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Assignment 3: Convolutional Networks and Batch Normalization

Note to reader.

This is my work for assignment three of Michigan's course EECS 498: Deep Learning for Computer Vision. The majority of explanations and understanding are derived from Justin Johnson's Lectures and Stanford's CS 231N Lecture Notes. This document is meant to be used as a reference, explanation, and resource for the assignment, not necessarily a comprehensive overview of Neural Networks. If there's a typo or a correction needs to be made, feel free to email me at benjamin.smidt@utexas.edu so I can fix it. Thank you! I hope you find this document helpful.

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1 Convolutional Network Nuts and Bolts

1.1 Convolutional Layer Forward

1.2 Convolutional Layer Backward

1.3 Max Pooling Forward

1.4 Max Pooling Backward

1.5 Fast Implementations

1.6 Convolutional Sandwich Layers

2 End-to-End Convolutional Networks

3 Kaiming Initialization

4 Batch Normalization