

## CIS508 Data Mining

### **ML Concepts used :**

Classifiers,  
Stacking  
Hyper Parameter  
Tuning

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# Approach

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- Perform Classification using Random Forest, Decision tree, MLP and gradient boosting
- Record metrics
- Create one layer stack with RF as base
- Perform Hyper Parameter Tuning
- Record metrics and compare metrics for different approaches

# Final Scores

	Accuracy	Macro. Avg Precision	Macro Avg Recall	Macro Avg F1	Mean AUC	
Decision Tree Classifier	0.9294		0.91	0.8	0.84	0.715
Random Forest Classifier	0.8826		0.92	0.62	0.66	0.896
Gradient Boosting Classifier	0.927		0.92	0.79	0.84	0.9093
Multi Layer Perceptron	0.808		0.67	0.72	0.69	0.77
One Layer Stacking	0.98		0.99	0.94	0.96	0.95
Hyperparameter tuned stack	0.98		0.99	0.94	0.96	0.95

Thank You!