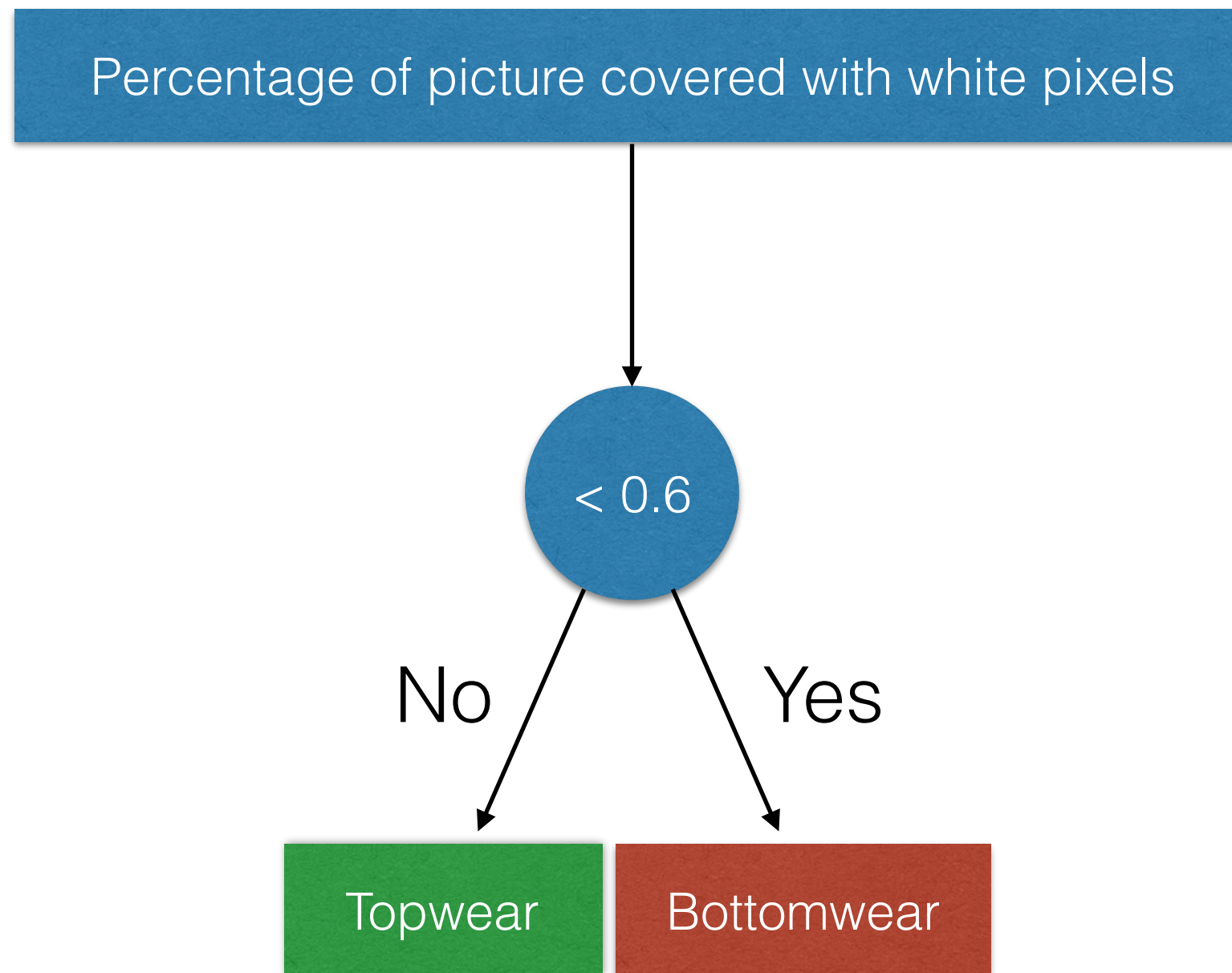
