RAIDAS

Radiology AI Diagnostic Assistance System

A.I.gnostikum
AI RADIOLOGY

The RAIDAS Process

Scan

The patient is undergoing an MRI scan.

Analysis

The radiologist and RAIDAS independently analyse the MRI.

Decision Support

The radiologist compares his result with the AI analysis.

Diagnosis

A diagnosis with more confidence.

Revolutionizing MRI Diagnostics for Breast and Prostate Cancer with AI

RAIDAS – addressing key challenges in cancer detection

RAIDAS enhances early detection of breast and prostate cancer through advanced MRI analysis.

The system automatically classifies MRI scans using BI-RADS scores for breast tissue and PI-RADS scores for prostate tissue, providing radiologists with valuable assistance in distinguishing between benign and malignant findings.

By providing a second result RAIDAS reduces radiologists‘ workload, allowing them to be more confident in their diagnosis.

Key Features of the RAIDAS System

AI MRI classification

RAIDAS leverages AI trained on manually classified MRI time series to determine BI-RADS/PI-RADS values. This ensures high precision in diagnosing and classifying MRI scans as benign or malignant.

3D Data Analysis

Our system tackles the complexities of 3D MRI data, utilizing special preprocessing steps such as pre-segmentation and data augmentation to handle larger data volumes and adapt network structures for optimal performance.

Explainable AI

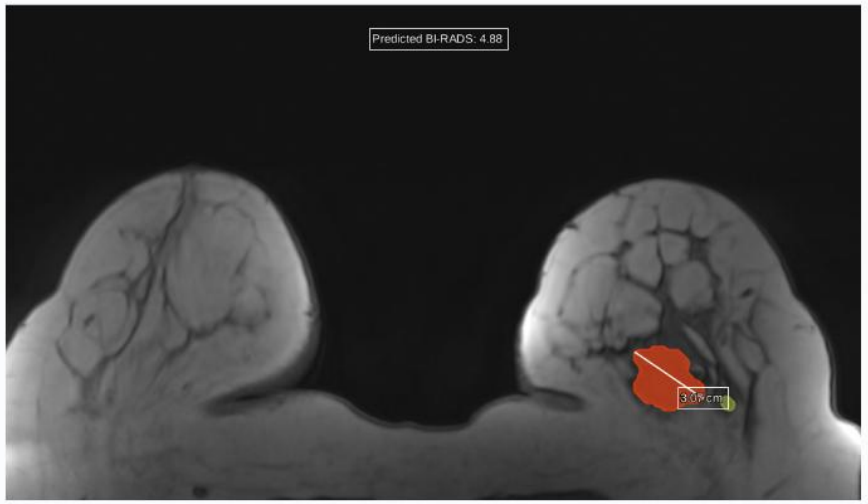
RAIDAS employs explainable AI methods to pinpoint relevant areas in MRI data, providing clear insights into the regions that most significantly impact the classification results. This transparency helps radiologists to make more informed decisions.

Seamless Integration

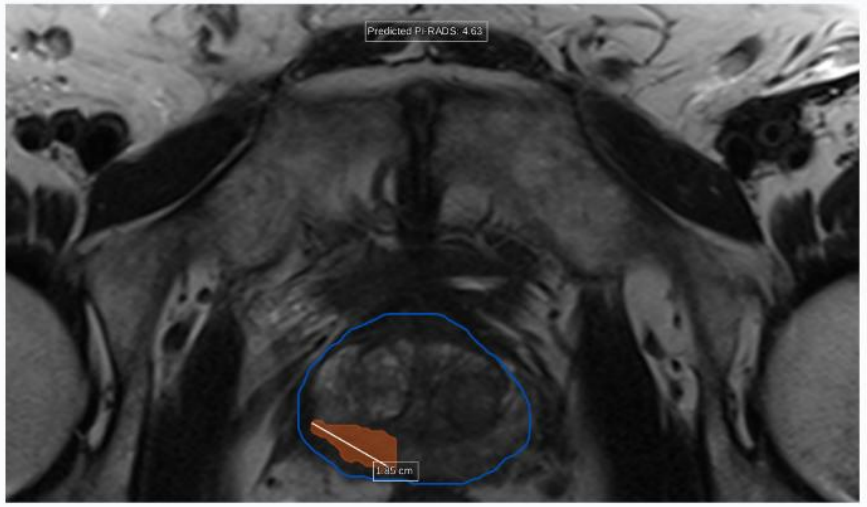
RAIDAS integrates effortlessly with existing PACS servers, allowing radiologists to access results in real time without disrupting their workflow.

