

Computer Vision - Stat 379/ CS355.

Deformable models for detecting objects in images will be discussed in detail. One-dimensional models to identify object contours and boundaries; two-dimensional models for image matching; sparse models for efficient detection of objects in complex scenes. Various mathematical tools needed to define the models and the associated algorithms will be developed. Applications include, detecting contours in medical images, matching brains, detecting faces in images and more.

Methods for object recognition and classification related to the sparse detection models will be covered with applications to handwritten character recognition and recognition of rigid objects in scenes.

Neural network implementations of some of the algorithms will be presented and some connections to the functions of the biological visual system will be discussed.

Text:

2d Object Detection and Recognition: models, algorithms and networks, Yali Amit (2001).