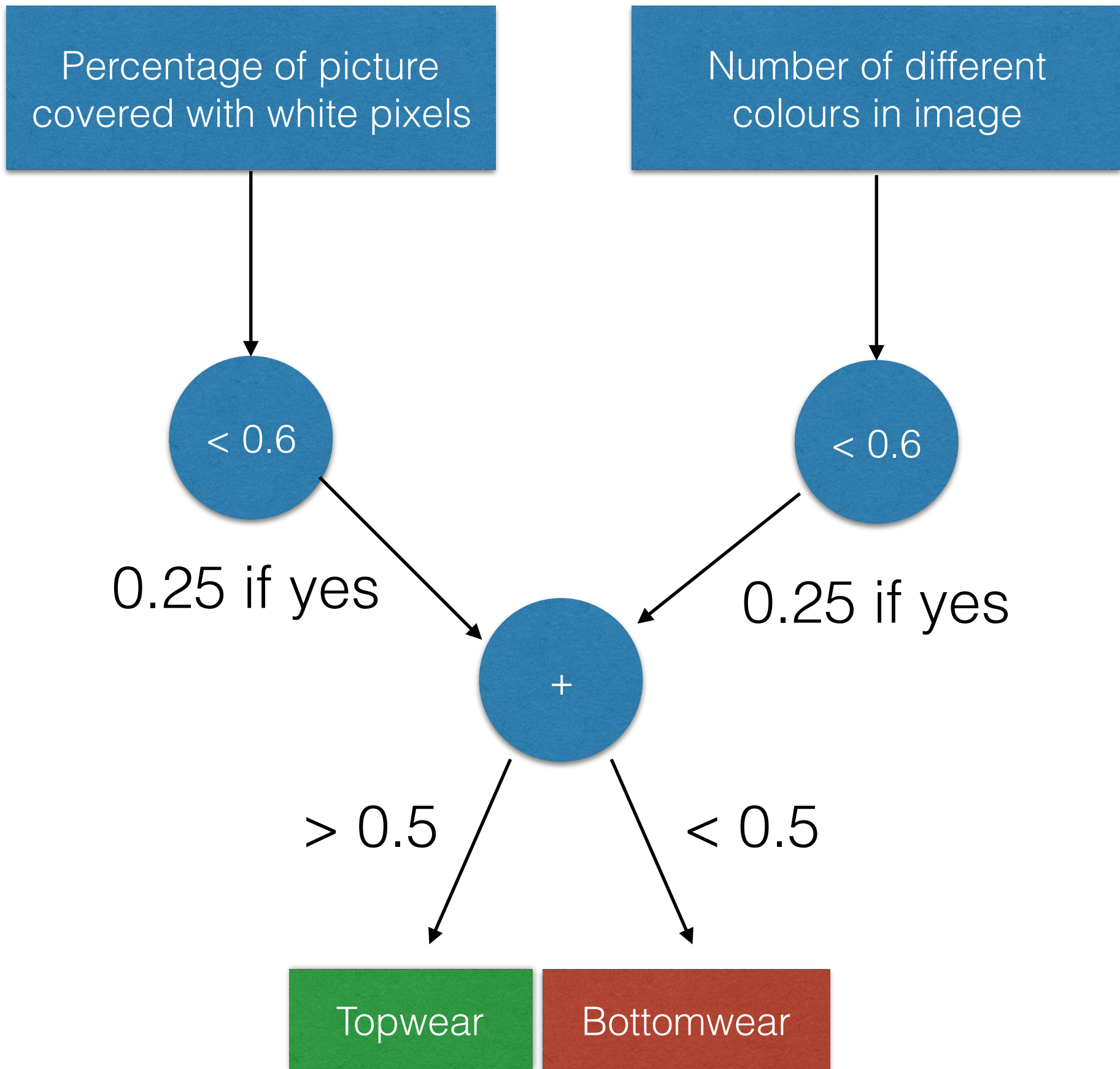


