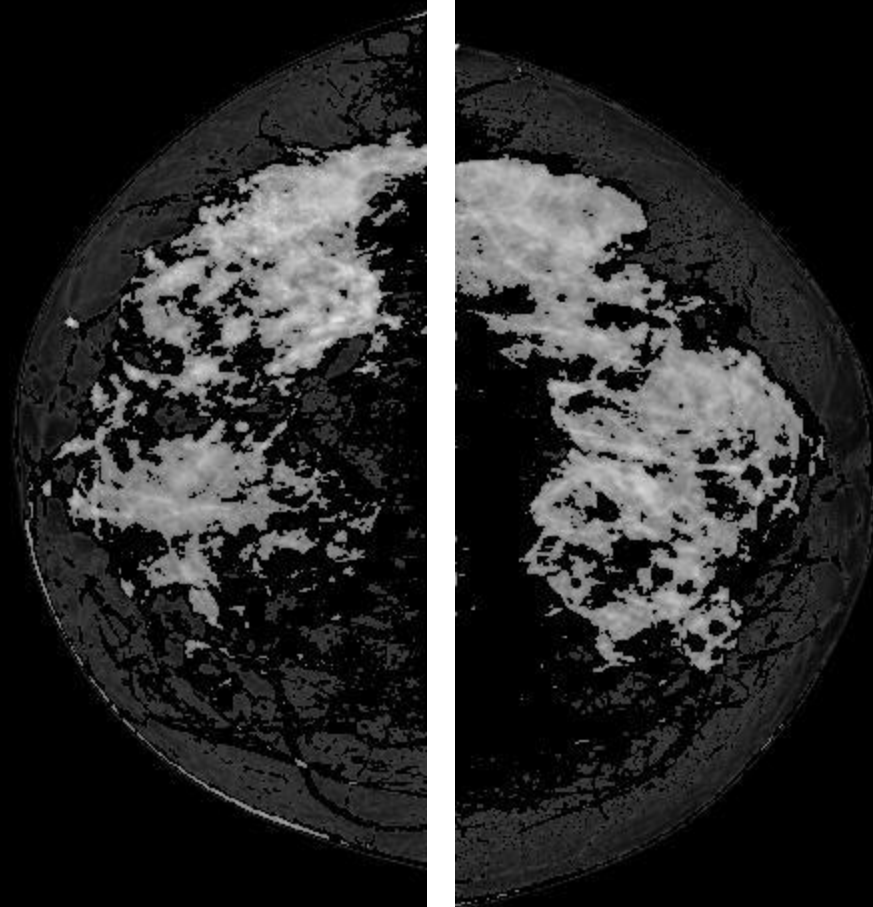


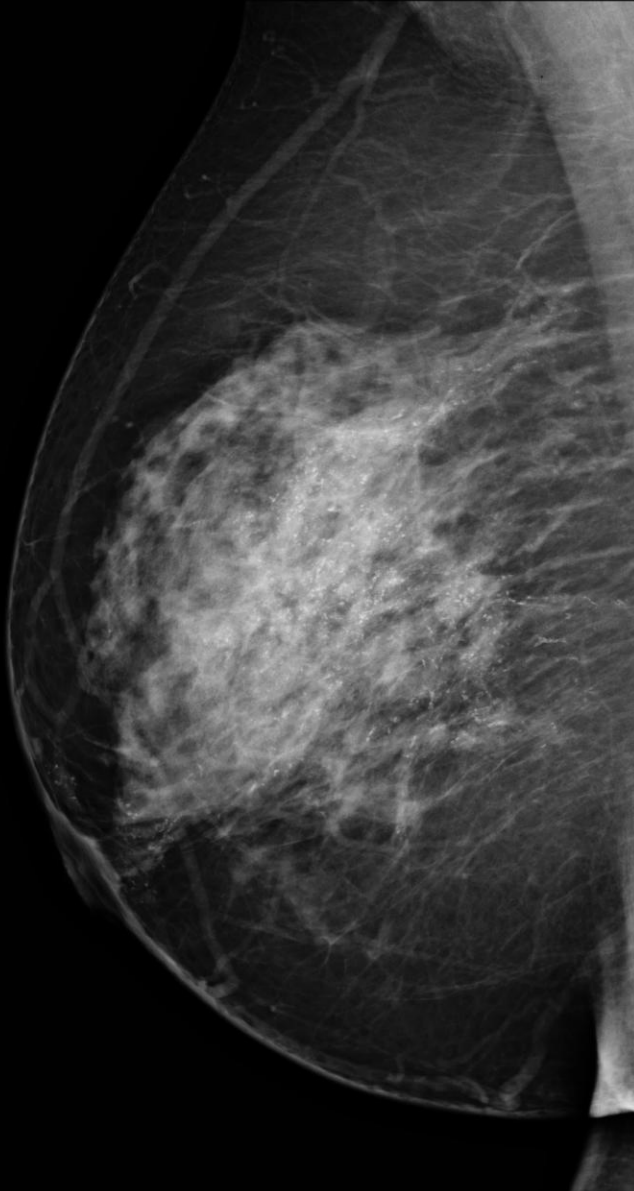
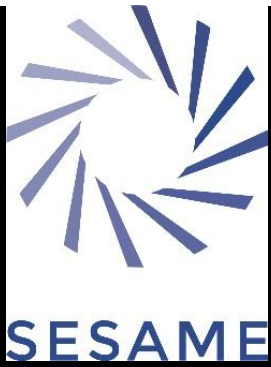