Enhanced Diagnostic Confidence

The report generated by **RAIDAS** leverages advanced AI prediction results to provide detailed insights into MRI images. While the AI's computed data and visualizations offer significant assistance in identifying clinically relevant features, they are designed to complement, not replace, the expert diagnosis of medical professionals.



Visualization of Potential Lesions in the Breast



Visualization of Potential Lesions in the Prostate

Supportive and unobtrusive

RAIDAS's integration into clinical practice involves a straightforward workflow where the radiologist first examines the MRI series using traditional methods. They then compare their findings with AI-generated results to verify or refine their diagnosis. This process ensures that radiologists are not influenced by AI in their initial assessment but have access to AI's insights for confirmation.

Step 1 – unbiased expert diagnosis

The radiologist first examines the MRI series of a patient visually using the usual method at their diagnostic console. They classify the MRI images into BI-RADS/PI-RADS categories based on their expertise.

Step 2 – compare with AI report

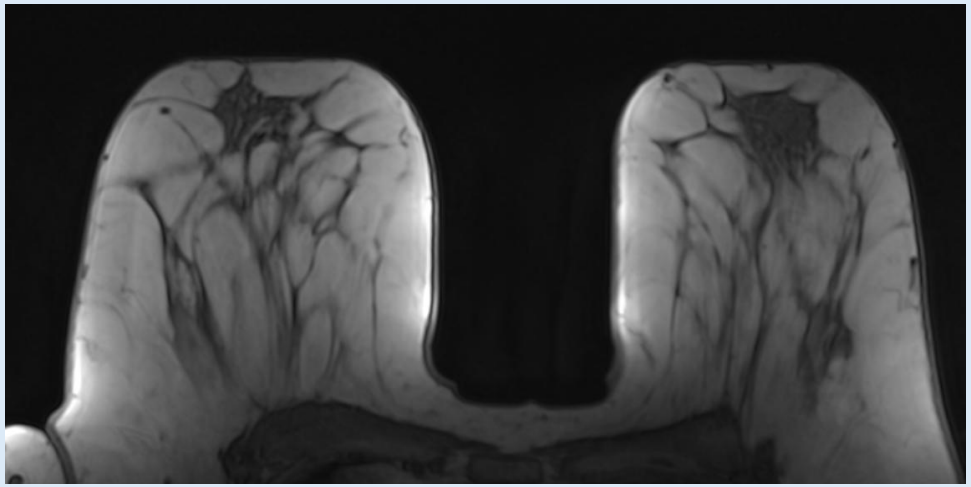
The radiologist compares their results with those of the RAIDAS system. Additionally, they can see which areas in the MRI data contributed most significantly to the determination of the automatic BI-RADS/PI-RADS value.

