**Python Project 1: Funny Money**

-by Aniket N Prabhu, ASU ID: 1217704488

1. Data Analysis:

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Description automatically generated

Correlation tells us how much a variable is dependent on another variable. From the above cross covariance matrix, we can say that Variance is the most dependent on class, Skewness is the most dependent on Curtosis, and Entropy is the most dependent on Skewness. After Variance, Skewness is the most dependent on Class. Hence, according to this analysis, Variance and Skewness are the best predictors of genuine money.

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| --- | --- |
| Classification | Accuracy |
| Perceptron | 0.98 |
| Logistic Regression | 0.66 |
| Support Vector Machine (Sigmoid) | 0.7 |
| Decision Tree Learning | 0.75 |
| Random Forest | 0.73 |
| K-Nearest Neighbor | 0.46 |

1. Machine Training:

From this table, it is clear that Perceptron is the best machine learning method out of them for predicting counterfeit bills as it has the highest accuracy (98%). ‘Sigmoid’ kernel type was chosen for the Support Vector Machine as it gave the best accuracy amongst other kernel types. We chose k=8 for K-Nearest Neighbors as it provided the best accuracy.