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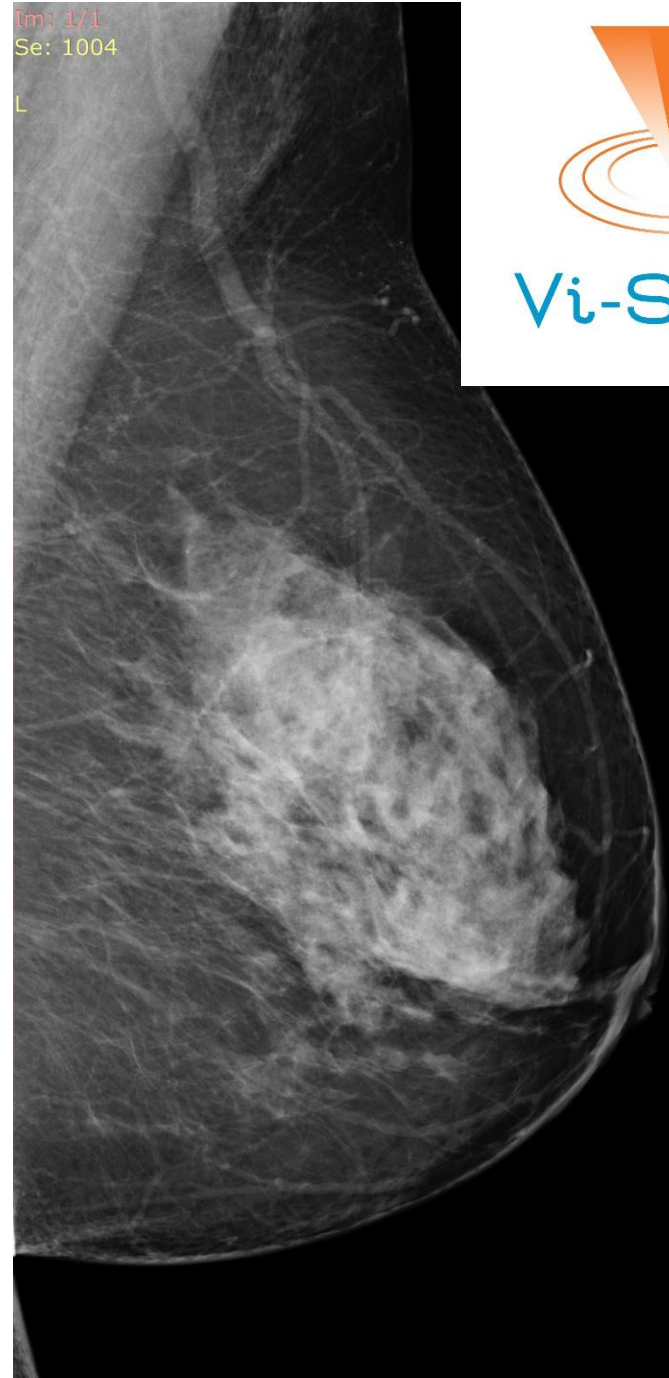


