Convolutional Neural Networks

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1 Points to Remember

- **Statistical Invariance**: Object in different areas of the image or words in different positions in the text. Need weight sharing! CNN for images and RNN/Embeddings for text.
- 1x1 convolutions: Equivalent too a small NN acting on the image patch rather than just a linear classfier in the case of the classic convnet setting
- Use alternating pooling and conv layers.
- **Inception Module**: Average pooling followed by 1x1, 1x1, 1x1 followed by 3x3, 1x1 followed by 5x5. Concatenate all.

2 Assignmnet 4

- Batch Size: 128, num_steps: 10K, Early Termination
- conv1 (5x5, stride=2), conv2 (5x5, stride=2), fc (1024) - 94.8%
- conv1 (5x5, maxpool=2x2), conv2 (5x5, maxpool=2x2), fc (1024) - 95.1%
- l_2 loss, dropout, learning rate decay - 93% (I do not know why, bad hyperparameters maybe)