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AUTO MACHINE LEARNING AND MACHINE LEARNING OPS

AVISO ENTERPRISE MACHINE LEARNING

Customer Data

CRM

ERP

RDBMS

HCM

Email / Calendar

Conference Call

ML Core

Variable Transformation

Feature Extraction

Model Selection

Hyper Parameter Tuning

Model Building

Ensemble Models

Speech Technology

Natural Language Processing

Predictive Analytics

Recommendation Engine

Time Series Forecasting

Optimization

AI Insights

Sales Forecast

WinScore

Booking Timeline

Pull-In / Pacing

Pipeline Build / Health

Forecast Insight

Notification

Meeting Transcripts

Activity Relationship

Activity Autologging

Score History

Forecast Explanations

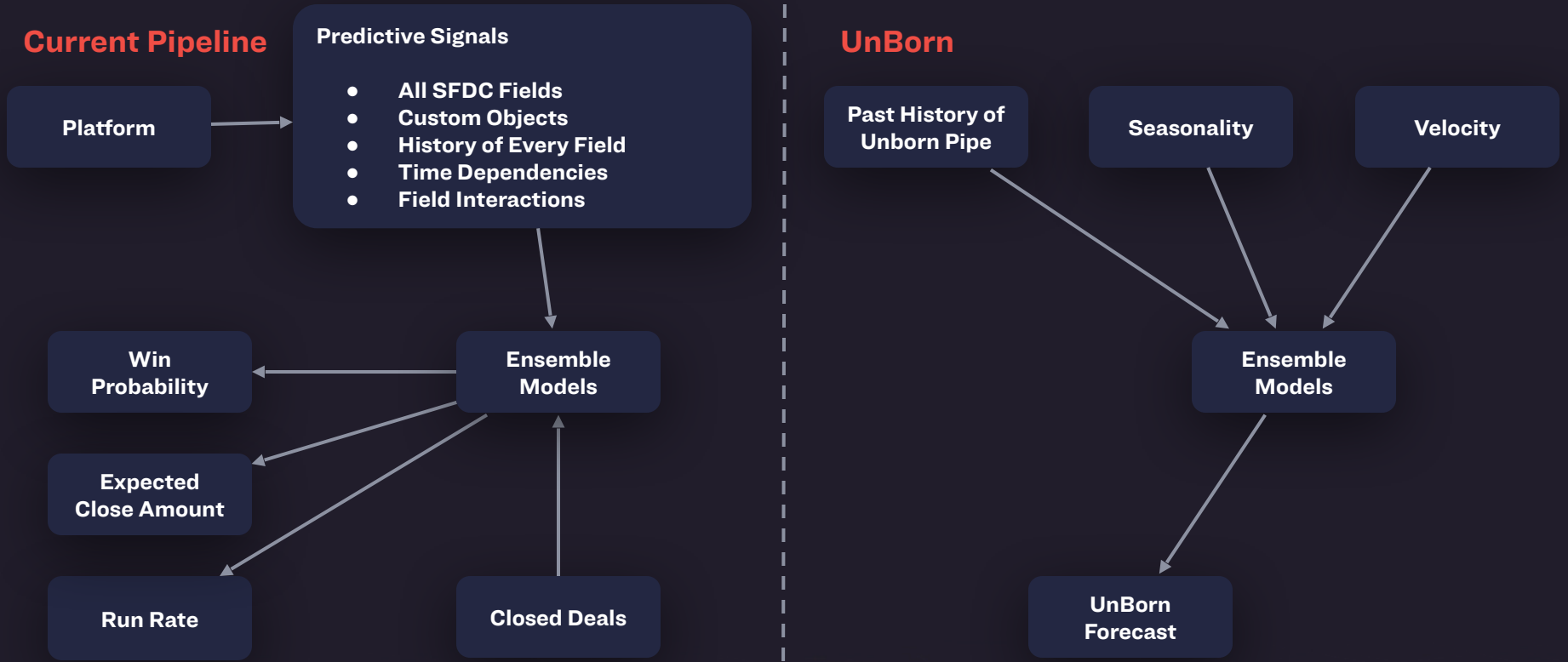
Milestone Projections

Deal Amounts

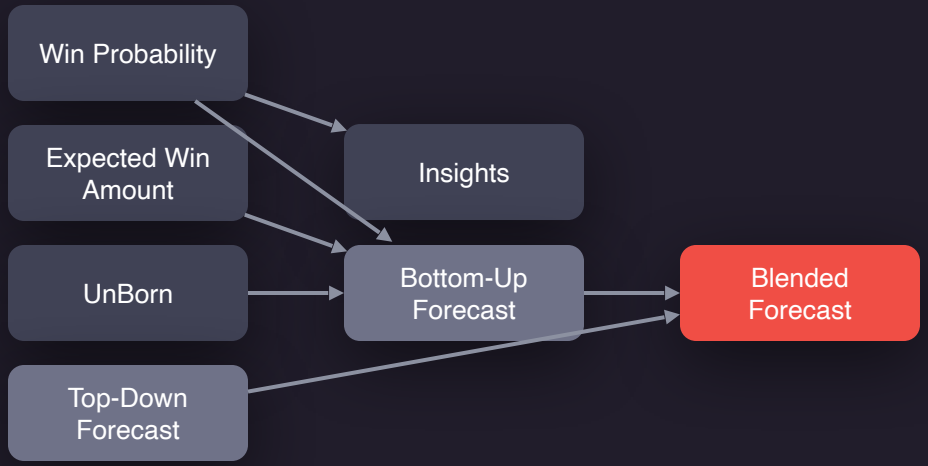
People Matching

Ideal Customer Profile

FACTOR BASED MACHINE LEARNING ALGORITHMS



MACHINE LEARNING CORE



Enterprise Grade ML

- **ETL that adapts to data and business process changes**
- **Automated discovery of time-related features**
- **Training sets based on time horizons**
- **Framework for backtesting at relevant operating cadence**
- **Calibration for best accuracy**
- **Fast path for real time data updates**
- **Core algorithms are open-source**