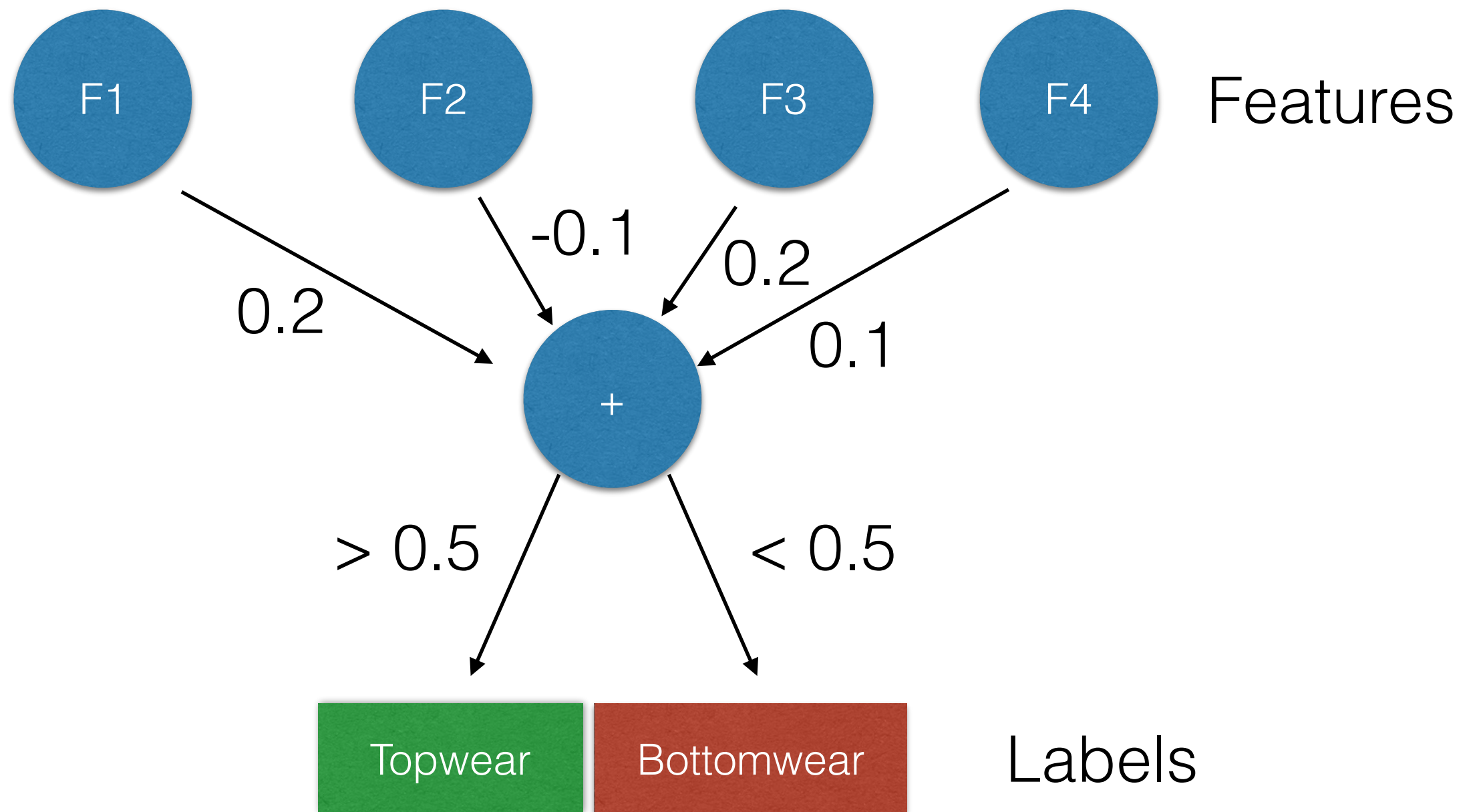
A Date with Deep Learning

The most basic decision tree

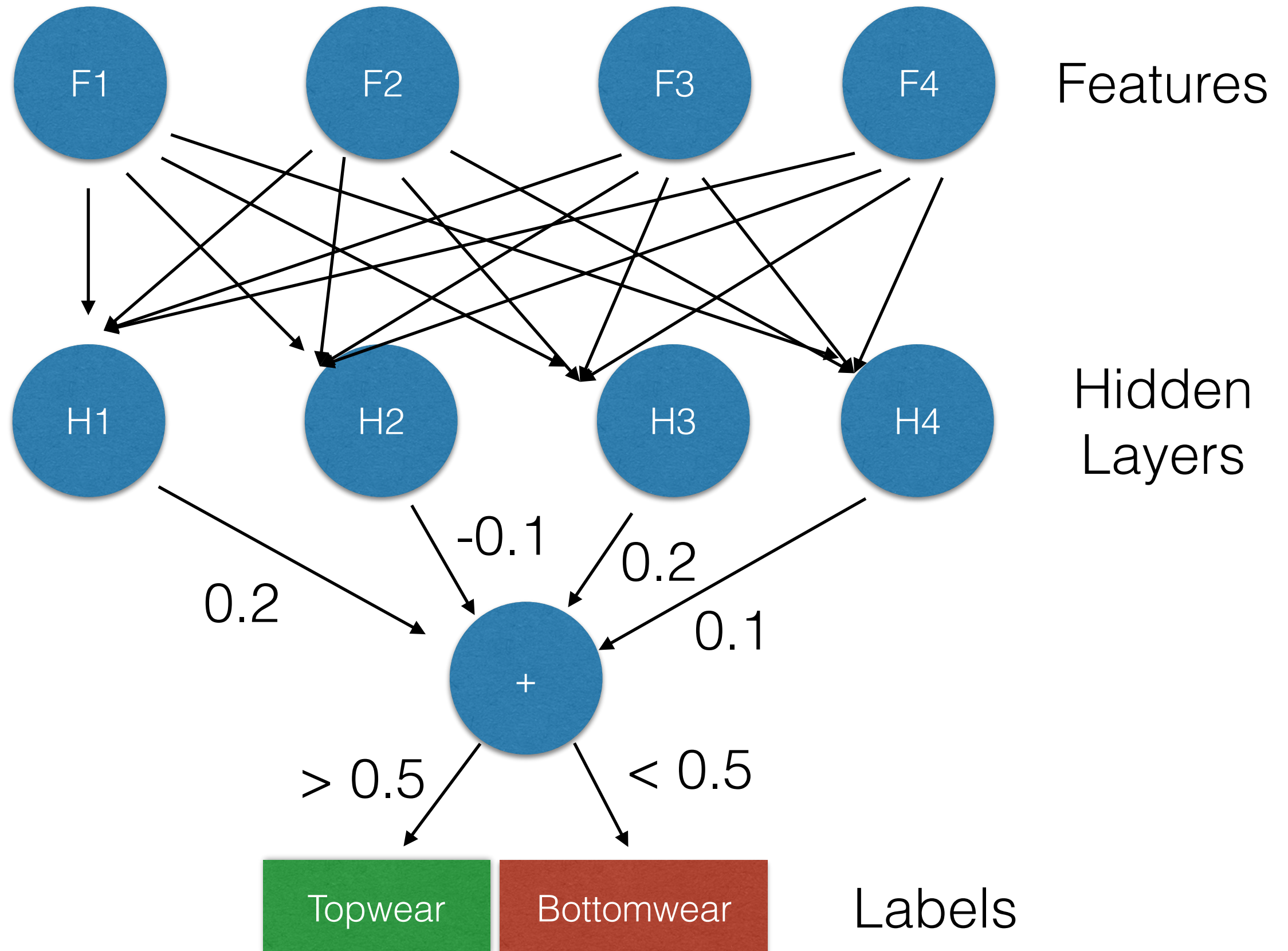




