APS360 Fundamentals of AI

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Agenda

- Multi-Class Classification
- Debugging Neural Networks
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- Debugging Neural Networks

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 \texttt{softmax} activation function
- Loss function: cross-entropy loss