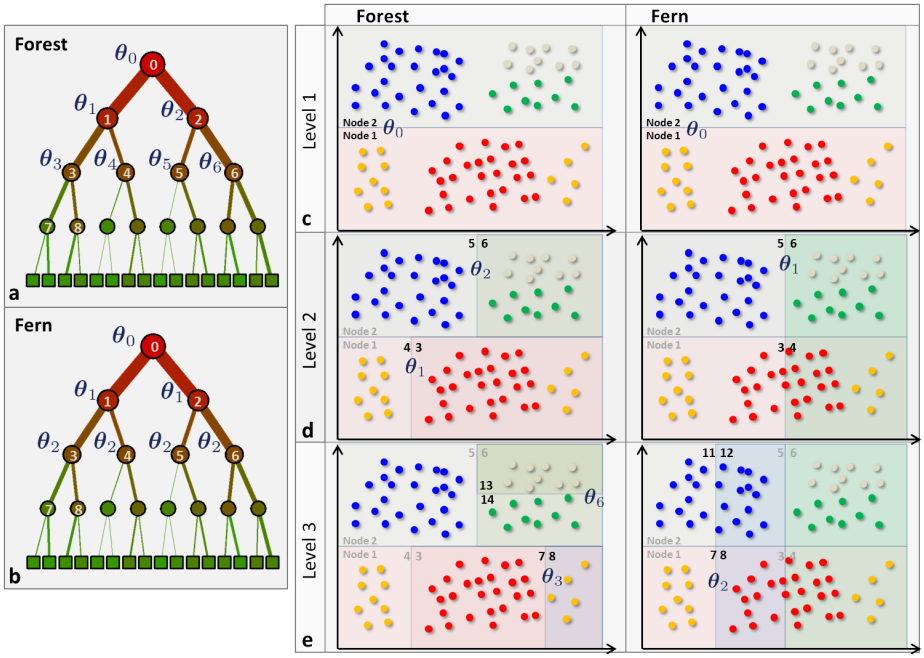

Fig. 8.2: **Forests and ferns.** A set of labelled training data is used to train a forest and a fern. Here simple axis-aligned weak learners are employed. A fern has fewer parameters than the forest and thus the fern typically requires deeper trees than a forest to split equally well the input training data.

ply adding the new counts in the appropriate bins). The work in [77] presents further details.

8.4 Structured-output Forests

Often decision forests are used for the semantic segmentation of images. This involves assigning a class posterior to each pixel (voxel) in the image domain (*e.g.* in Microsoft Kinect). However, such class decisions are often made independently for each pixel. Classic Markov random fields [8] add generic spatial priors to achieve more homogeneous outputs by smoothing noisy local evidence. In this section we mention two