Which can also be seen as a weighted graph of neurons



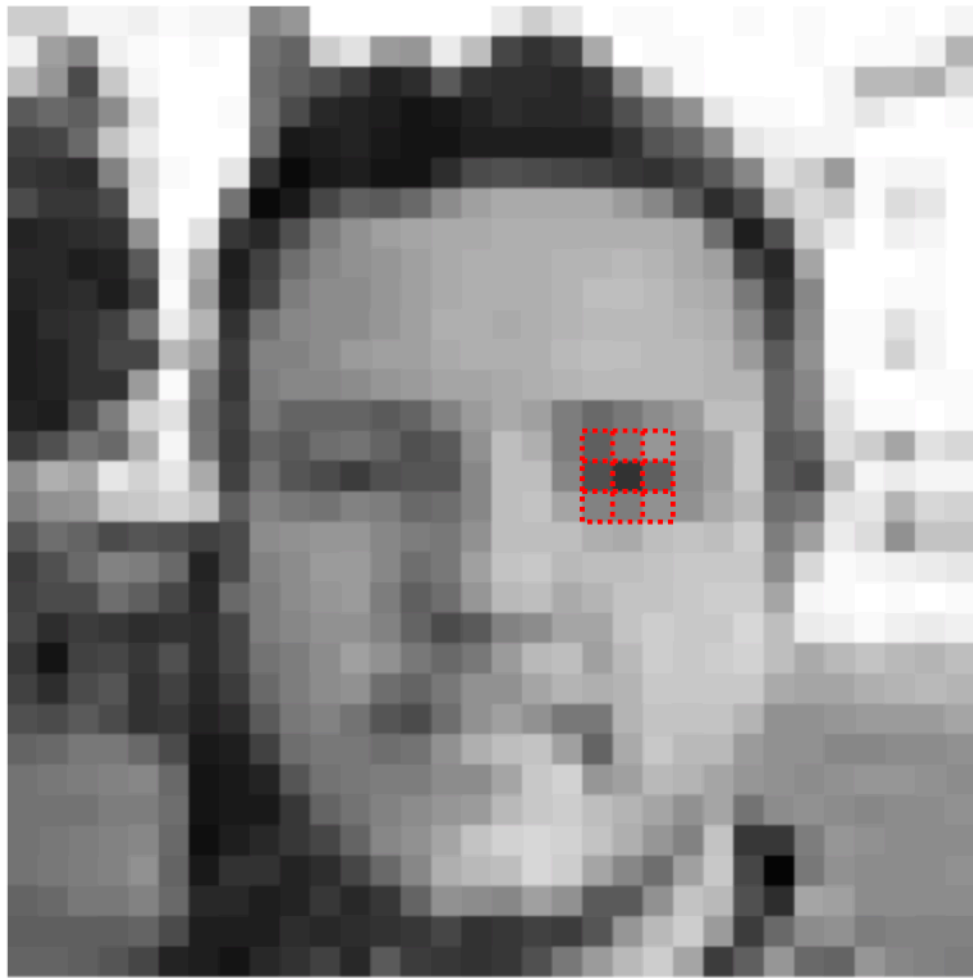
Or a more “deep” graph of neurons



Convolution as a Feature Extractor

blur

$$\begin{pmatrix} 0.0625 & 0.125 & 0.0625 \\ 0.125 & 0.25 & 0.125 \\ 0.0625 & 0.125 & 0.0625 \end{pmatrix}$$

