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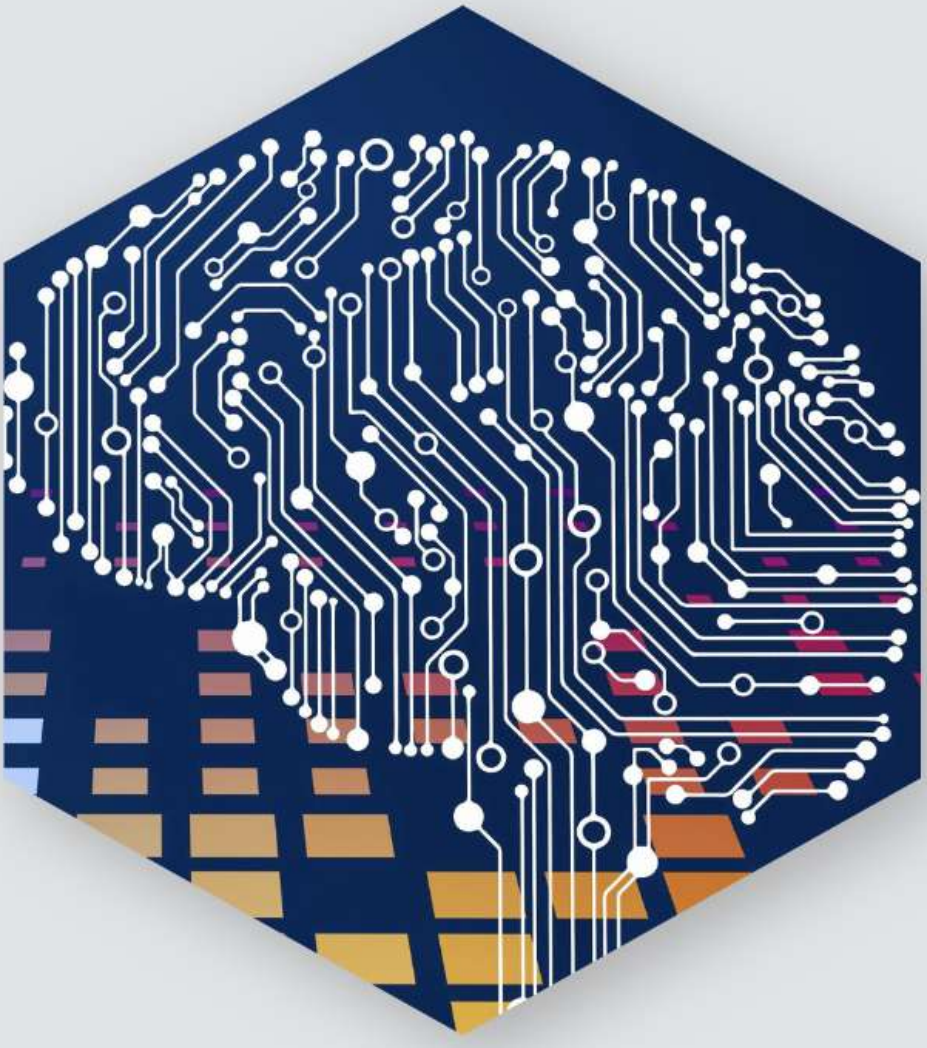

The Future of Artificial Intelligence
In Healthcare

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Overview

The medical industry is increasingly integrating AI technologies into daily life and business. AI can help doctors and nurses improve patient care, making diagnoses more accurate, treatments more effective and workplace operations more efficient. - Breast cancer is one of the most common causes of death among women. researchers have investigated using different image processing and classification algorithms to detect and diagnose breast cancer. But the disease remains one of the deadliest, affecting approximately one in six women at some point in their lives. Breast cancer is currently incurable.

