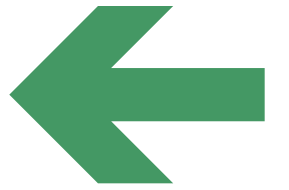


Predicting High-Traffic Recipes for Tasty Bytes

By Didi Orlog SOSSOU

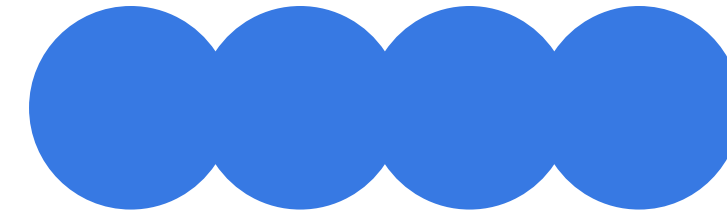
Jr Data Scientist





Business Context

- Founded 2020: Recipe search engine during pandemic
- Now: Subscription-based meal planning service
- **Problem:** Homepage recipe selection currently subjective
- **Impact:** Right recipes increase site traffic by 40%
- **Goal:** Data-driven selection process



Project Objectives

- Predict high-traffic recipes accurately
- Achieve 80% precision target
- Maximize discovery rate of traffic-generating content
- Increase subscriptions through higher site engagement
- Replace subjective selection with data-driven approach





Data Insights



- 11 recipe categories analyzed
- Nutritional variables: calories, carbs, protein, sugar
- Highly skewed distributions
- Extreme outliers (e.g., 500-3600 calorie range)
- Required robust scaling techniques



- Compared two classification models
- Implemented specialized transformations for outliers
- Optimized for precision + discovery rate
- Created custom business value metrics
- Evaluated technical and business performance

Modeling Approach





Key Findings - Performance Metrics

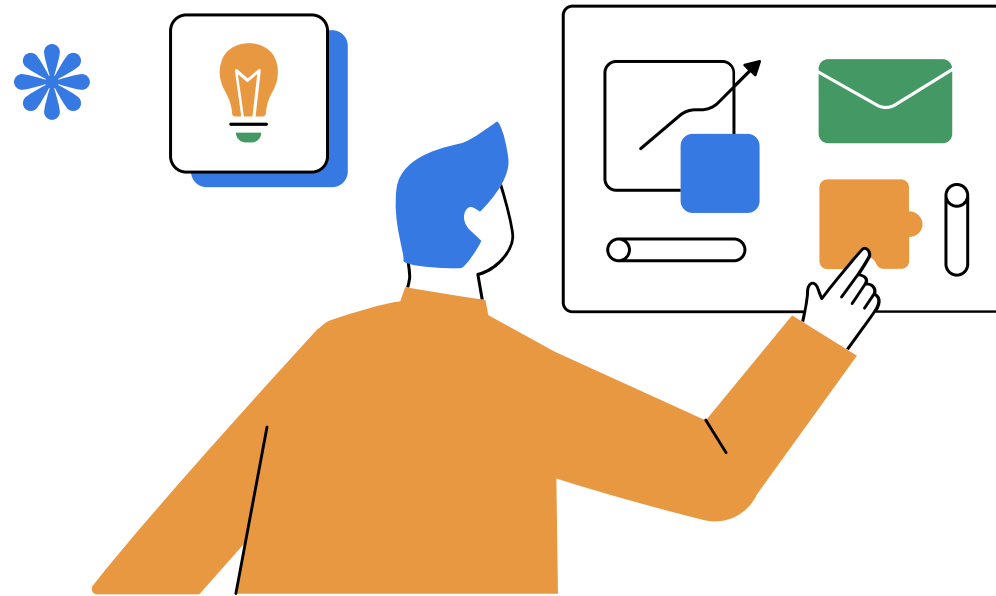


Discovery Rate (Recall)

- Logistic Regression: 67.29%
- Random Forest: 78.50%
- 11.21% improvement with Random Forest