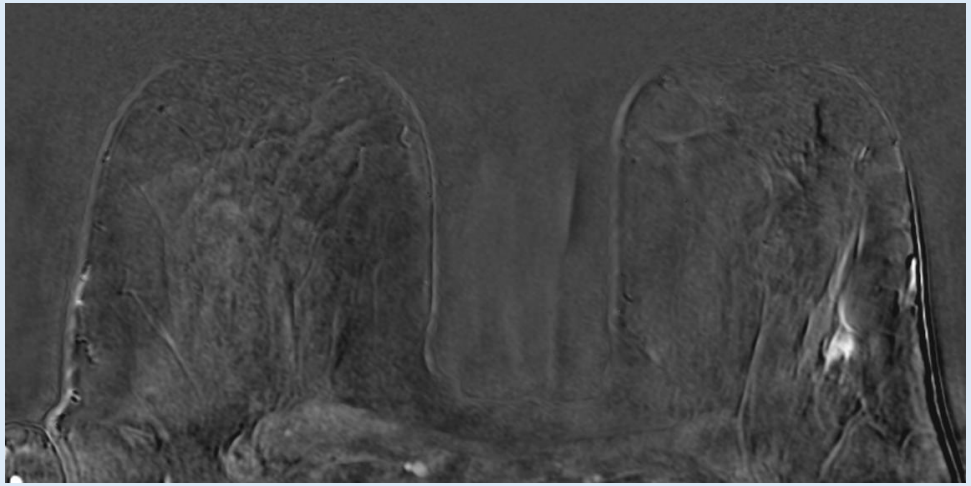
Step 3 – expert decision

The radiologist then decides, based on the comparison and the highlighted areas in the MRI data, whether their manually determined diagnosis is accurate or if the AI data necessitates further refinement or correction of the diagnosis.

