

APS360 Fundamentals of AI

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Agenda

- ▶ Multi-Class Classification
- ▶ Debugging Neural Networks

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Let's do everything in a Jupyter Notebook Today!

(Review Notes)

Neural Network Layers

- ▶ The class `nn.Linear` defines a fully-connected layer
- ▶ The `forward()` method of a neural network defines how to make a prediction

Forward and Backward Pass

- ▶ Forward pass: makes a prediction
 - ▶ e.g. `network(input)`, which calls `network.forward` method
 - ▶ Information flows *forwards* from input to output layer
- ▶ Backward pass: computes changes to weights
 - ▶ e.g. `loss.backward()`
 - ▶ Information flows *backwards* from output to input layer

N-Ary Classification

- ▶ The final output layer has as many neurons as classes.
- ▶ Use the `softmax` activation function
- ▶ Loss function: cross-entropy loss