VI Home Assignment

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Reducing WellCo Churn

WellCo is experiencing member churn - but traditional outreach wastes resources on the wrong people

OUR INNOVATION: T-Learner Framework

- Isolates the *causal impact* of outreach
- Targets members who respond to intervention
- Avoids wasting resources on those who'll stay/leave anyway

Traditional	Risk Score	Call Top 20%	Wasted calls
Our Approach	Uplift Score	Call Only Those Who Benefit	Maximum ROI

Three Layers of Intelligence

1. BEHAVIORAL PULSE

- Recency: Days since last activity
- Consistency: Unique active days
- *Insight*: Recent disengagement predicts churn

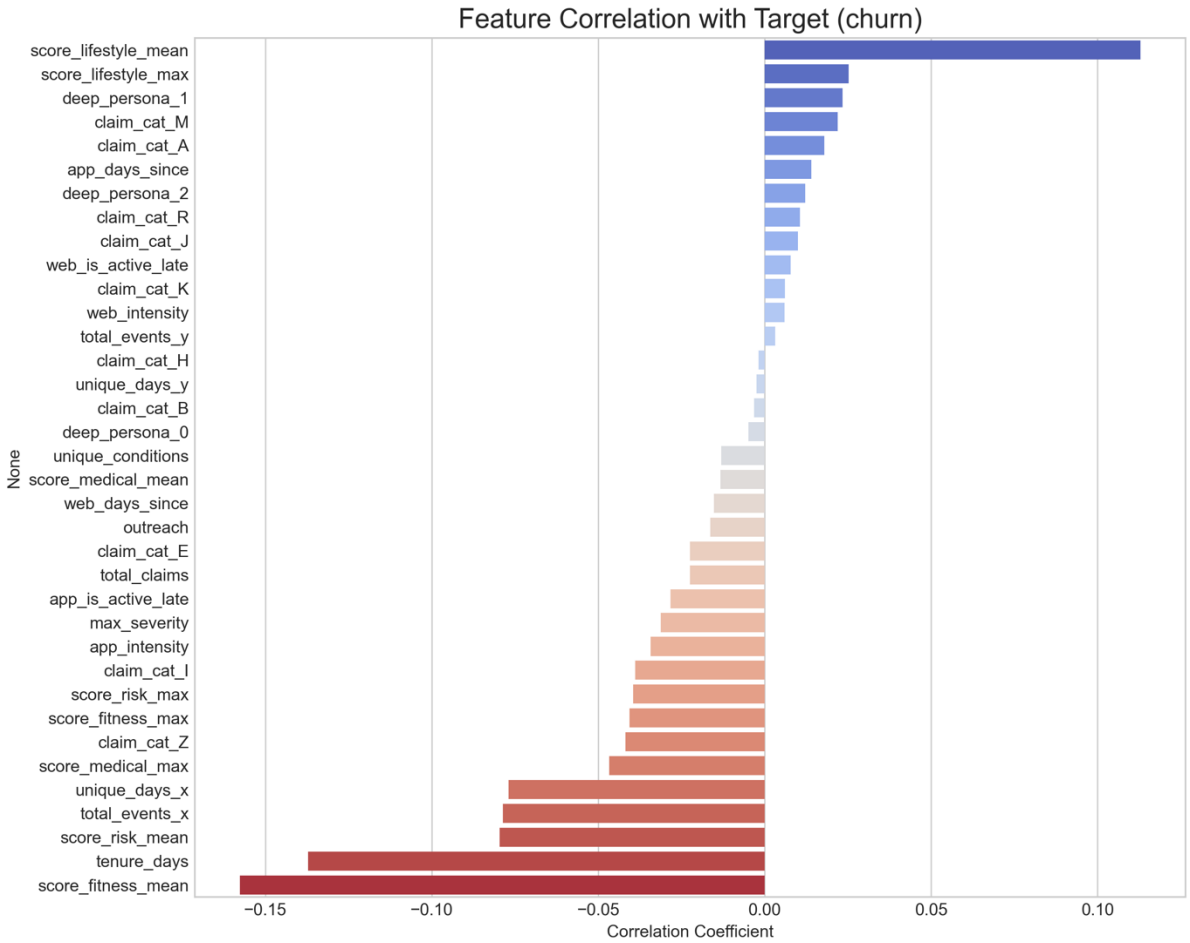
2. HEALTH SEVERITY CONTEXT

- ICD code mapping to severity scores
- *Insight*: Higher severity → Higher retention