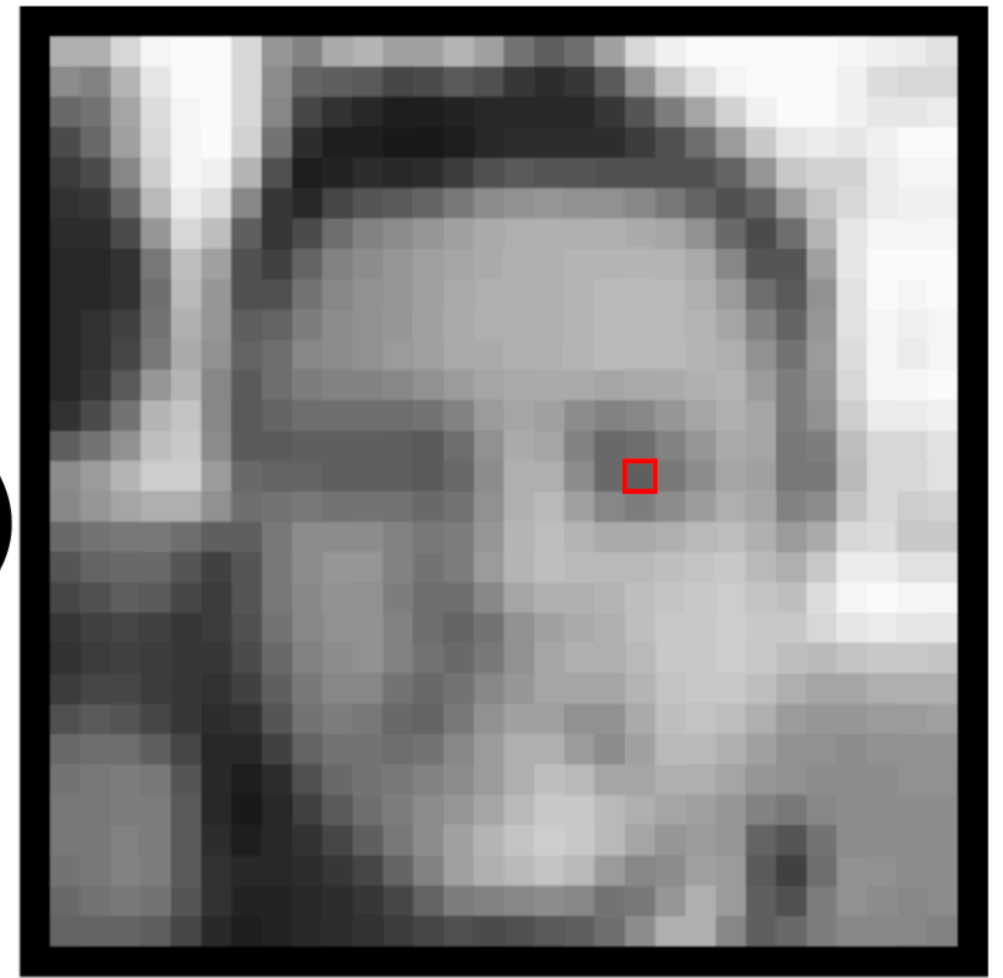


input image

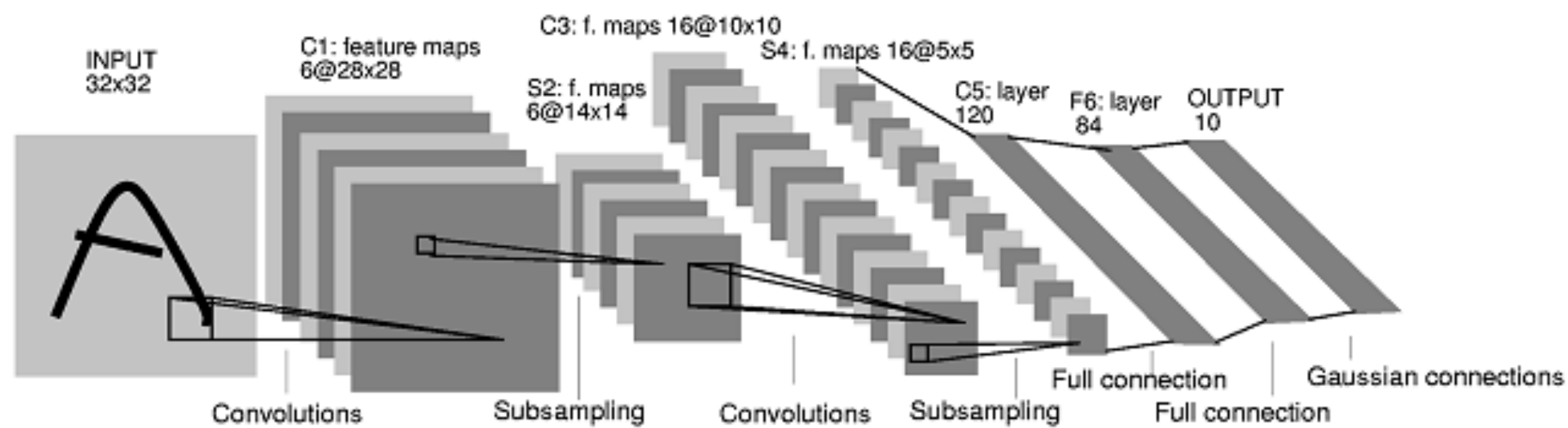
$$\begin{aligned} & \left(\begin{array}{ccc} 98 & + & 123 & + & 153 \\ \times 0.0625 & \times 0.125 & \times 0.0625 \\ + & 80 & + & 53 & + & 99 \\ \times 0.125 & \times 0.25 & \times 0.125 \\ + & 130 & + & 127 & + & 147 \\ \times 0.0625 & \times 0.125 & \times 0.0625 \end{array} \right) \\ & = 100 \end{aligned}$$

