

# A Boosting Approach for Prostate Cancer Detection using Multi-Parametric MRI

Quality Control by Artificial Vision  
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## ① Introduction

Motivations

Screening

MRI modalities

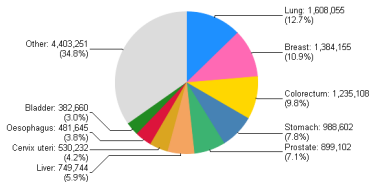
MRI modalities

Second subsection

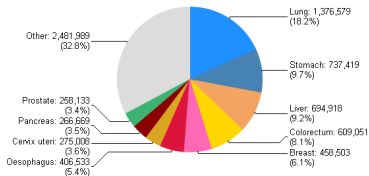


# Introduction Motivations

## Statistics



(a) # of cancer cases



(b) # of cancer deaths

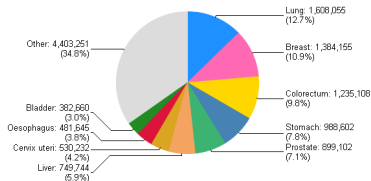
## Implications

- ▶ 2<sup>nd</sup> most frequently diagnosed men cancer
- ▶ Accounting for 7.1% of overall cancers diagnosed
- ▶ Accounting for 3.4% of overall cancers death

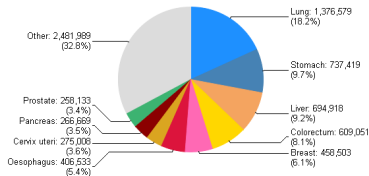


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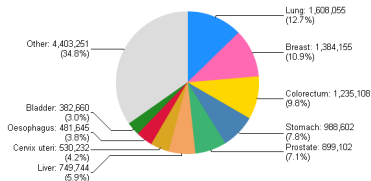
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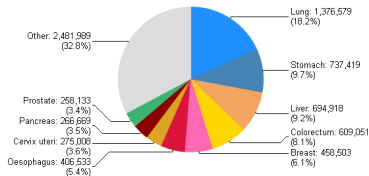


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### PSA level

→ Checking for a higher-than-normal PSA level

✗ Not reliable

### “Blind” TRUS biopsy

→ Take several samples through biopsy at different prostate locations

✗ Invasive procedure

✗ Lead to false positives & negatives

### Current trendy techniques: MRI

✓ Non-invasive technique

✗ Need further investigations regarding the potential of the different MRI modalities available



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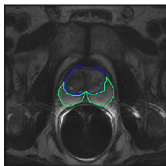
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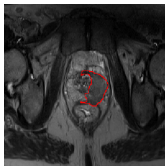


## Introduction MRI modalities

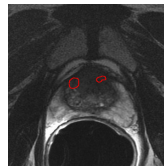
### T<sub>2</sub>W MRI



(a) Healthy



(b) CaP PZ



(c) CaP CG

### Features for CaP

- Low-SI & shape description



## Introduction MRI modalities

### DCE MRI

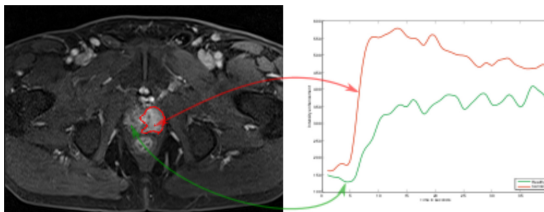


Figure : Green: healthy - Red: CaP

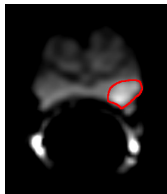
### Features for CaP

- ▶ Faster wash-in, wash-out, time-to-peak enhancement
- ▶ Higher integral under the curve, max SI

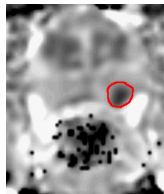


## Introduction MRI modalities

### DW MRI - ADC



(a) DW MRI



(b) ADC

### Features for CaP

- ▶ DW MRI - Higher SI
- ▶ ADC - Low-SI



# A Kick-Ass Title

## A Kick-Ass Title Subtitle

### Block environment

✗ Cross item

✓ Tick item

$$f(x) = ax + b . \quad (1)$$