

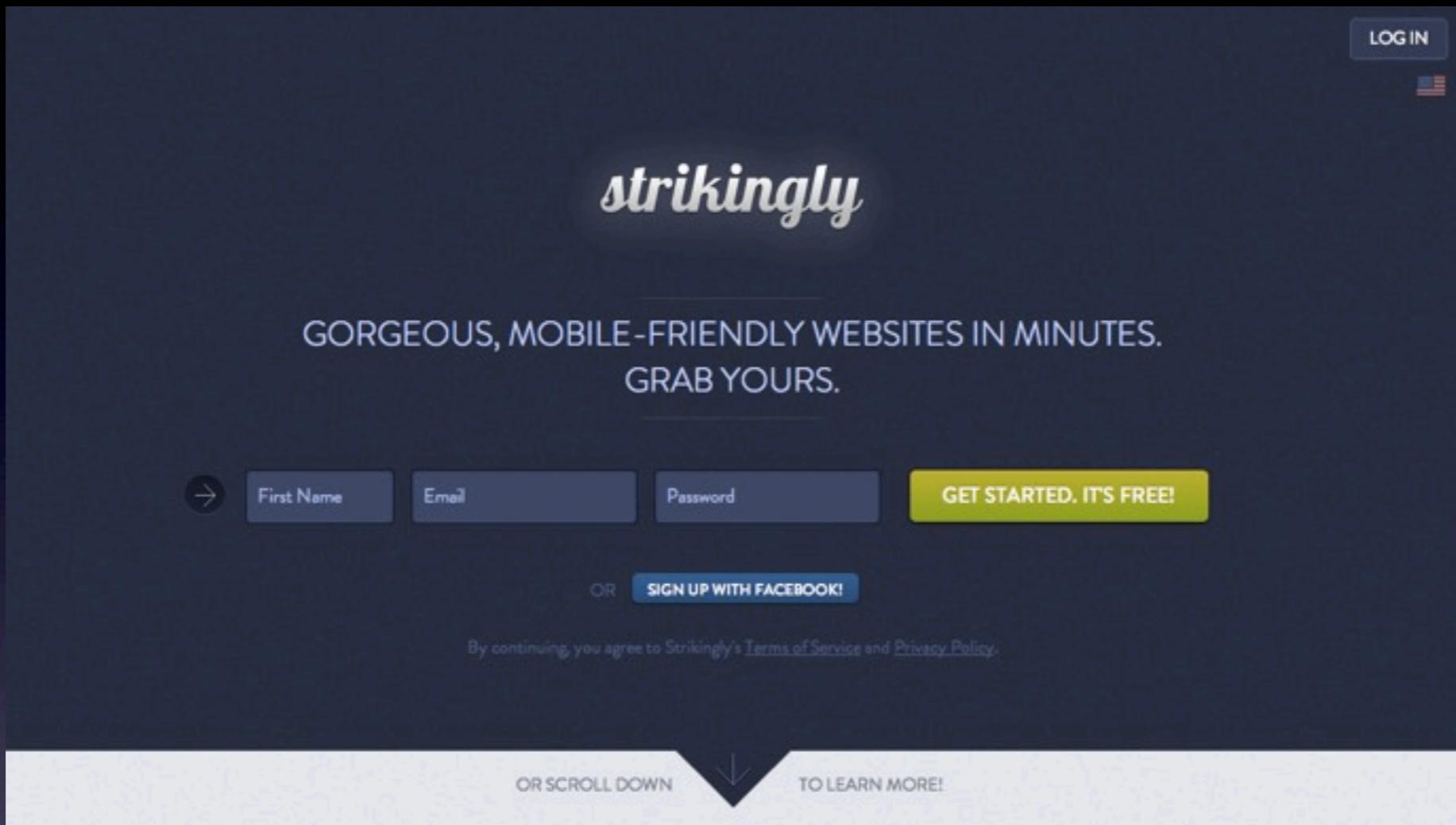
Churn Prediction at *strikingly*

Stephen Swedish

What is Strikingly?

