

CS 418 Final Project

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1. Problem Selection
2. Data Collection
3. Data Preparation
4. Data Exploration

Figure 1: Drug Usage

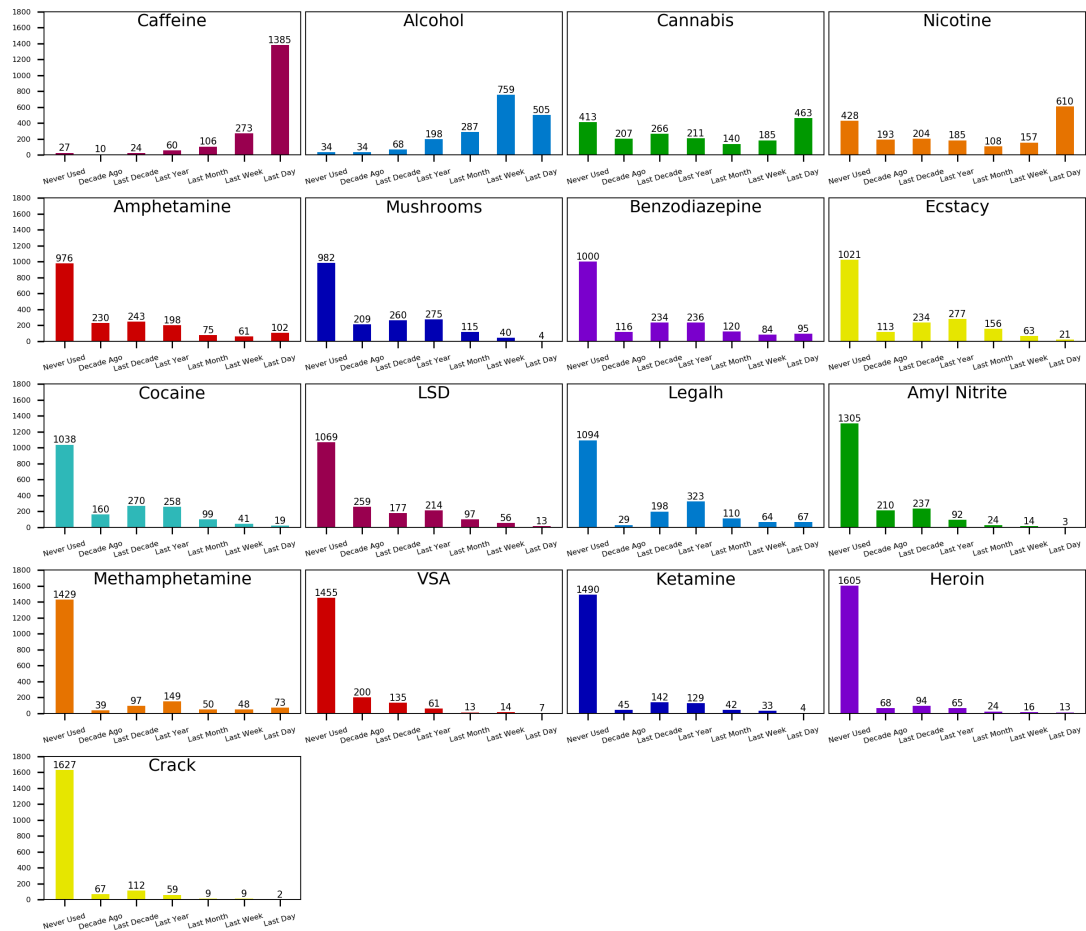


Figure 2: Illegal Drug Usage and Frequency by Gender

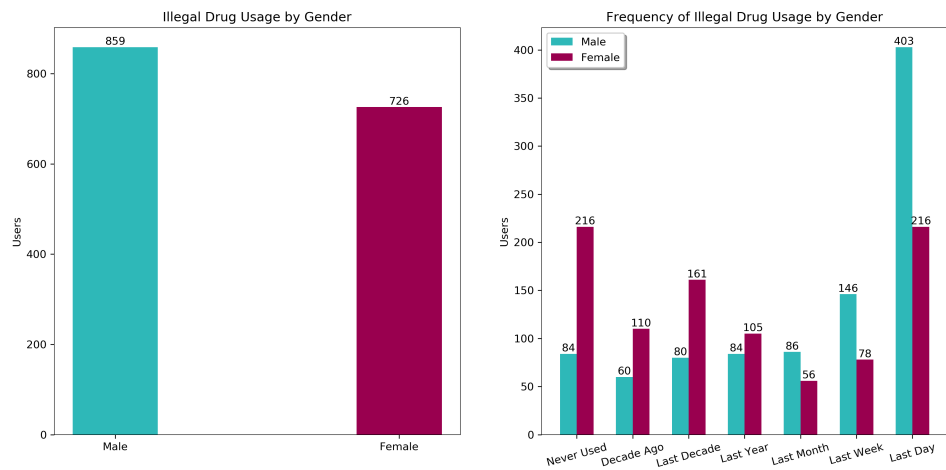


Figure 3: Illegal Drug Usage by Personality Trait

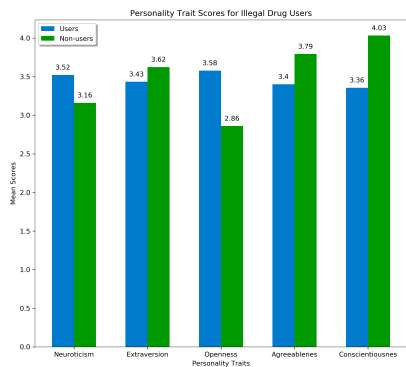
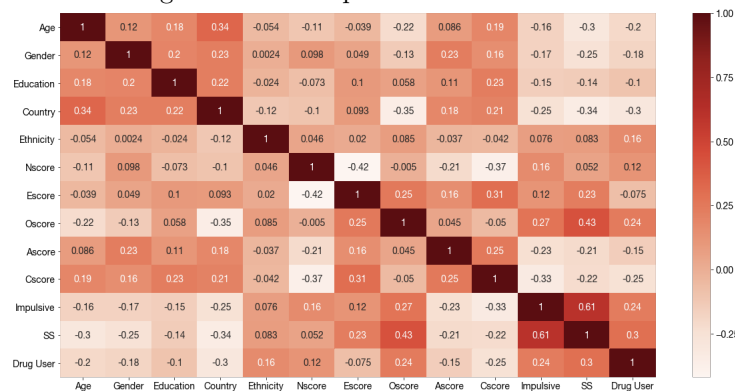


