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Fraud Detection with XGBoost and LightGBM: Using SMOTE and Model Weight Tuning

- **Libraries and Tools used:**
  - pandas
  - seaborn
  - matplotlib
  - xgboost
  - imblearn
  - sklearn
  - numpy
  - lightgbm

- **Preprocessing:**
  - StandardScaler from sklearn
  - SMOTE from imblearn for oversampling

- **Model Selection and Training:**
  - Cross Validation with cross_val_predict from sklearn
  - GridSearchCV from sklearn for hyperparameter tuning
  - xgboost and lightgbm models used

- **Evaluation Metrics:**
  - Confusion Matrix
  - Precision, Recall and F1-score
  - Precision-Recall Curve
  - Area Under the Curve (AUC)
  - Average Precision Score

- **Visualization:**
  - matplotlib and seaborn used for visualizing results