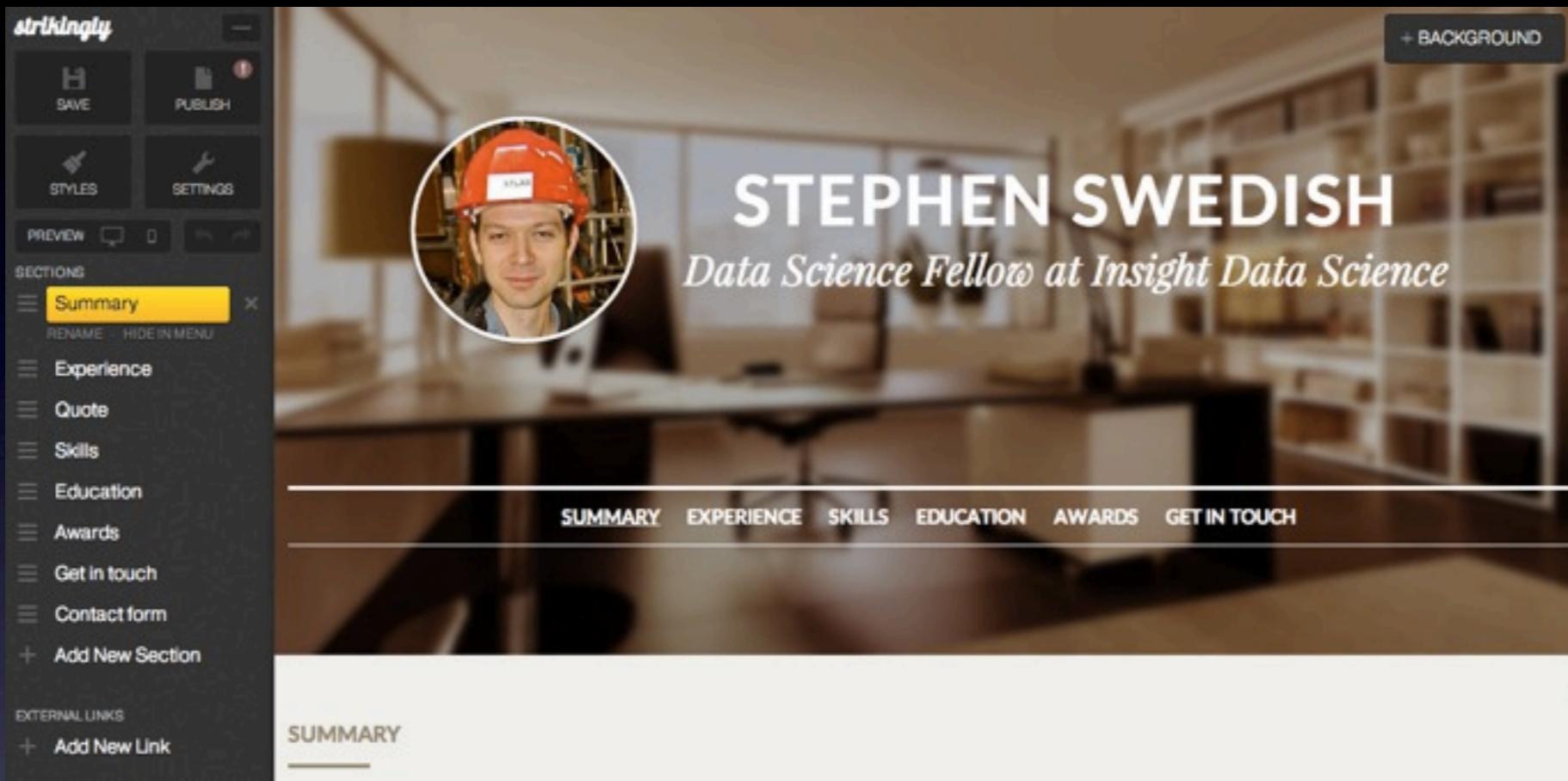
What is Strikingly?