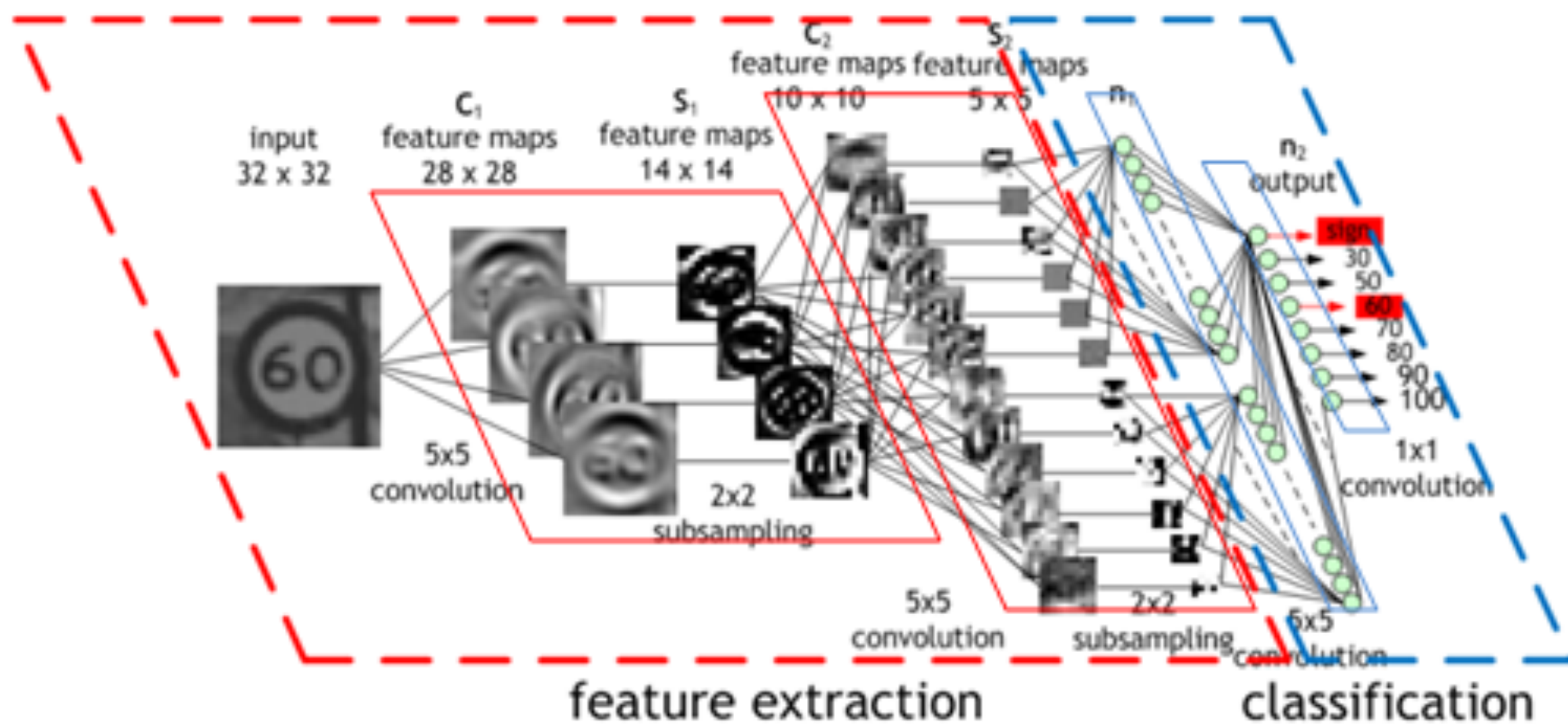
kernel:

blur

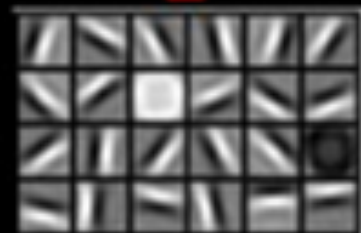


output image

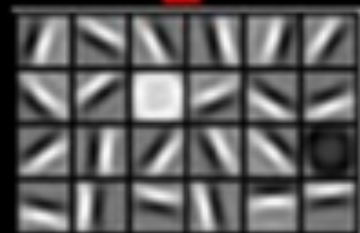




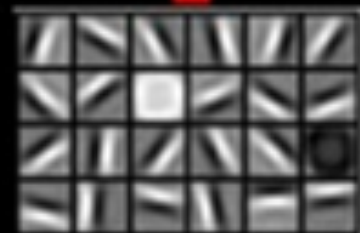
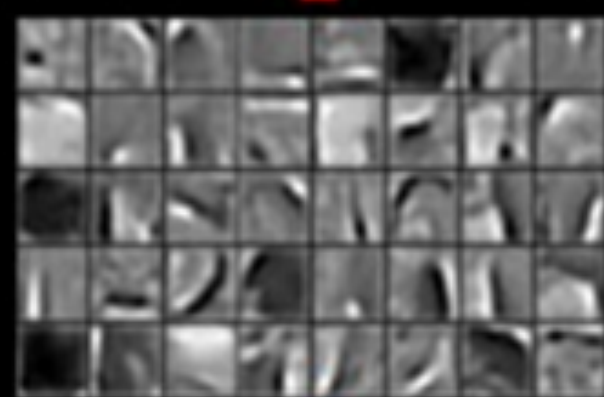
Faces



Cars



Elephants



Chairs