Precision

- Logistic Regression: 86.75%
- Random Forest: 81.55%
- Both exceed 80% target



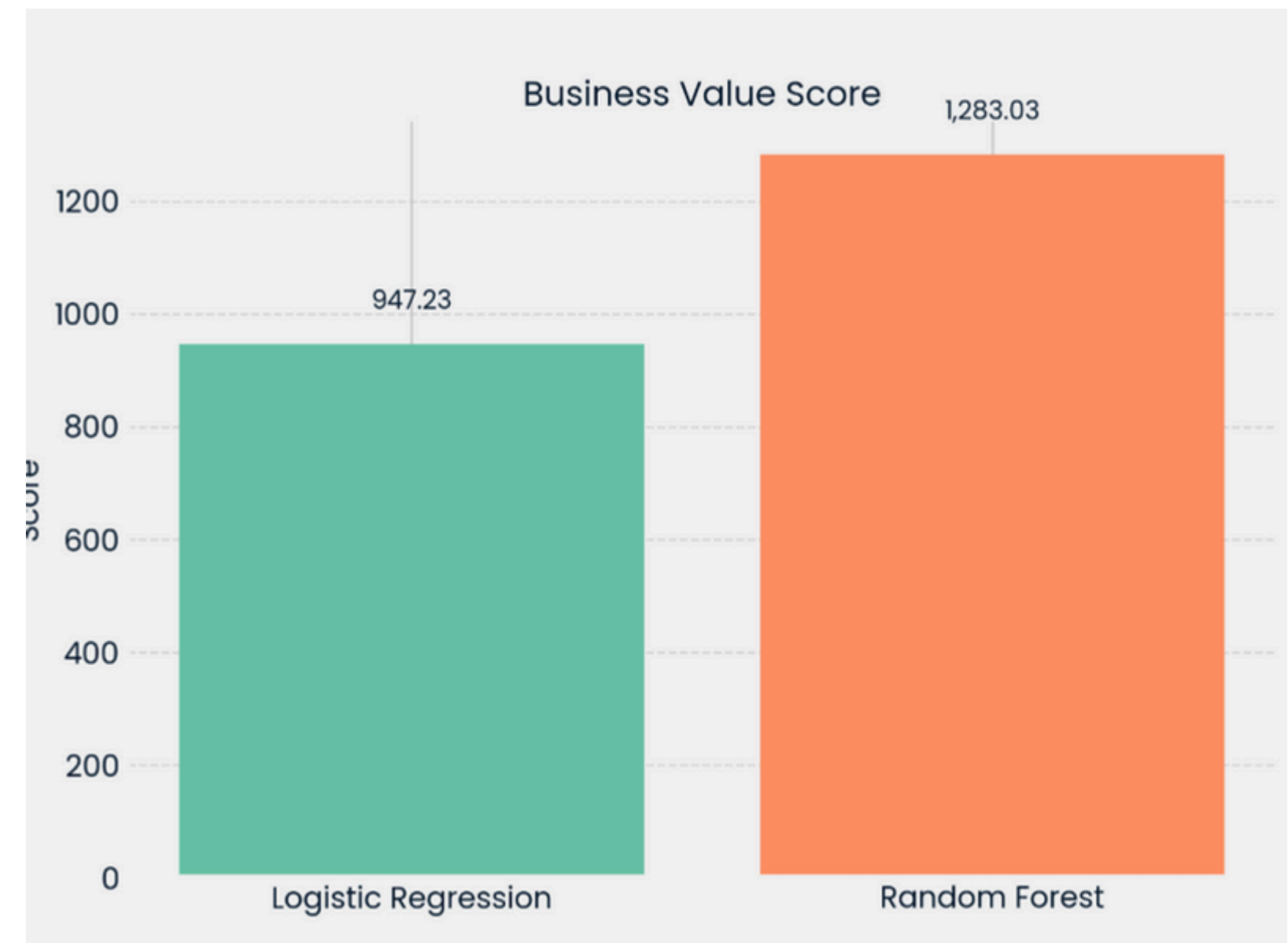
Key Findings - Business Impact

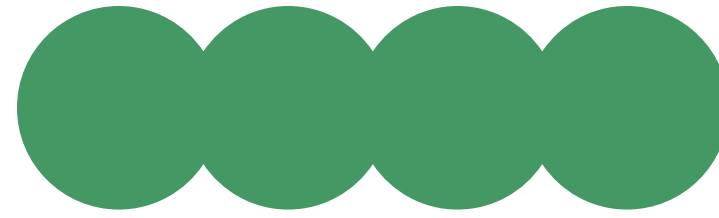
01

- Business Value Score:
 - Random Forest: 1283.03 (35.4% higher)
 - Logistic Regression: 947.23