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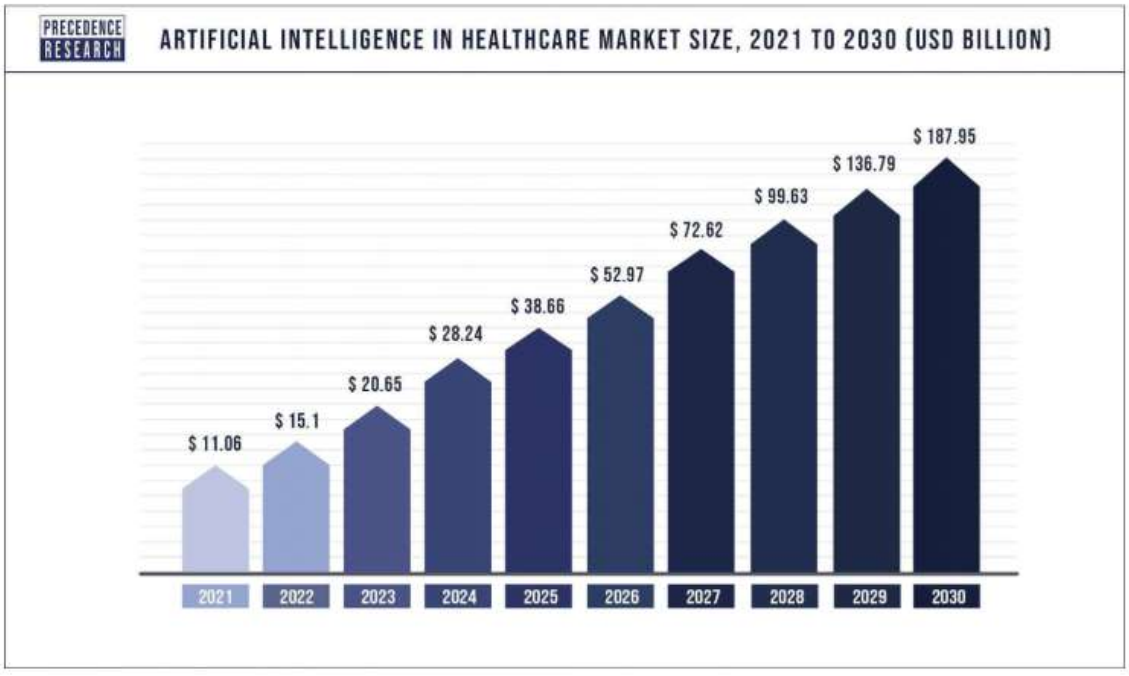
The Future of Artificial Intelligence in Healthcare

- Artificial Intelligence (AI) helps radiologists more accurately read breast cancer screening images through deep learning models.
- The model read and interpreted the findings of digital breast tomosynthesis (DBT) images, three-dimensional mammography that takes multiple pictures of the breast to detect possible cancers
- The time required by radiologists to read and interpret the findings was cut from over a minute to 30 seconds with the assistance of the AI.
- Such a decline in reading time means radiologists will be able to interpret more images in the same amount of time and diagnose more individuals efficiently.



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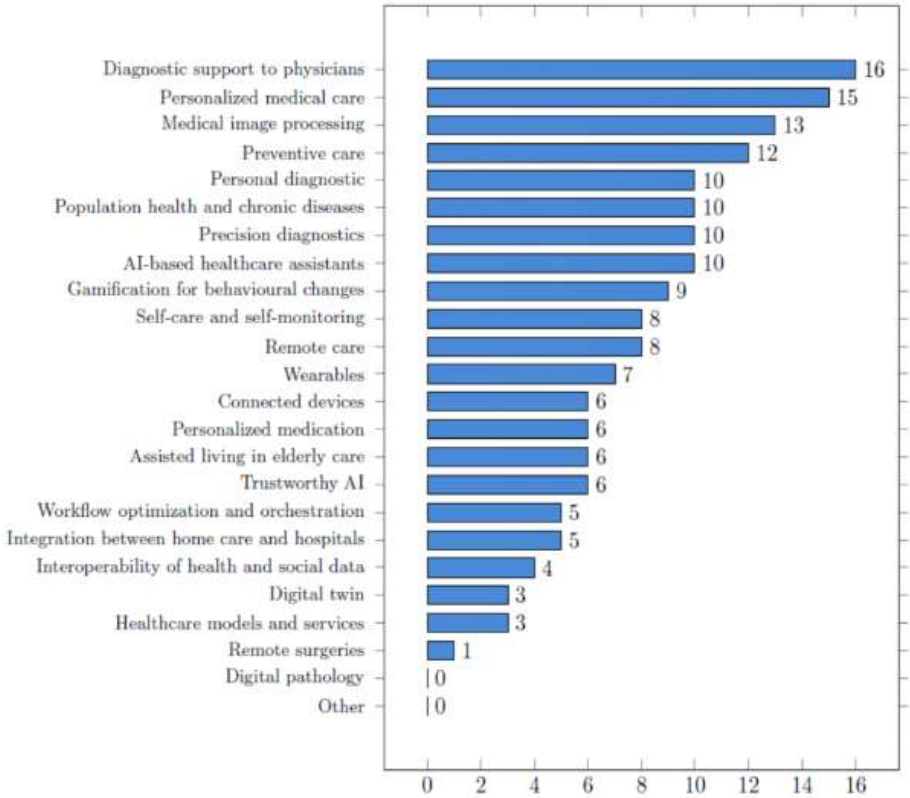
Survey & Workshop results

However, care must be taken when interpreting the results, as the mapping is not always perfect (e.g. diagnostic support to physicians may include both the measurement and planning part) and this categorisation was not known to the participants beforehand (i.e. they may easily miss out on some less obvious areas).