ETL	Hyper Parameter Tuning	Model Results
Feature Discovery	Back-Testing	Real-Time Updates
Training Sets	Ensemble Models	Calibration

MACHINE LEARNING CORE

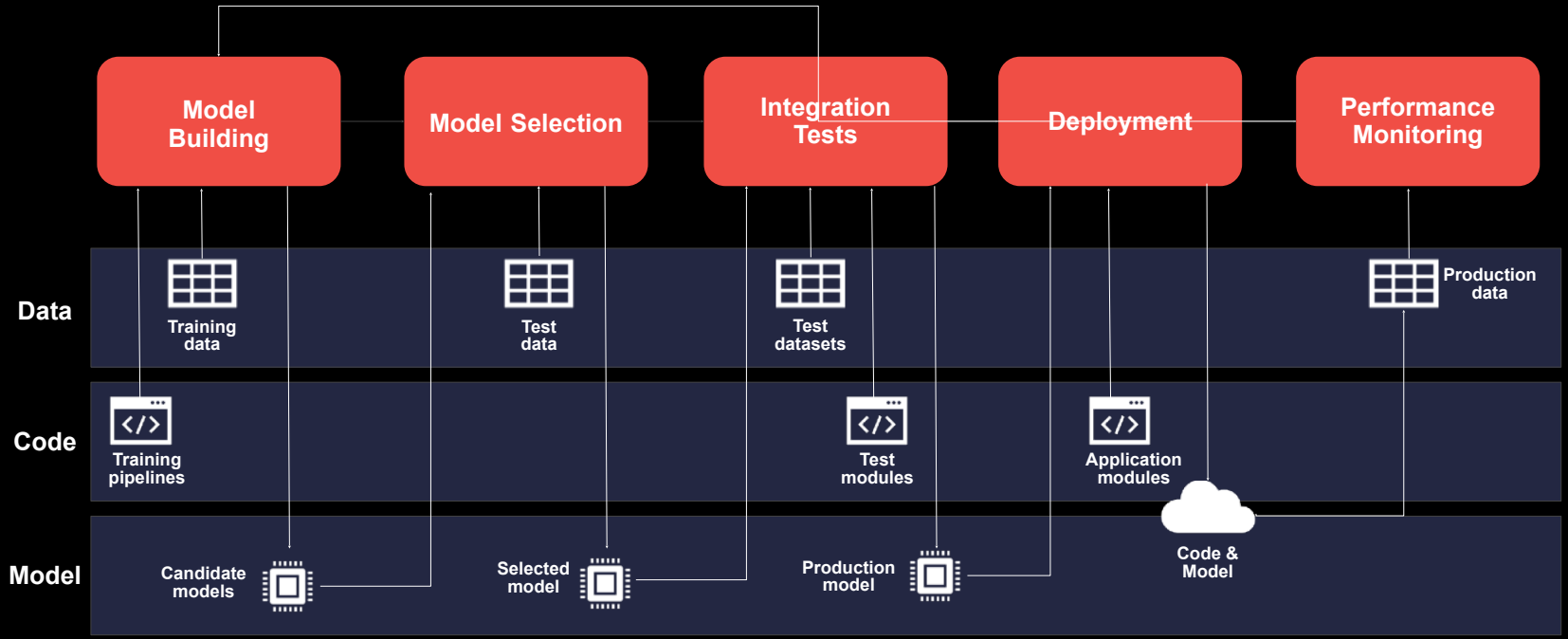
Ongoing Prediction Pipeline

- On an ongoing basis, our prediction pipeline automatically ingests and maps new data from source systems, trains models and makes predictions.
- Produces WinScores and Aggregate Forecasts for different horizons on an ongoing basis by blending an ensemble of ML models
- ML models are automatically trained and serialized as needed using training sets lazily extracted from temporal data store
- Most aspects of this pipeline are governed by a configuration file that allow us to make reasonable guarantees about smoothness and reproducibility.

Ad Hoc Reconfiguration Pipeline

- Produces a set of recommendations for optimal configuration to be used in the ongoing prediction pipeline for WinScores, starting with a base of training data used for historical predictions
- Provides recommendations for many settings that govern model performance.
    - Modeling training + Blending strategy, e.g. independent Quarterly or aggregated Monthly predictions.
    - Learning algorithm: Currently model training framework supports GBM and XGB but others can be prototyped here.
    - Hyperparameter values.
    - Features to be extracted and selected.
- Supports custom error metrics and feature selections strategies.
- Allows prototyping new feature extraction or model blending strategies without fully implementing them in production.

ML OPERATIONS



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