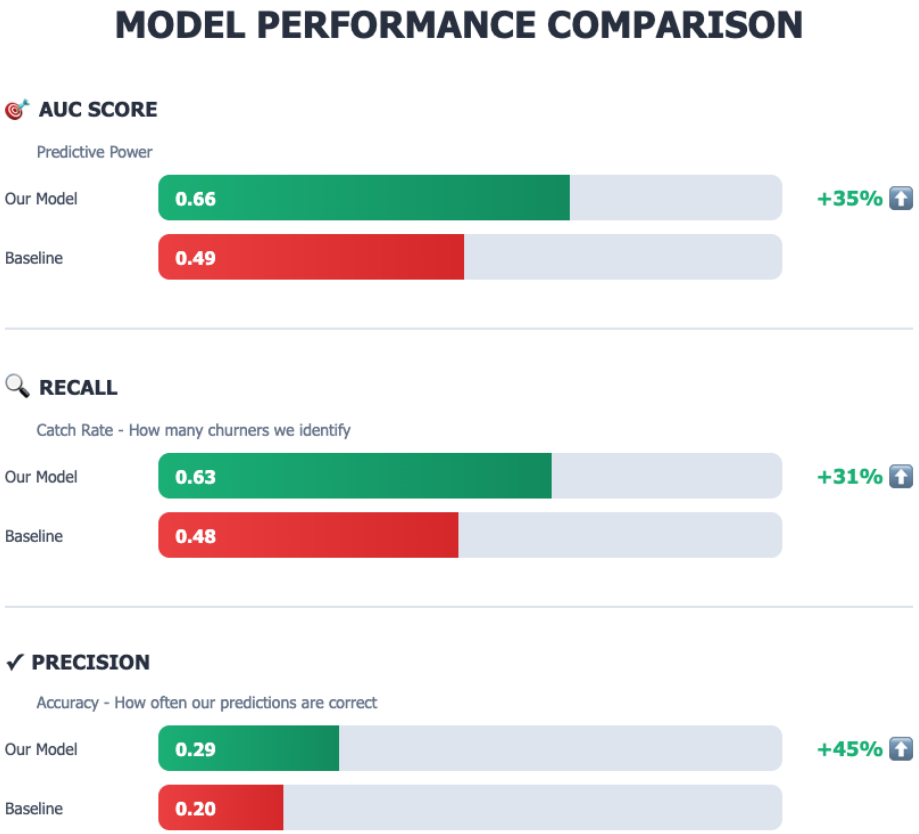
3. DEEP INTENT DETECTION

NLP analysis of web browsing patterns

- Semantic embeddings detect subtle signals
- *Insight*: Catches intent traditional metrics miss



Validated Performance: Significant Improvement Over Baseline



WHAT THIS MEANS:

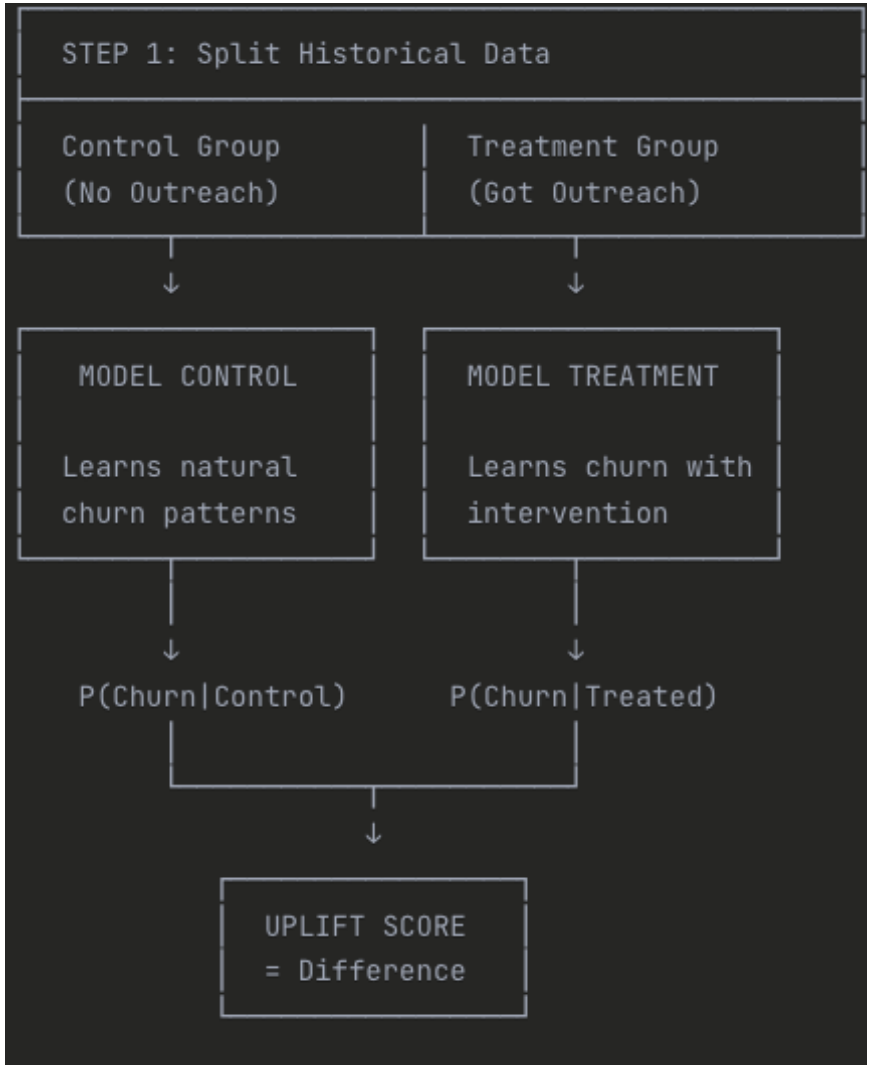
- **0.66 AUC**: Strong predictive power from just 14 days of history
- **63% Recall**: We catch nearly two-thirds of all at-risk members

The T learner Framework

THE PROBLEM WITH TRADITIONAL MODELS

Traditional Risk Score: "Who will churn?"
•Predicts probability of churn: P(Churn)
•**Can't tell who benefits from outreach**

THE SOLUTION:
We train two models: one on members who got outreach, one on members who didn't. The difference in their predictions **shows who actually benefits from contact**.



Optimal Outreach Size: A Framework, Not a Fixed Number

THE CHALLENGE Outreach cost is "unknown and marginal" - one-size-fits-all won't work

OUR SOLUTION: SENSITIVITY ANALYSIS

Instead of guessing, we built a *decision framework* that adapts to your cost structure:

HOW IT WORKS:

1. Set your cost assumption
2. Model calculates ROI for every possible list size
3. Automatically selects 'n' that maximizes net profitonw