- The majority of the votes concentrate on the support of the physician in diagnostics and treatment planning (*Acute care / Health service provider / Plan*). This includes also personalised medicine.
- The second highest vote concentration is on support for personal health in the form of preventive care, personal diagnostics or health coaching using gamification or AI-based assistants (*Healthy & At risk / Person / Plan*)
- Health care optimisation, both on a population level and workflows in a hospital, is also mentioned as an important opportunity (*Acute care / Policymaker / Plan*)
- In measurements, medical image processing (Acute care / Health service provider /Measurement) is a clear focus point, but also self-monitoring (e.g. with wearables) received some votes (*Health & At Risk + Chronic care)*



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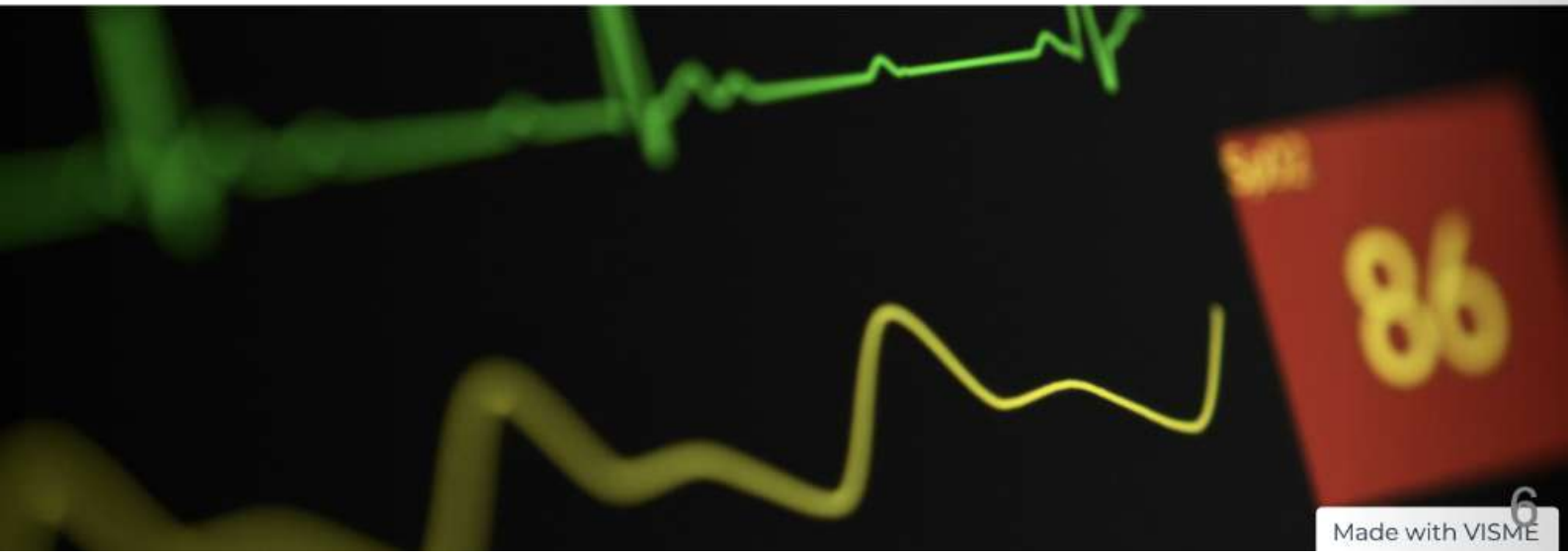
Conclusion:

This study suggests that both improved efficiency and accuracy could be achieved in clinical practice using an effective AI system. Evidence suggests that DBT screening methods improve the accuracy of cancer detection when compared to more traditional screening tests such as digital mammography. Similarly, DBT tests also reduce the number of false-positive test results and unnecessary follow-ups as compared to digital mammography The multiple images captured in a DBT screening test require radiologists to spend more time looking at each picture before concluding.

Employing AI strategies that cut down reading time and improve the test's accuracy could help support the argument of DBT's adoption as a part of the standard of care.



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