02

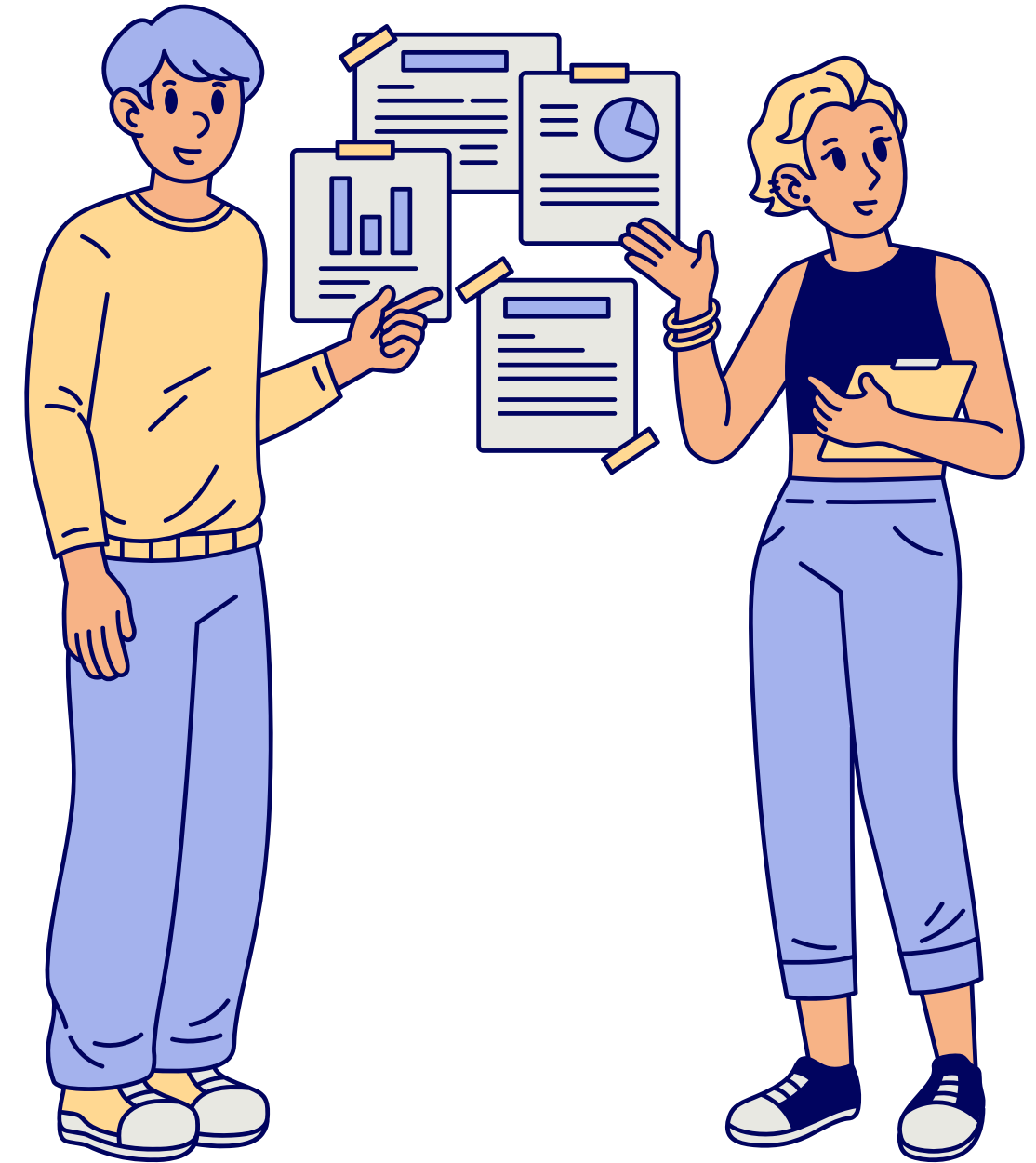
- Expected Results:
 - 33.5% traffic increase for featured recipes
 - 0.8% subscription conversion lift
 - More diverse recipe selection options