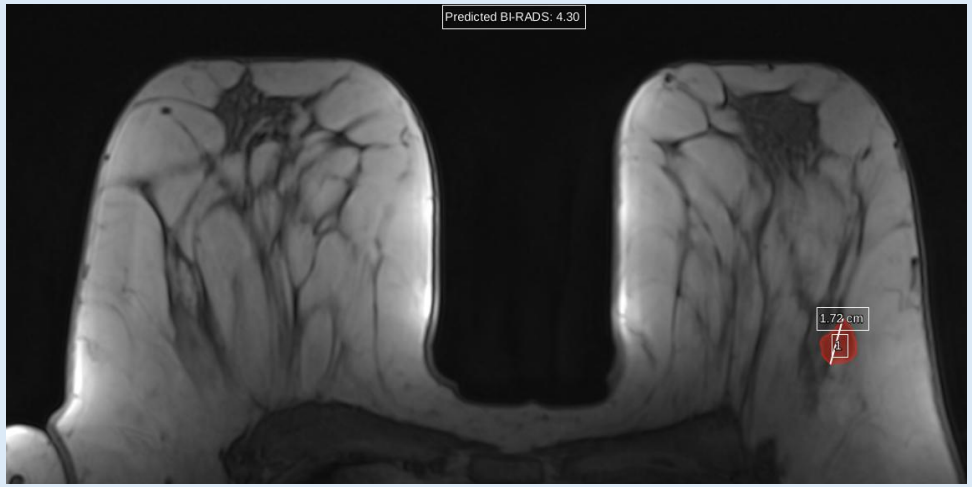
Breast Diagnosis

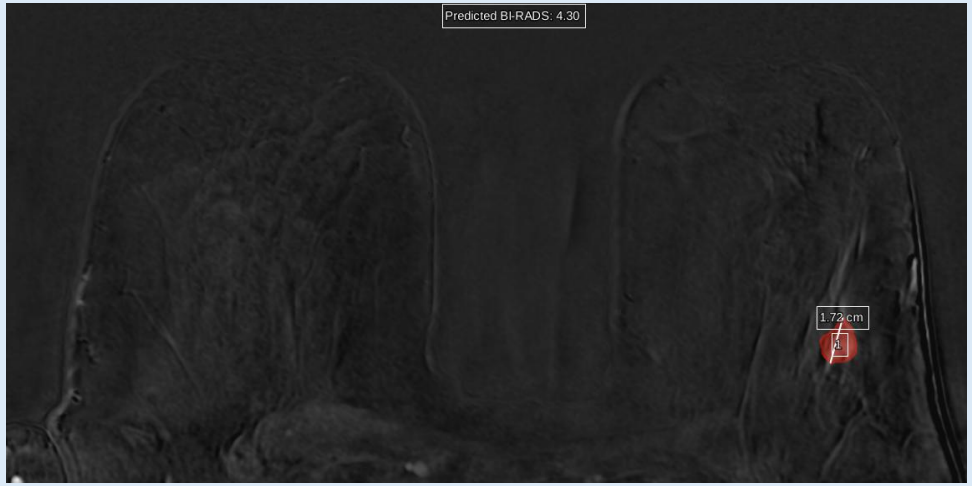
Radiologist BI-RADS 4





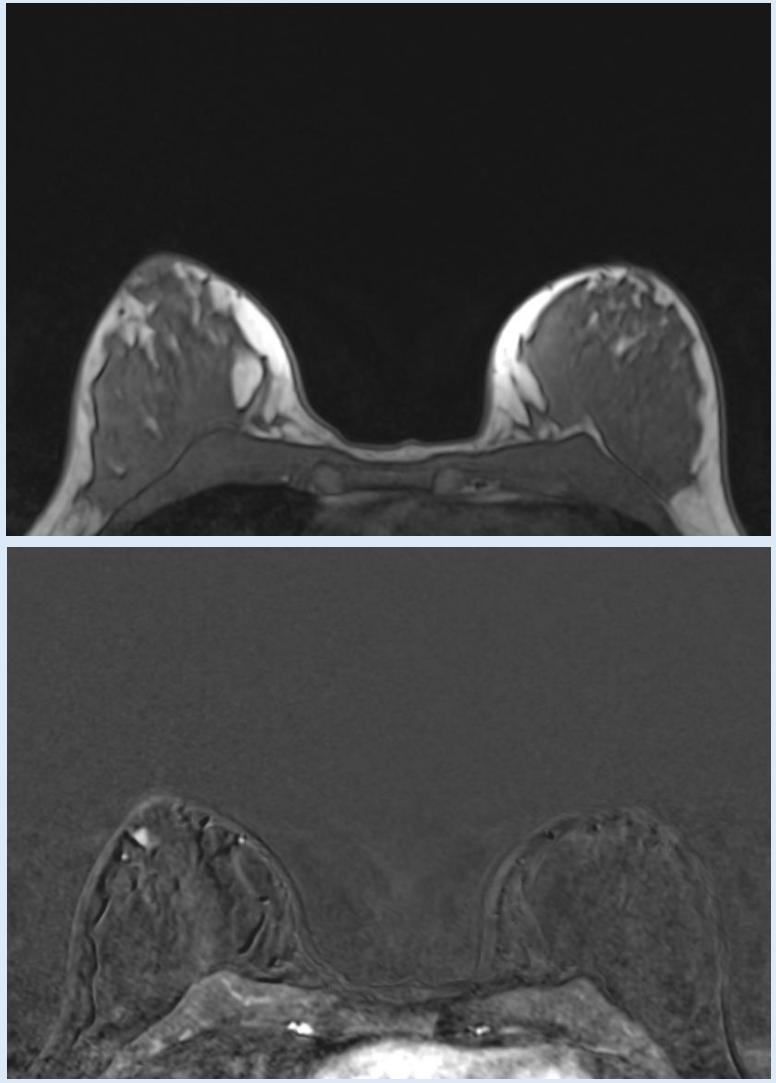