Figure 4: Heatmap of Correlation Matrix



5. Data Modeling

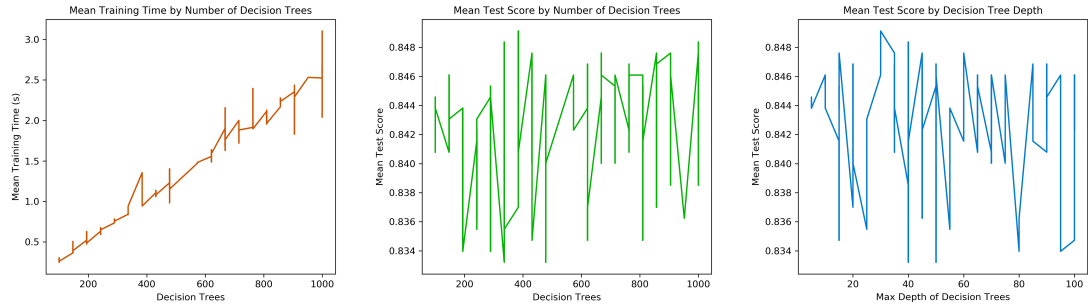
Decision Tree Classifier

Random Forest Classifier

Feature Selection

Grid Search

Figure 5: Hyperparameter Tuning with Grid Search



We performed grid search on 30,240 random forests by varying the number of estimators and the configuration for the base estimators provided to each random forest.

Clustering

6. Results