

Radiology-Pathology Fusion for Automated Prostate Cancer Detection

Motivation

Prostate cancer → 2nd largest cause of cancer deaths in American men.

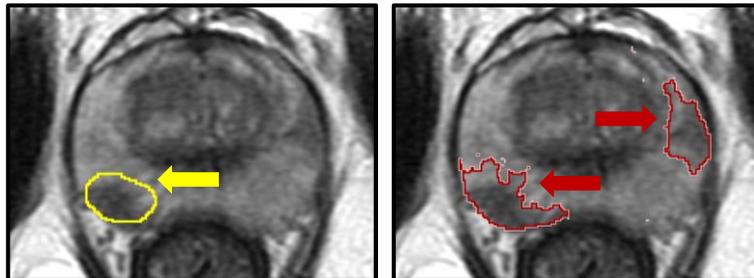
MRI → detection of prostate cancer, BUT radiologist interpretations:

- Missed and overdiagnoses,
- Wide inter-reader variability.

Automated methods → standardize radiologist interpretation,

BUT most methods:

- Use inaccurate labels,
- Ignore disease pathology.

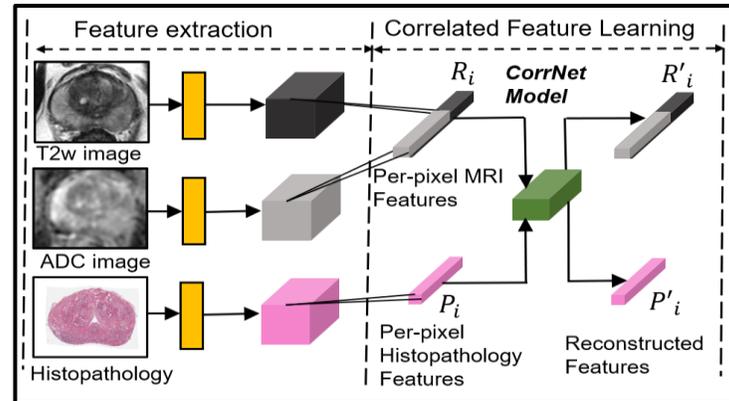


Radiologist annotation

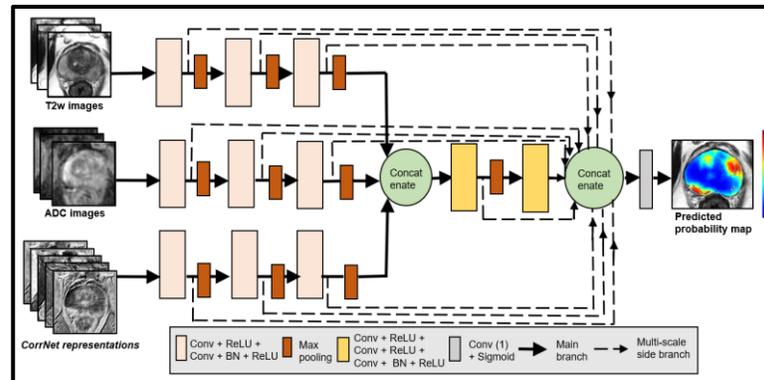
Actual Cancer extent

Method: CorrSigNet

- Radiology-pathology fusion.
- Accurate cancer labels.
- Correlated feature learning to capture disease pathology features.

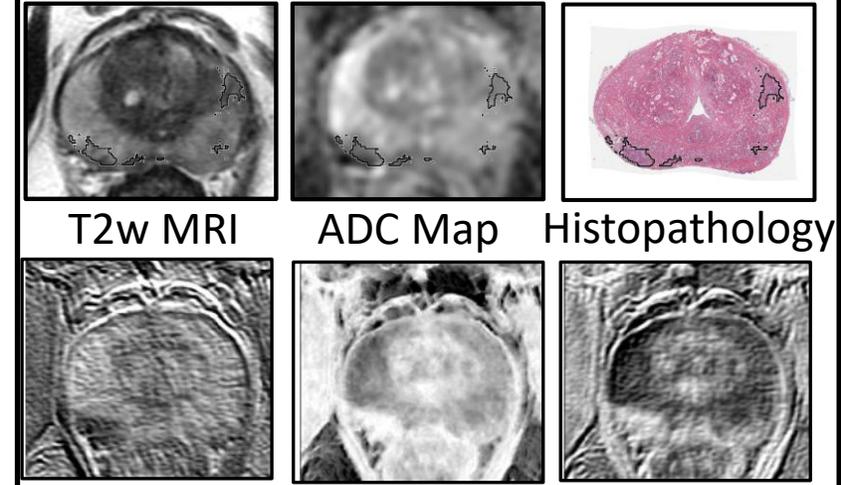


Correlated feature learning

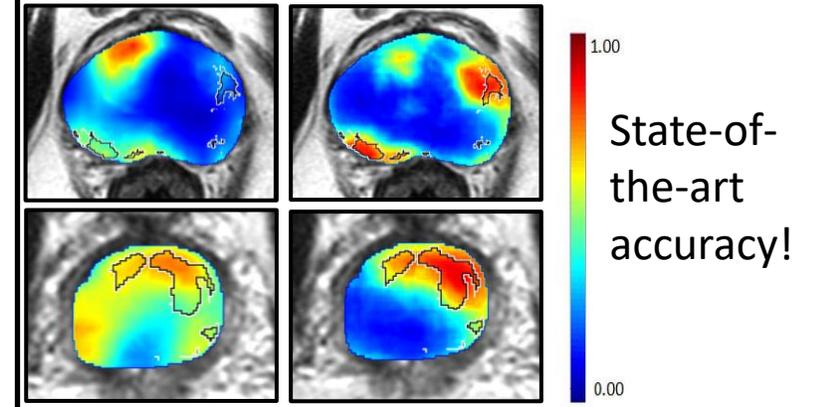


Prostate cancer detection & localization

Results



Learned correlated features



Prior method CorrSigNet

Clinical utility → early diagnosis, biopsy targeting, treatment planning.