RAIDAS BI-RADS 4.30



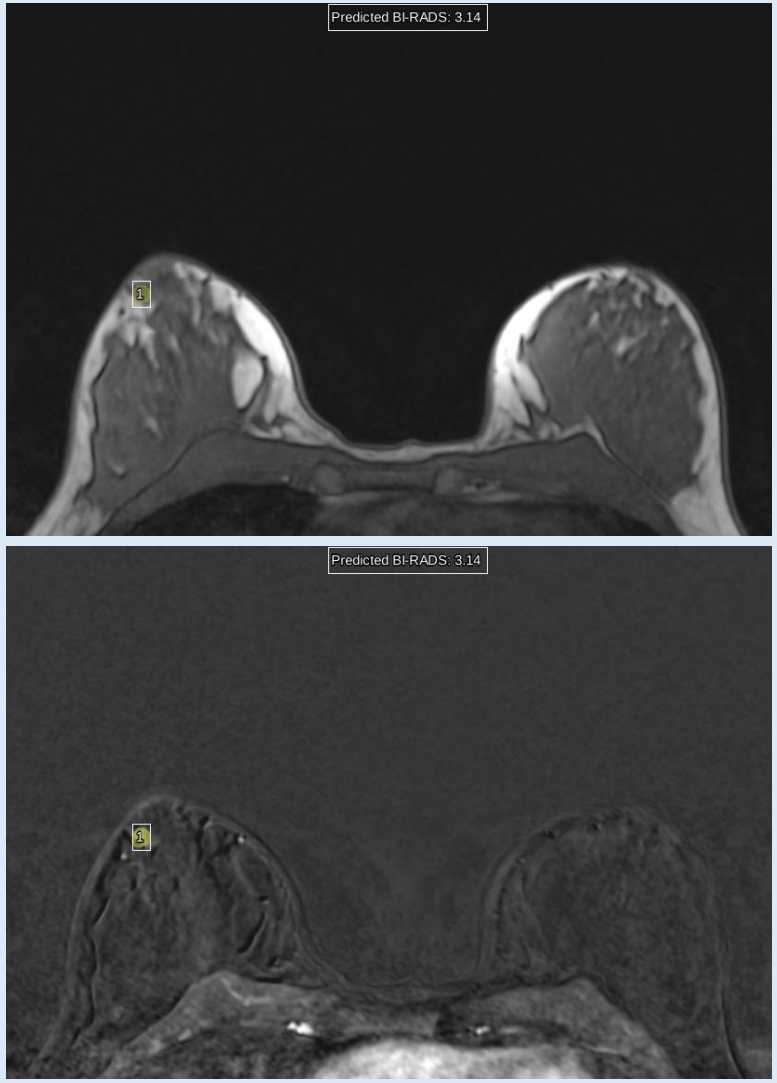


Breast Diagnosis

Radiologist BI-RADS 3

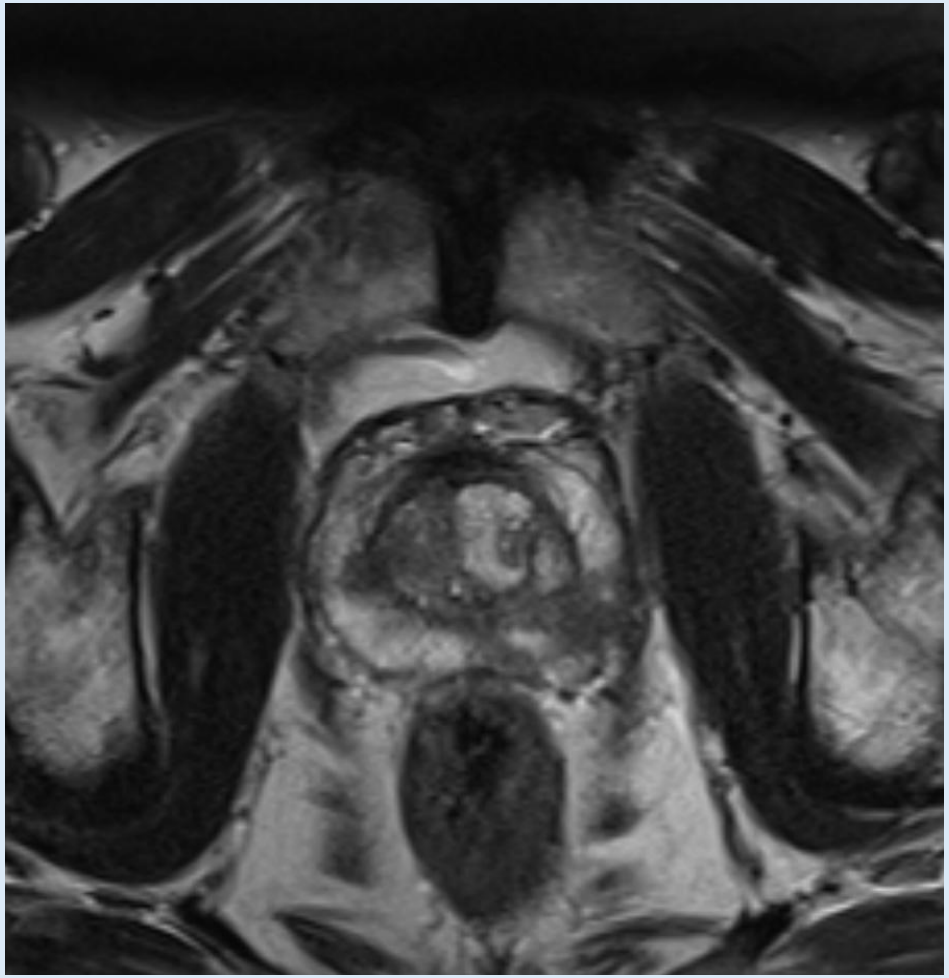


RAIDAS BI-RADS 3.14