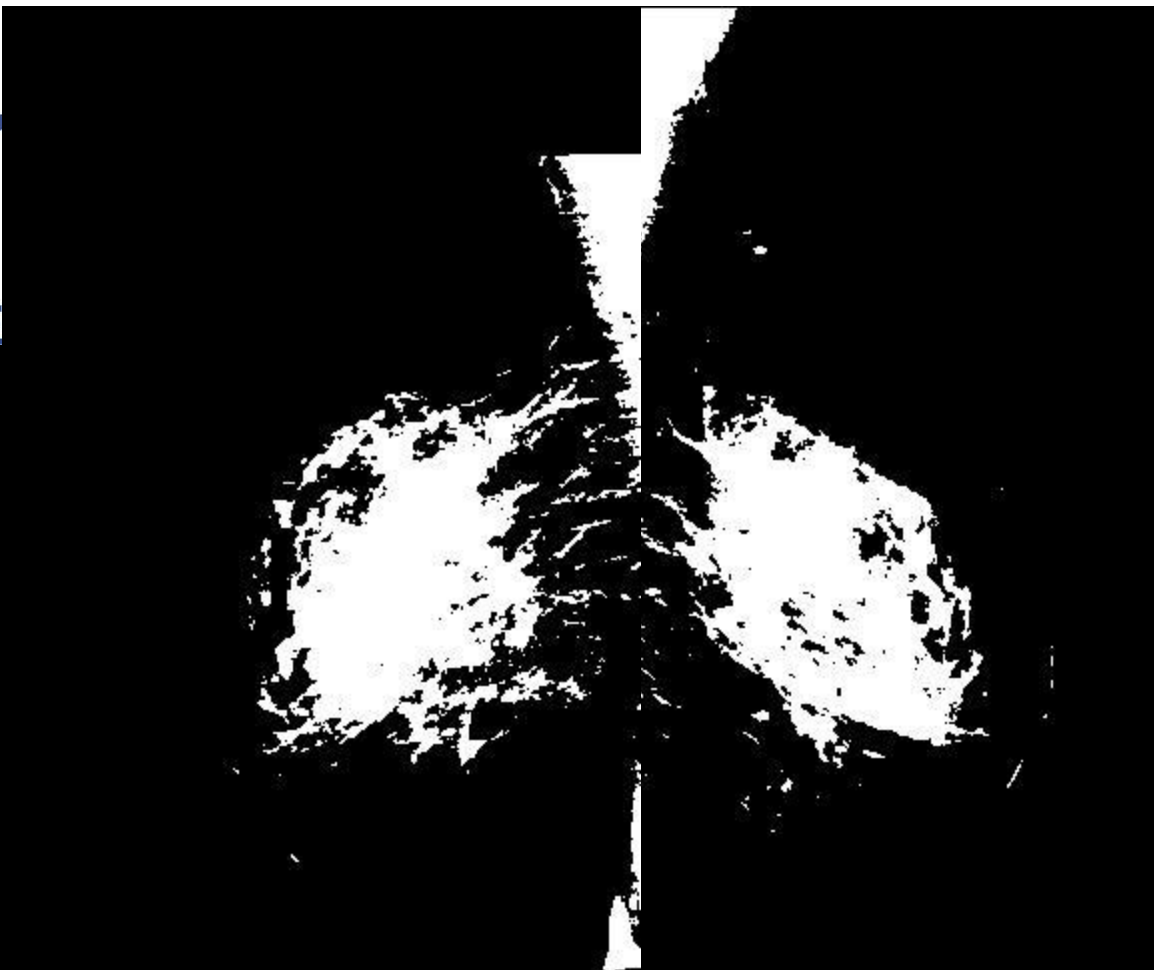
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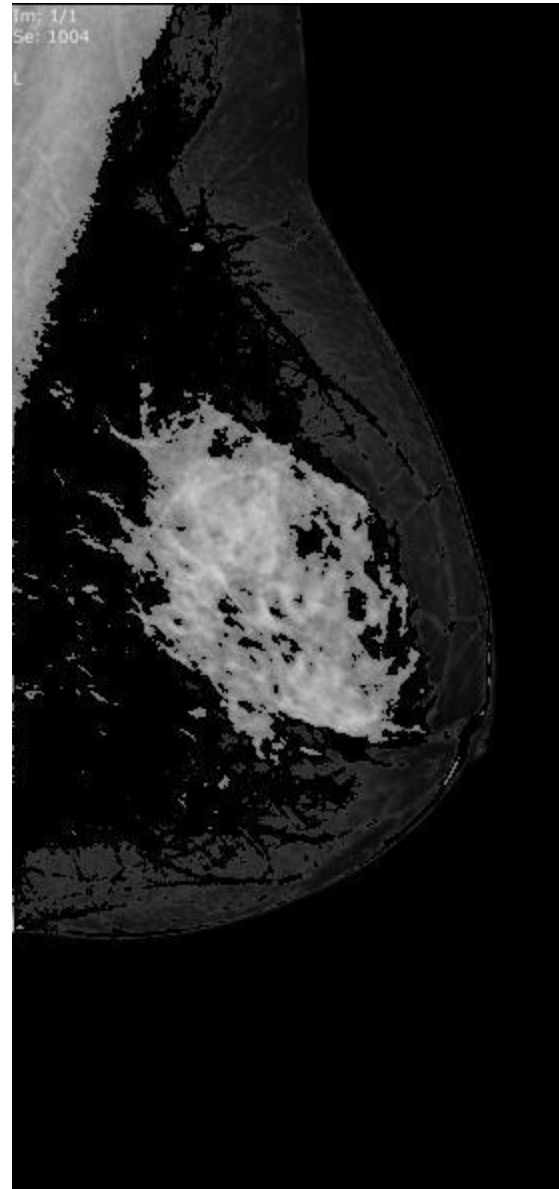
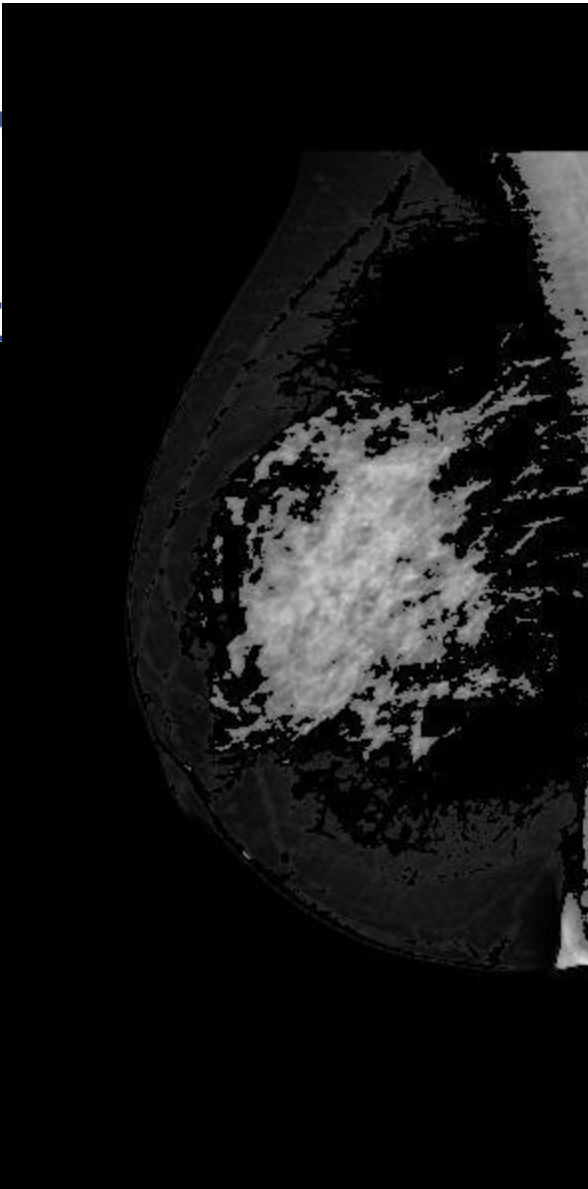
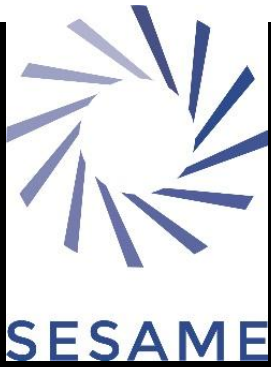




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CONCLUSION



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CCC still in the infancy of its full potential for applications to cancer cells lesions obtained with mammogram .

Content-based image retrieval is an alternative and complementary approach for image retrieval based on keywords and metadata. Initial results are not promising about using CCC as a diagnostic support tool, but with collaboration with SESAME and Dr m alfarahed in near future we hope to overcome the difficulties in this version .

In the future, it is we wish that CCC will be more advanced and promising incorporated into PACS .



Thanks

by: Dr. Sa'ed hayajneh

www.sesame.org.jo