CS 294-6 Recognizing People, Objects and Actions

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- Write functions for 1D and 2D filtering with Gaussian derivatives of first and second orders. Test them on synthetic and real images. You may find the Matlab functions *conv*, *conv2*, *filter*, *filter2* relevant. Use 6 equally spaced orientations and 3 scales (σ spaced half-octave apart) and an aspect ratio of 3:1. This should give you 36 filters.

- Use k-means to find textons for some real images.

- Implement an edge detector based on finding local maxima of oriented energy. You can implement this for a given scale by finding the dominant orientation at a pixel and moving perpendicular to it to find if it is a local maximum. Take the union of the edges at different scales to get the overall edge map.