# Phd Thesis at Inria
# on
# "AI-based Diagnosis of Prostate Cancer from Multiparametric MRI"

**Context:** Prostate cancer is among the most frequent male cancers in developed countries. Multiparametric Magnetic Resonance Imaging (mp-MRI) encompassing the joint analysis of 3 MR sequences has been recognized as the most accurate imaging modality in the evaluation of the staging of prostate cancer. Yet, a major impediment for its wider use as a diagnosis tool, is that it requires a lot of training for radiologists to make a proper analysis. To overcome this bottleneck, a joint project between Inria and Paris Hospitals has been recently launched to assist radiologists in the interpretation of mp-MRI through machine learning.

**Phd Topics:** The goal of the thesis is to develop **AI and machine learning methods** for the automatic detection of prostate cancer from multiparametric Magnetic Resonance Imaging. This work will be based on a large high quality image database and will leverage on the clinical expertise of the radiology department of the Paris Hospitals. The objective is to perform image detection and classification of prostate multiparametric MRIs in order to provide radiologists with a diagnosis of prostate cancer in an interpretable manner.

**Localisation** : This thesis will take place within the Epione team at Inria Sophia Antipolis in strong collaboration with the Paris Hospitals.

## Required Competences

- Master degree with strong competences in statistical learning and mathematical modeling, as well as knowledge in medical imaging, signal and image processing (Master 2 level).
- Engineer degree (Grandes Ecoles) is an asset.
- Solid programming and IT skills are necessary (Python and C++, bash scripting, version control systems).
- Strong communication abilities
- Fluent English (written and spoken)

## Contact Persons:

Please send a resume and motivation letter at the following persons:

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