- An online application to produce professional websites quickly and easily



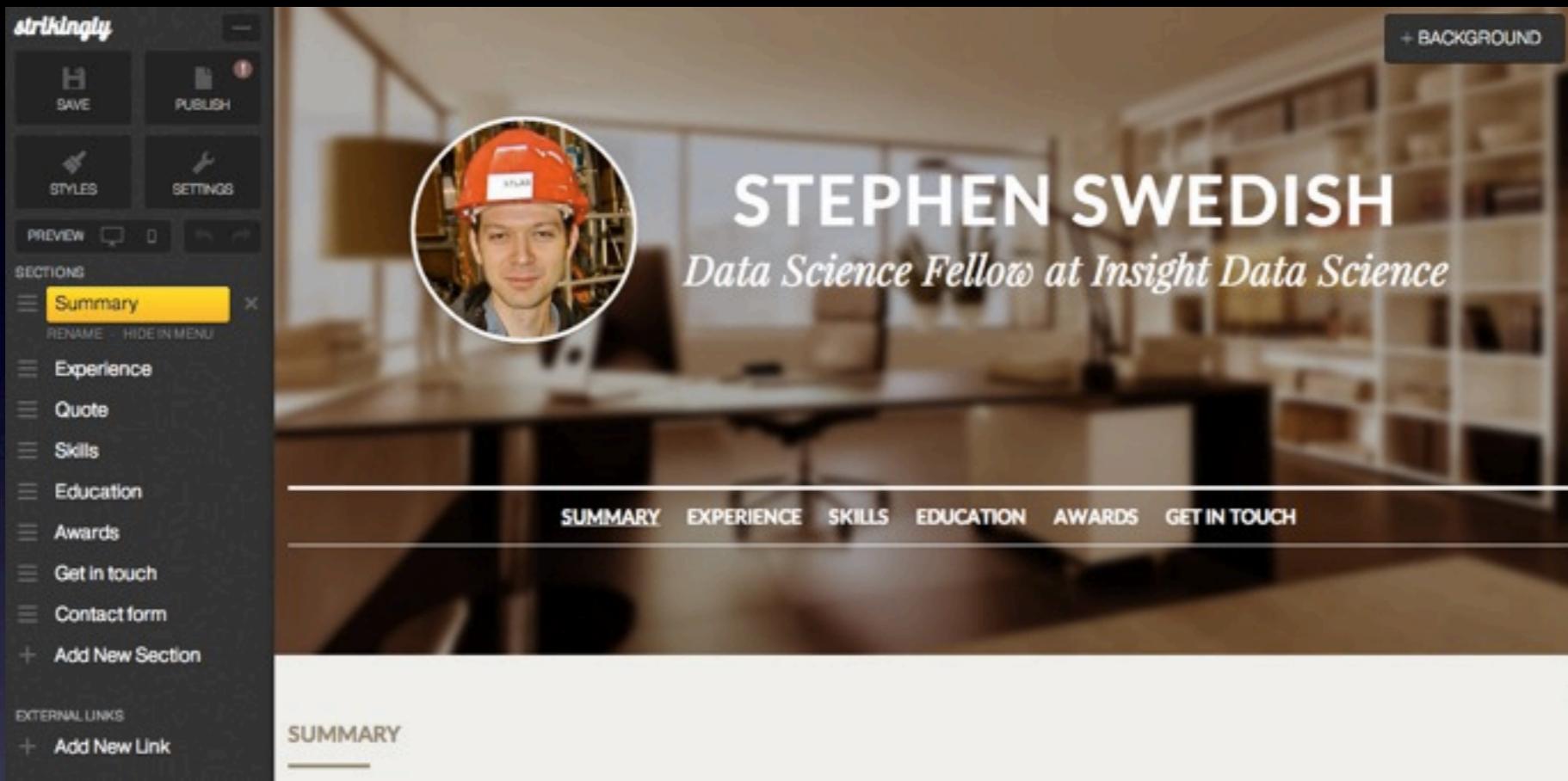
