PHYS 243

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Problem 3

Part 1. Explain the difference between validation and test samples.

Validation set is used to see how well the generated model. It is used to evaluate how well the generated model is. Test samples is used to provide an unbiased evaluation of a final model fit on the training dataset.

Part 2. Explain the difference between supervised and unsupervised learning algorithm

In Supervised learning algorithm, the machine is trained with a labeled dataset, which means some data is already connected with the correct answer.

Unsupervised learning is the opposite of supervised learning algorithm, which means the datasets are not label and the algorithm tries to make sense by extracting features on its own.

Part 3: Define optimization and describe its relationship with Machines Learning.

Optimization is choosing inputs in a result of the best output. It is used in machine learning while generating model in the training session. It is used to determine the best parameters and avoid overfitting.