

Predictive Modeling at Blue Cross Blue Shield

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PMPM Risk Cost Prediction

- Built predictive models for monthly cost per member (PMPM) from insurance claims.
- Segmented members into risk strata using pharmacy, clinical, and demographic data.
- Integrated statistical and machine learning approaches for better coverage prediction.

Model Optimization Approach

- Applied multi-objective optimization to balance accuracy, robustness, and interpretability.
- Used SHAP for global/local feature impact to inform model selection.
- Sensitivity analysis guided feature engineering and model simplification.

Real-Time Deployment Diabetes Adherence

- Deployed models for live PMPM scoring in production pipelines.
- Built adherence models for diabetes management, identifying high-risk non-adherent patients.
- Detected fraud risk with anomaly detection and outlier profiling.
- Delivered clear dashboards for healthcare managers and clinicians.

Summary

- Combined interpretability (SHAP), performance, and production-readiness.
- Demonstrated real-world impact on care delivery and fraud detection.
- Multi-objective AI framework ensured robust and scalable model deployment.

Thank You

Questions or discussion?

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