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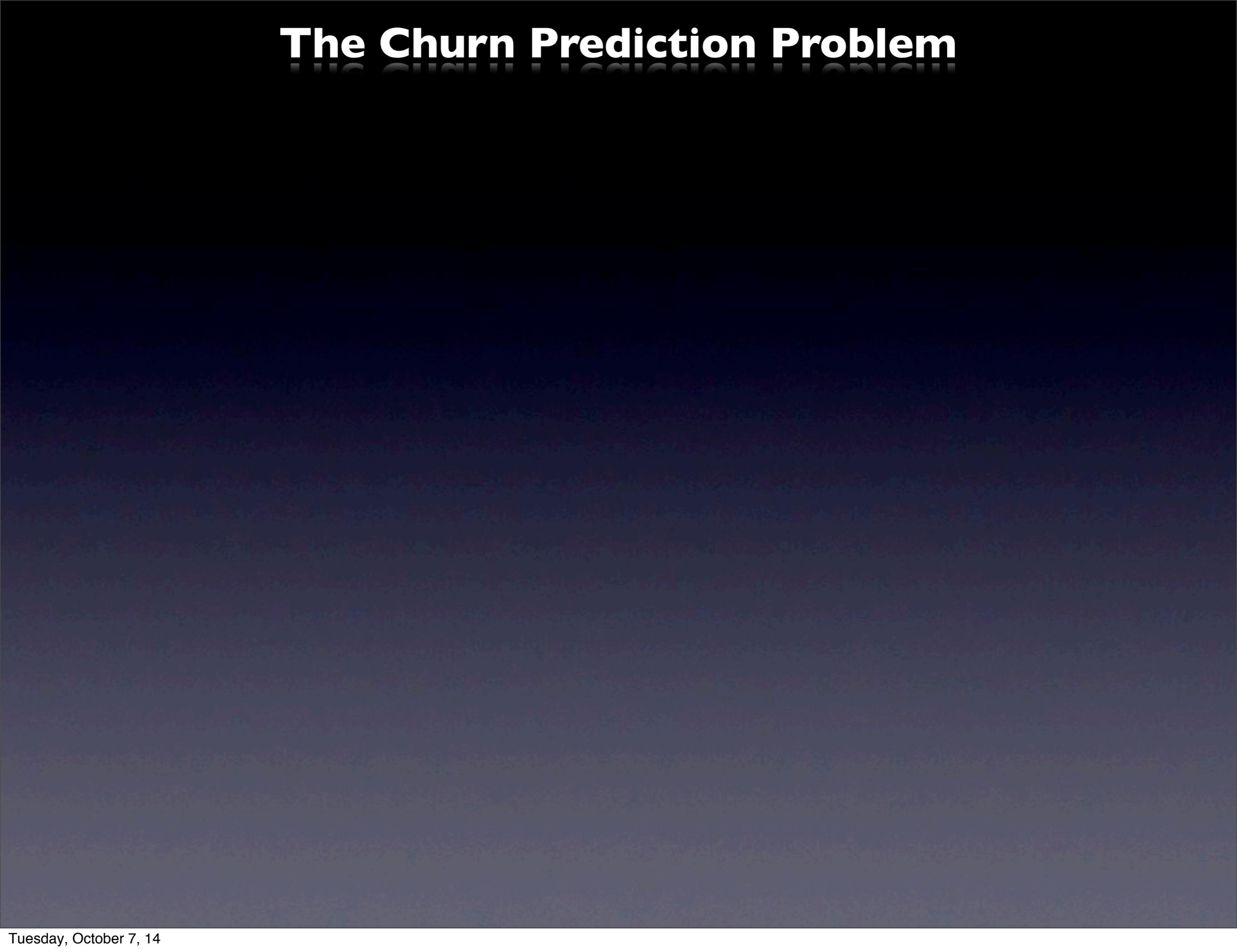
- An online application to produce professional websites quickly and easily



