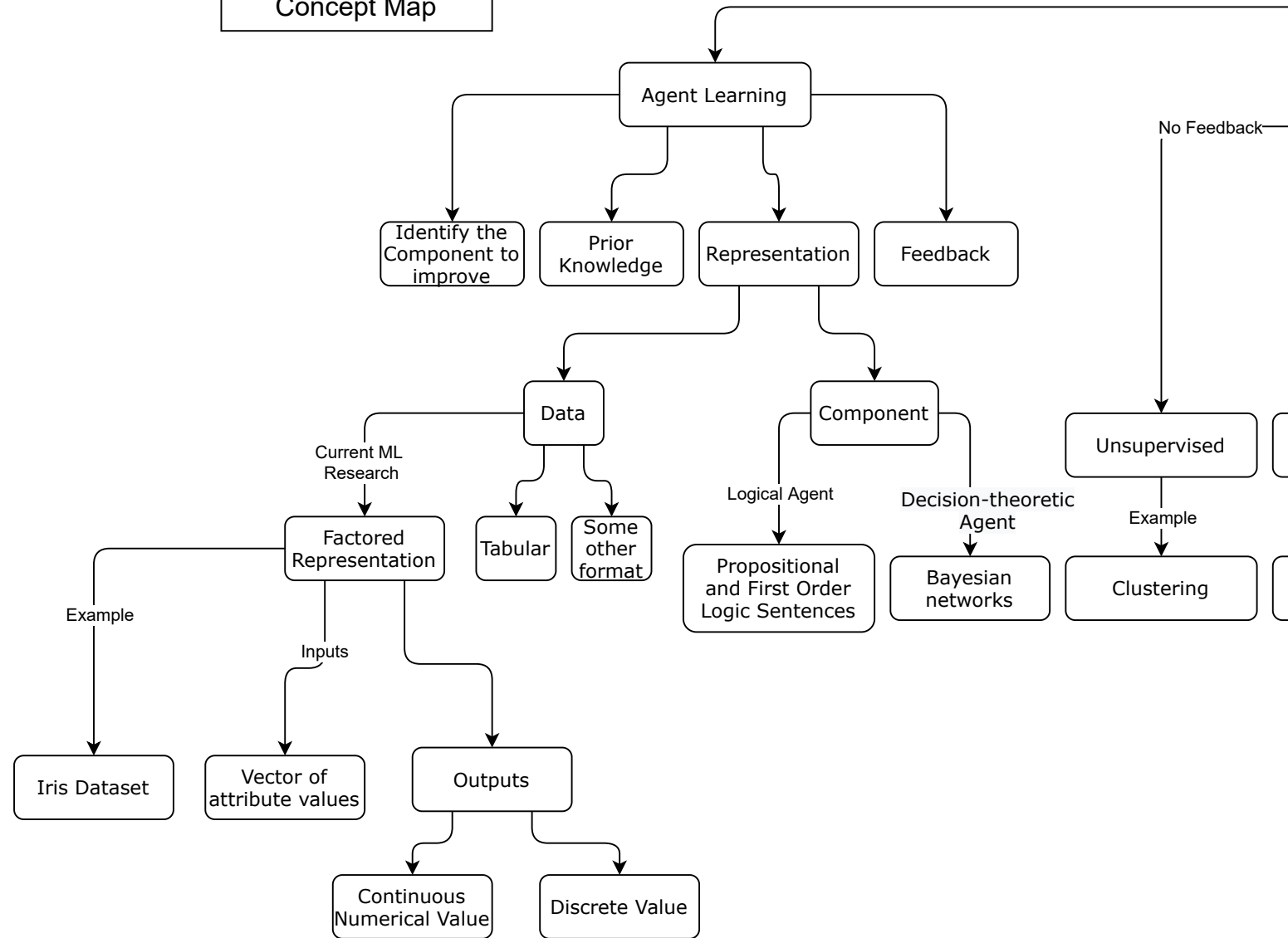
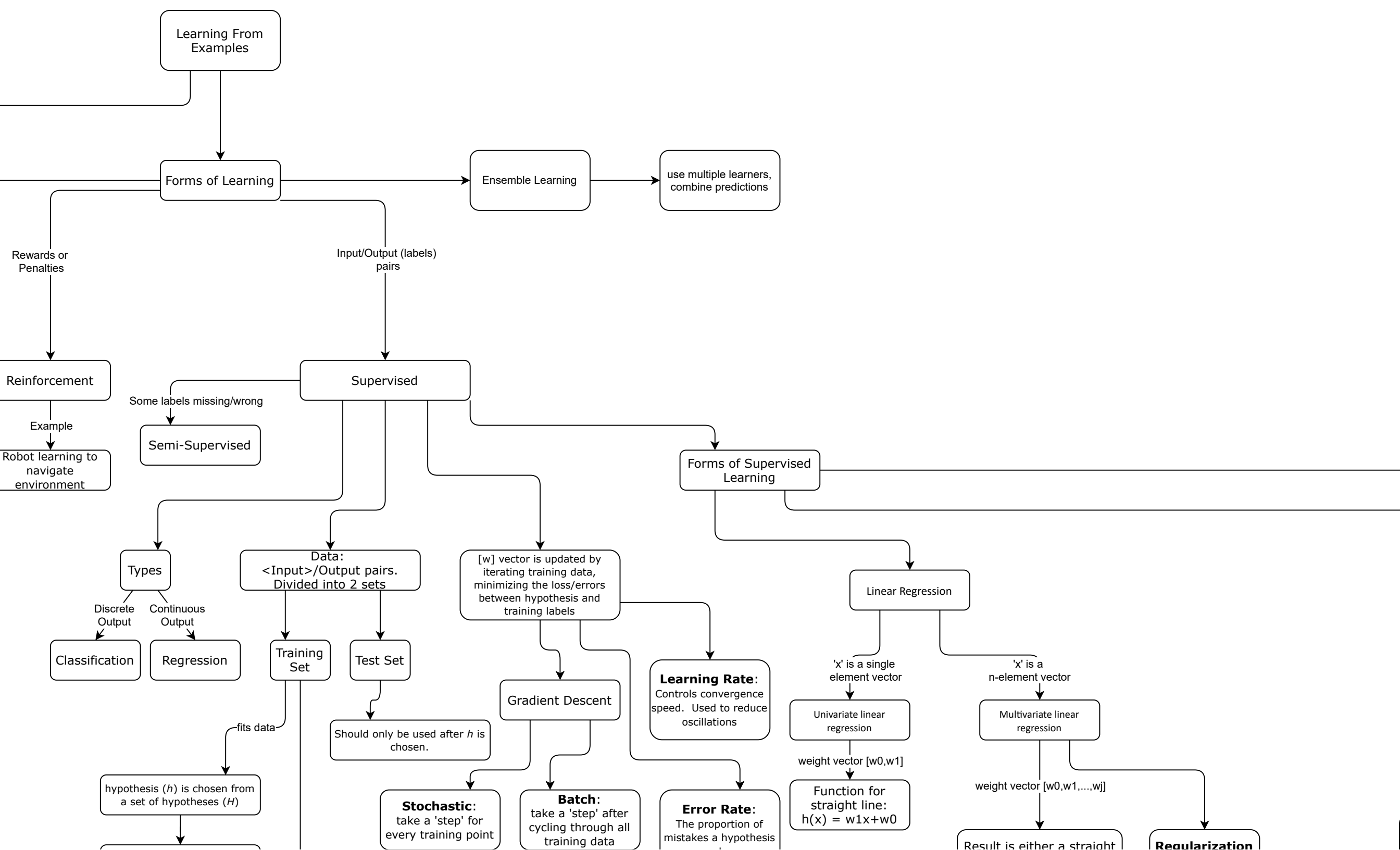
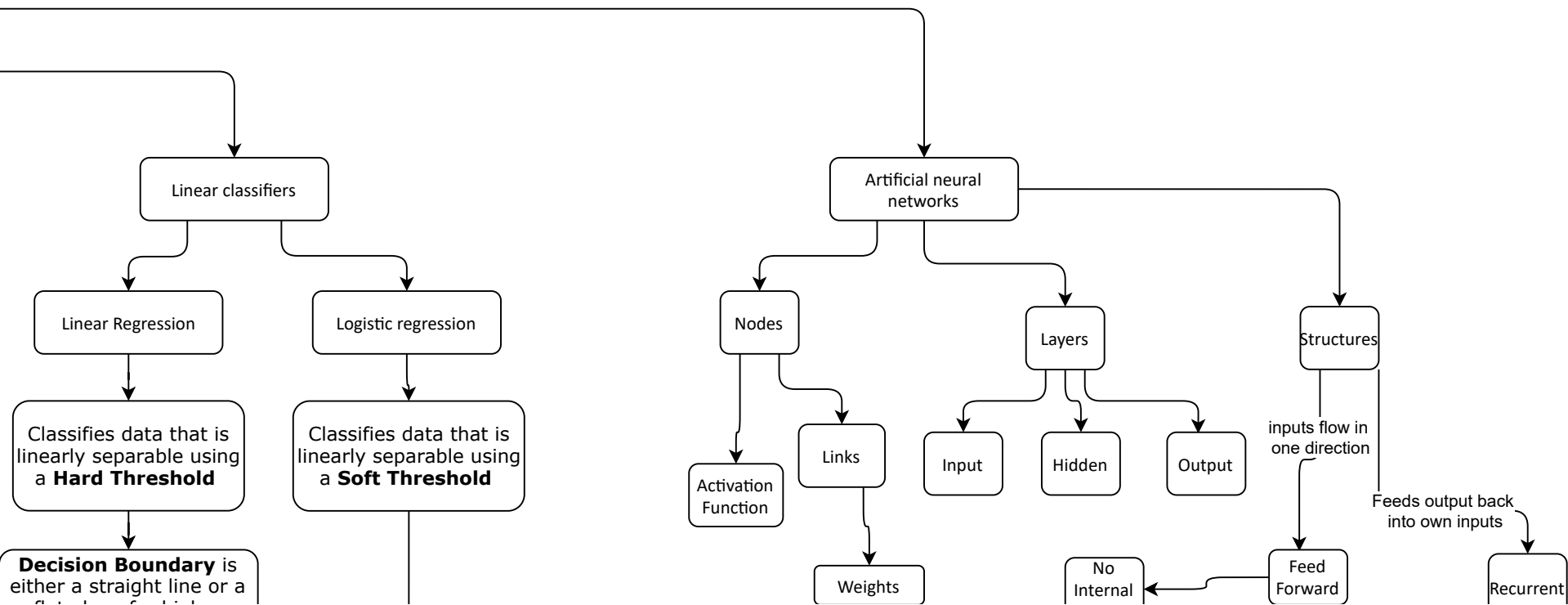


Jeff Kilgore  
CS 5300  
Chapter 18  
Concept Map









Simple hypothesis is preferred over complex

Validation Set

Cross-Validation

k-Fold

Holdout

Leave-One Out

Overfitting

makes

Result is often a straight line or a flat plane for higher dimensions

Regularization can be used to avoid overfitting

**L1**  
Minimizes the sum of the absolute values

**L2**  
Minimizes the sum of squares

flat plane for higher dimensions

Results are **binary**, depending if the point is above or below the decision boundary.

Results are **continuous**, giving the probability that a point is of a certain class.

Determine Strength and Sign of the link

State

Perceptron Network

Single Layer

Mutiple 'hidden' layers

Multilayer/Deep

short-term memory