

## BEYOND CREDIT SCORES

# MACHINE LEARNING FOR INCLUSIVE SOLAR FINANCING



### Applying an Alternative Machine-Learning Qualification Metric: Impacts for Inclusion, Accuracy and Revenue

Background: Solstice operates EnergyScore, a machine-learning algorithm to better predict risk of default on utility payment. We reevaluate EnergyScore using 2,000 newly collected observations to test model performance.

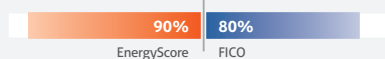
### EnergyScore, compared to a FICO (Credit Score of of 680)

#### RESULT 1

# 12.35%

more individuals qualified

#### Population Eligibility



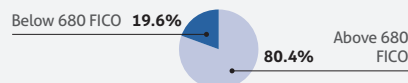
#### RESULT 2

# 6.5%

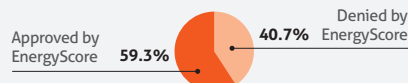
more accurate

#### Validation Results: Inclusion

#### FICO Pie Chart



#### EnergyScore Distribution of Sub-680 FICO Scores

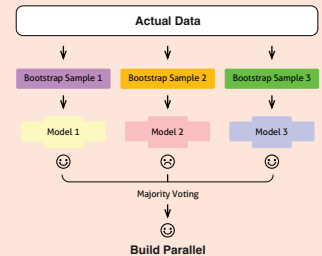


## Methods

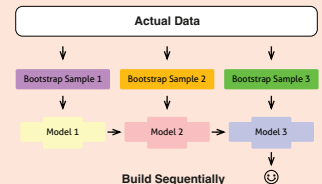
### XGBoost, Model Validation

- 1 Classify risk of default payment within 90 days using XGBoost classifier

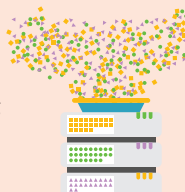
### Bagging Ensemble Method



### Boosting Ensemble Method



- 2 Validate model previously trained data on 875,000 records in 2017 using 2,000 updated credit profiles from 2023 with performance data



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