- Their user base consists of personal users and business users

The Strikingly homepage features a dark header with the company logo. Below the header is a large white rectangular area containing the text "Thousands of businesses, ideas, and profiles have been launched on Strikingly. What will you create?". Underneath this text is a section titled "CATEGORY" with a horizontal row of buttons labeled ALL, PORTFOLIO, PERSONAL, EVENT, BUSINESS, STARTUP, FUN, and ORGANIZATION.

The Churn Prediction Problem



The Churn Prediction Problem

Subscriber behavior can be visualized as a time-series of their activity

Time



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Preemptive Retention Strategies: e.g. subscription discounts

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True-Positive Targeting

chance of retaining user

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False-Positive Cost

resources/revenue wasted
on content customers

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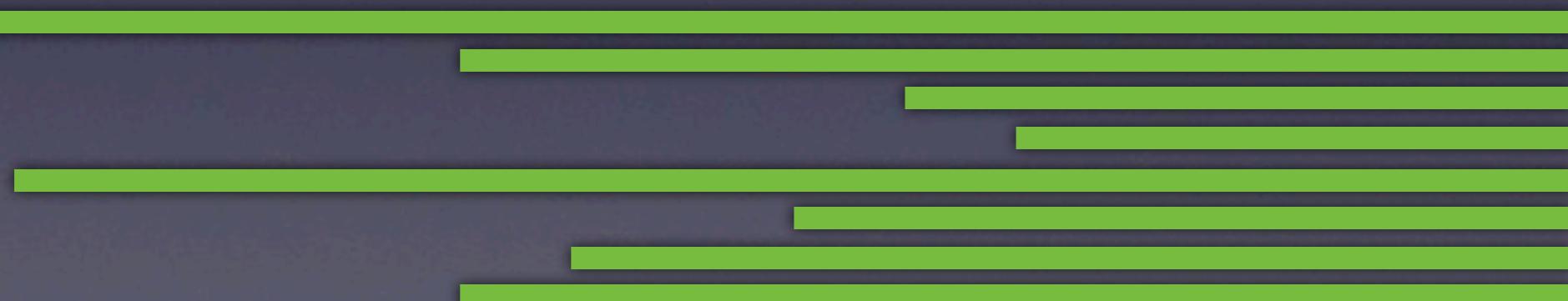


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Company wants to apply preemptive strategy weekly

↓ Sunday



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active
churned
active
active
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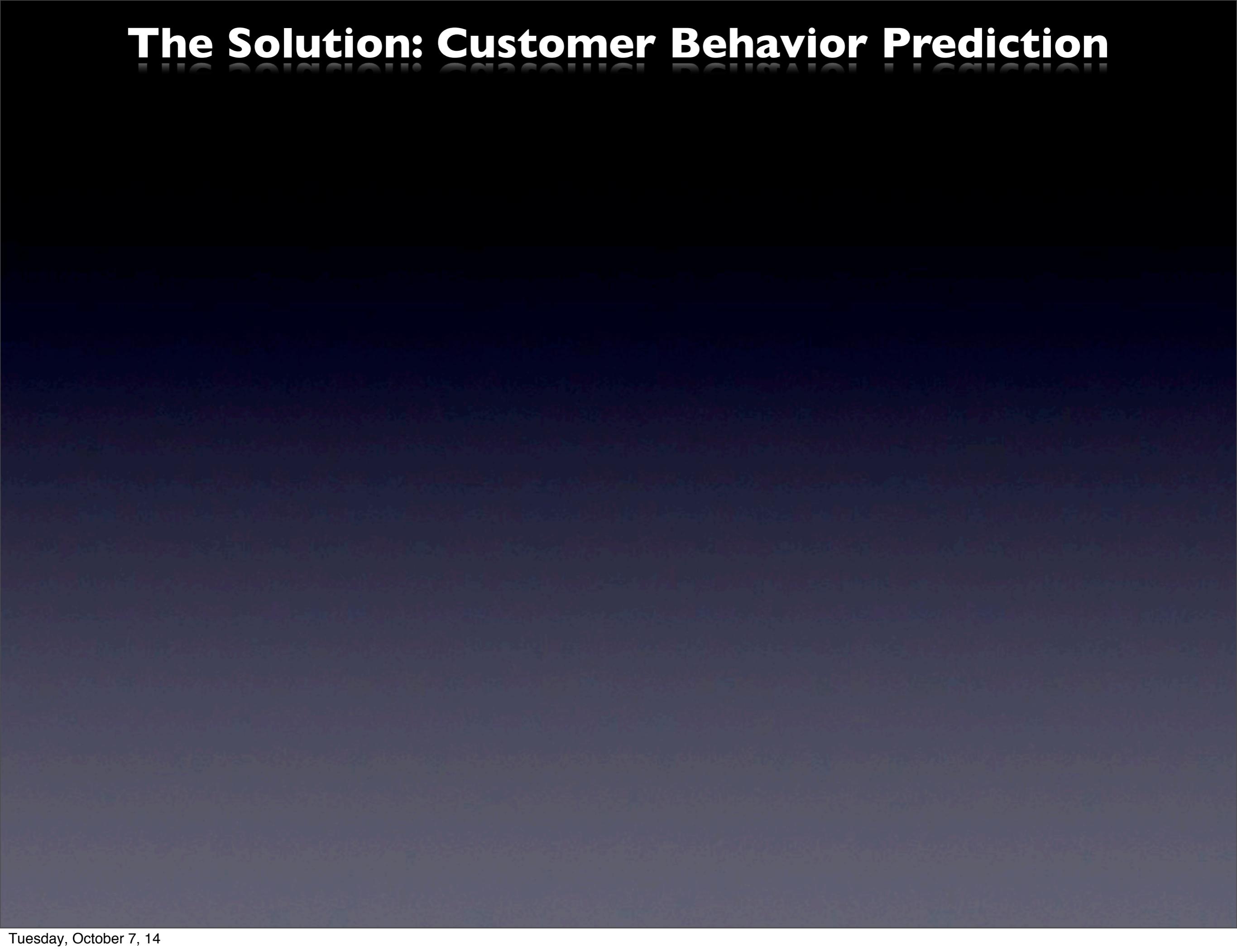
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How can we efficiently anticipate whether a user will churn in the next week?