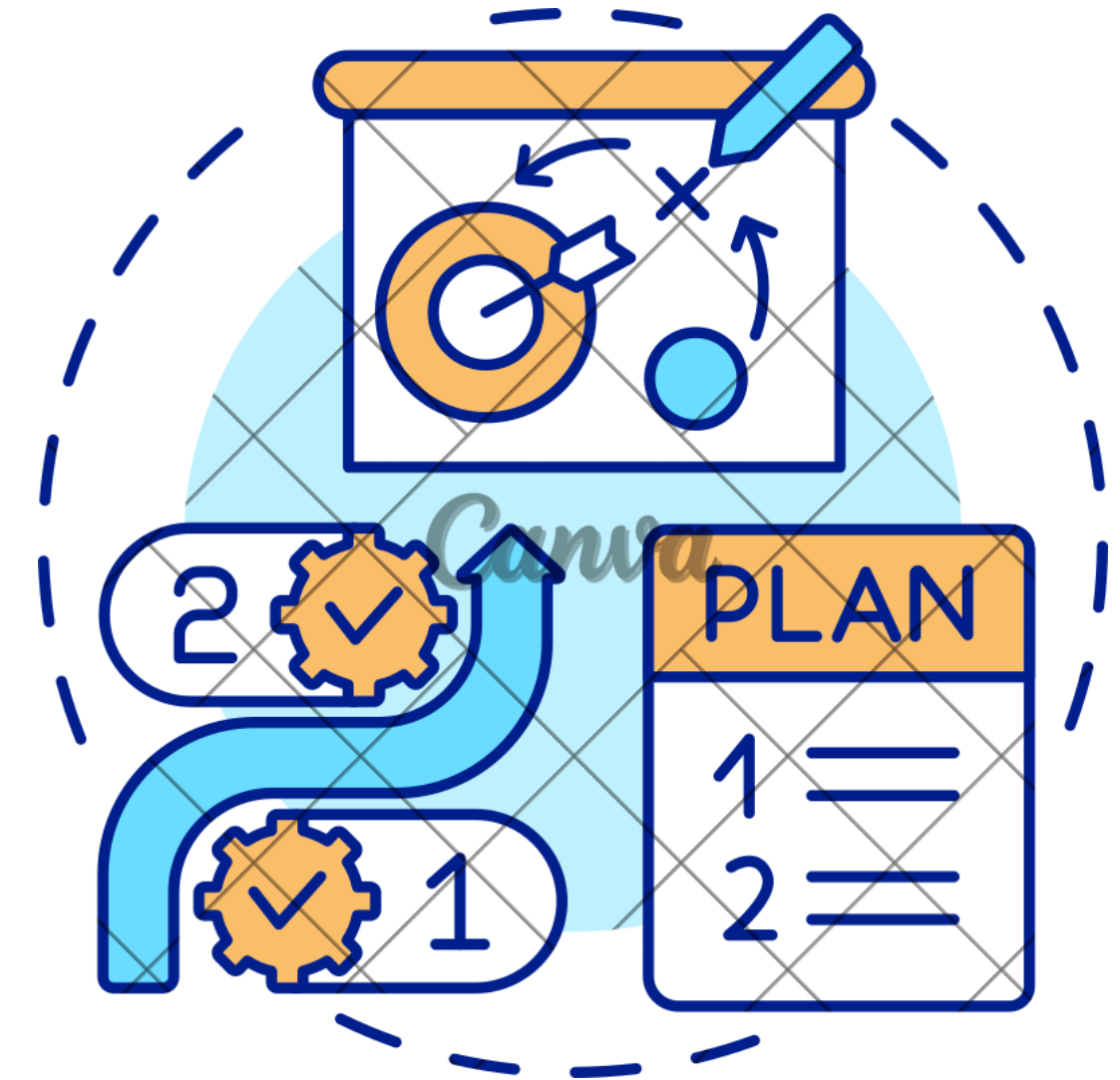
Recommendation

- **Implement Random Forest model**
- Exceeds precision target (81.55%)
- Discovers significantly more high-traffic recipes
- Delivers highest business value (35.4% improvement)
- Provides better balance of precision and recall ($F1 = 0.80$)



- **Integrate with content management system**
- **Create recommendation dashboard for Recipe team**
- **Implement A/B testing framework**
- **Track actual vs. predicted performance**
- **Establish continuous feedback loop**

Implementation Plan & Next Steps



- **Enhance model with seasonal trends**
- **Develop user segment targeting**
- **Move toward personalized recommendations**
- **Expand to weekly meal plan optimization**
- **Regular model retraining pipeline**



Thank You