

CMS Predictive Analysis: Facility Affiliation Modeling

Overview

This report documents the steps taken to build a predictive model for estimating the number of facility affiliations per clinician based on demographic and specialty data.

Features Used

- Primary Specialty
- State of Practice
- Gender
- Telehealth Involvement
- Medical School
- Graduation Year (converted to experience)

Model

✓ Model: Random Forest Regressor (100 trees)

Model Performance

RMSE: 1.19

MAE: 0.69

R² Score: 0.6008

Feature Importance Plot

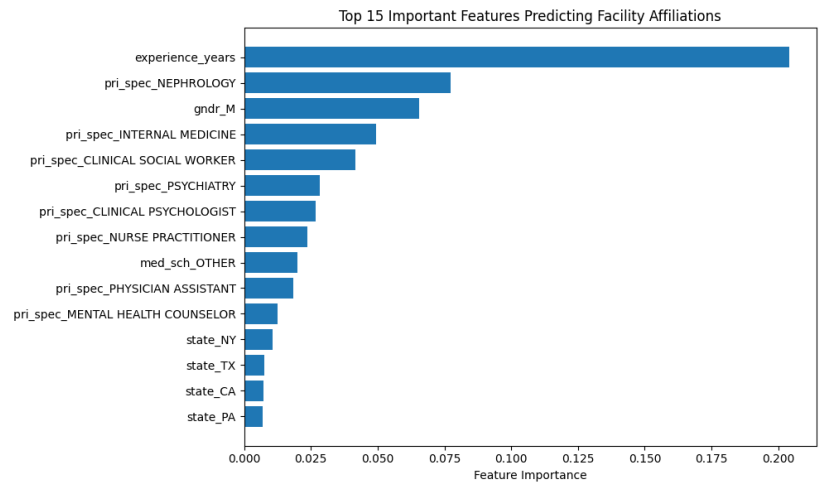


Figure 1: Feature importance scores from the Random Forest model predicting number of facility affiliations

Model Artifacts

Model File: models/facility_affiliation_model.joblib

Preprocessor: models/preprocessor.joblib