

# Medical Image Analysis

STA 4930-01/STA 5934-01, Spring 2010

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A hands-on introduction to current methods in medical imaging.

Hand-on Approach:

- Programming projects will experiment on many of the presented concepts

Topics:

- Image creation:
  - 2D: X-ray, Ultrasound, Microscopy
  - 3D: MRI, CT, PET
- Object detection:
  - Boosting, SVM, Decision Trees, Random Forest
  - Marginal Space Learning
- Image Segmentation
  - Active Appearance Models
  - Level Sets
  - Auto Context
- Image Registration
  - Mutual Information

Prerequisites:

- Knowledge or strong willingness to learn C++ or Matlab.

MW 4:00-5:15 in OSB 110