The Solution: Customer Behavior Prediction



The Solution: Customer Behavior Prediction

Reconstruct time series activity for each user

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mixpanel



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Training Point



The Solution: Customer Behavior Prediction

Reconstruct time series activity for each user



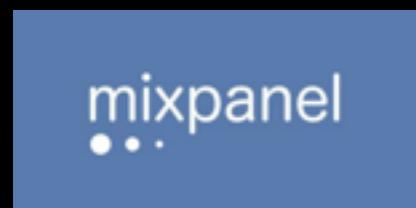
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Featurize

- Latencies
- Averages
- Variances
- Frequencies

Training Point



Lifetime Last Month Next Week

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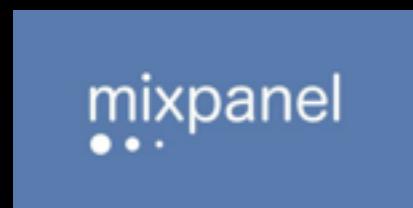
Training Point



[1.20 -0.67 -0.39 -0.40 -0.30 ...
[-0.83 -0.67 2.51 -0.40 2.13 ...
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[-0.83 1.47 -0.39 -0.40 -1.02 ...
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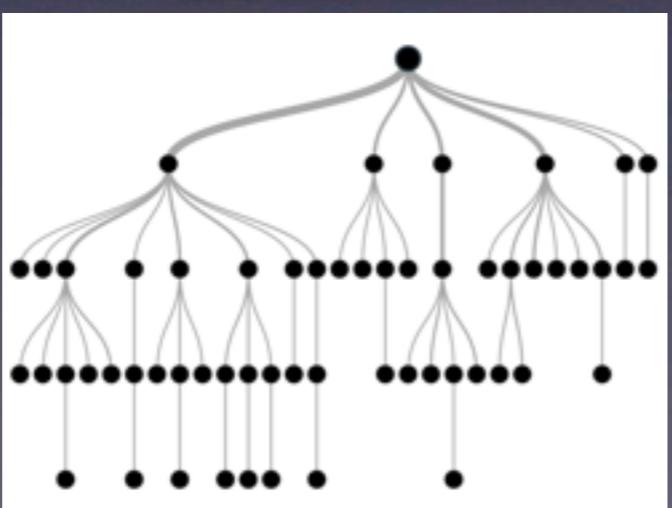
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Random Forest
Binary Classifier