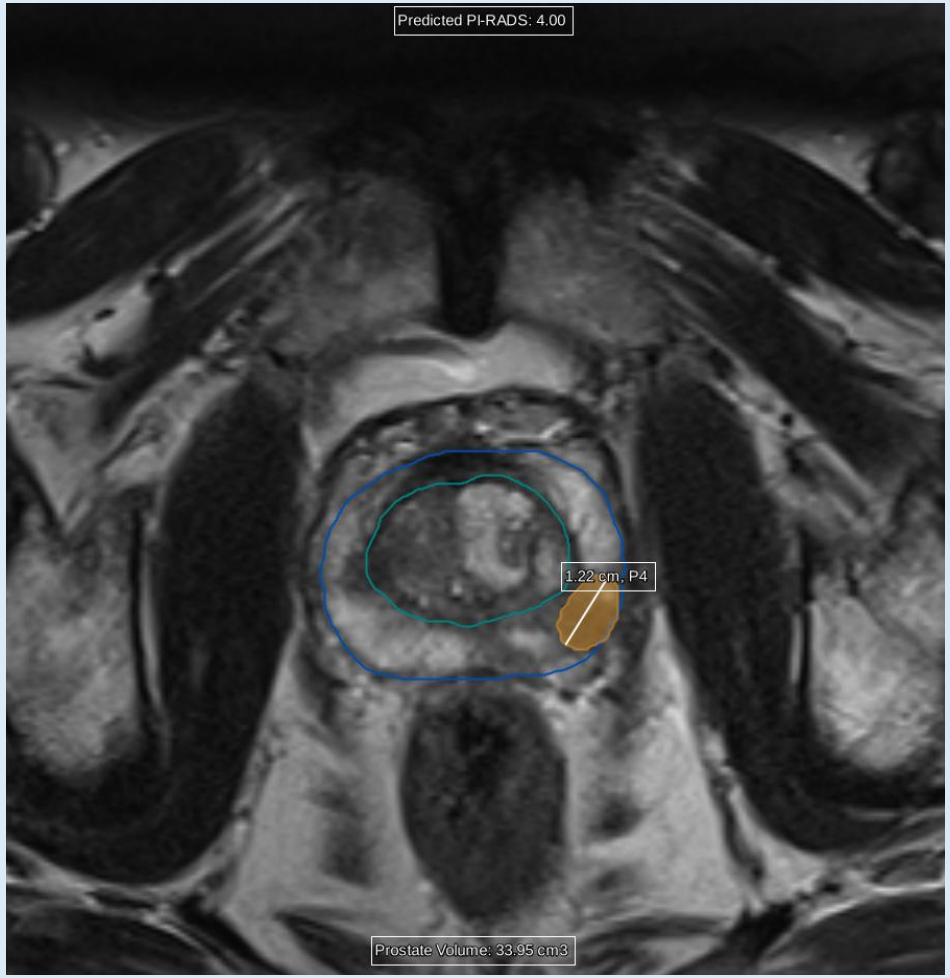


Prostate Diagnosis

Radiologist PI-RADS 4



RAIDAS PI-RADS 4.00



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