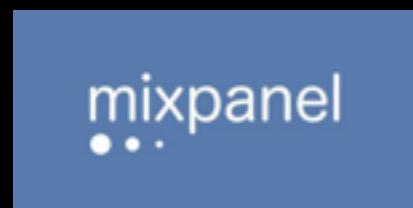


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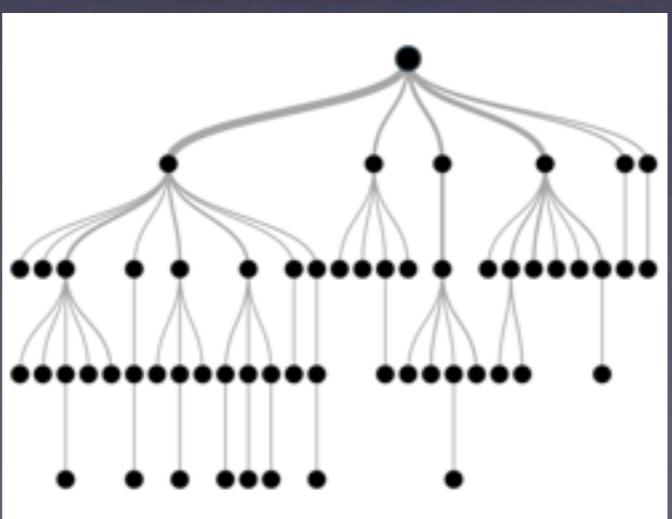
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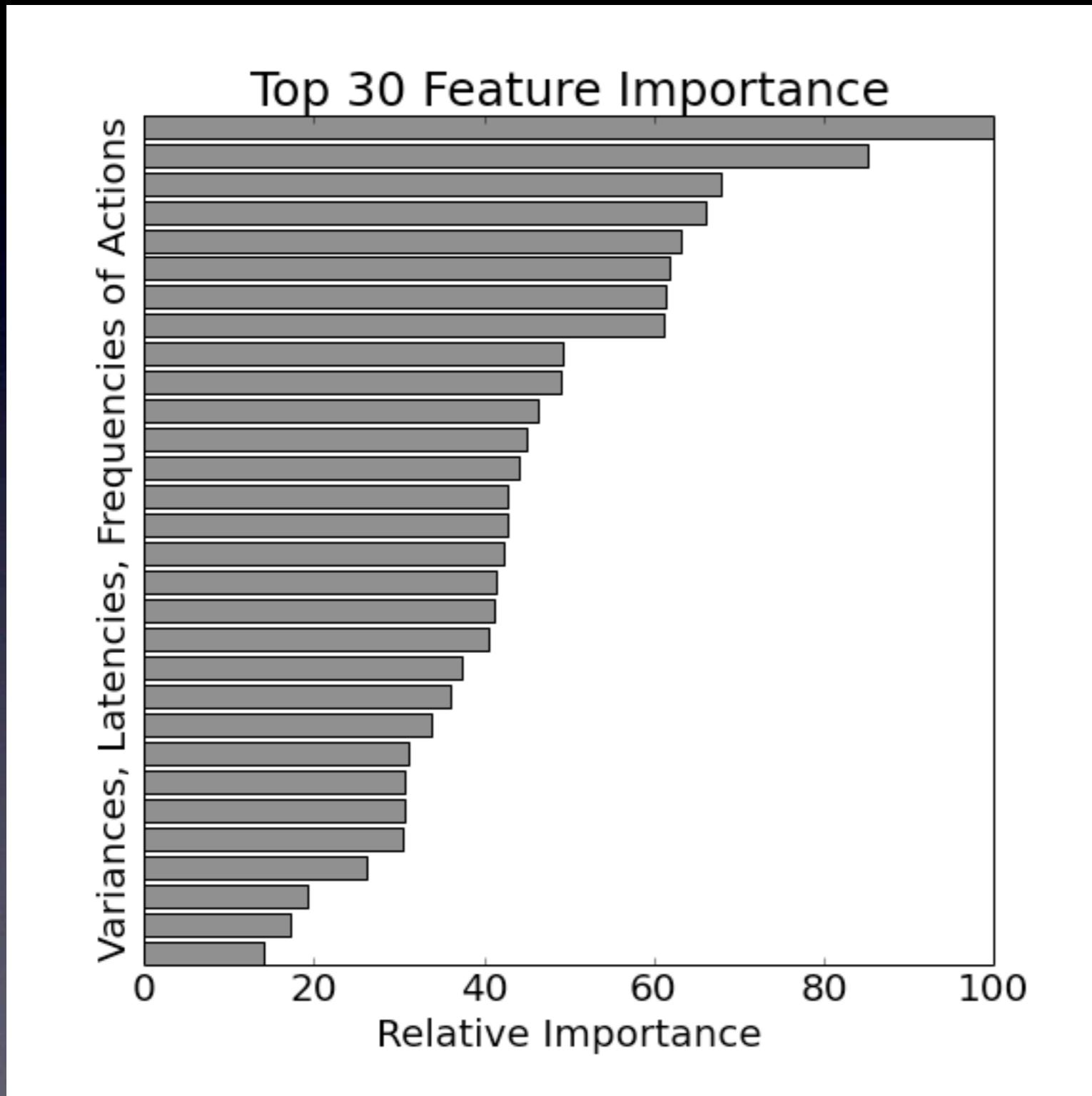
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Estimated probability on Sunday that user will churn in the following week

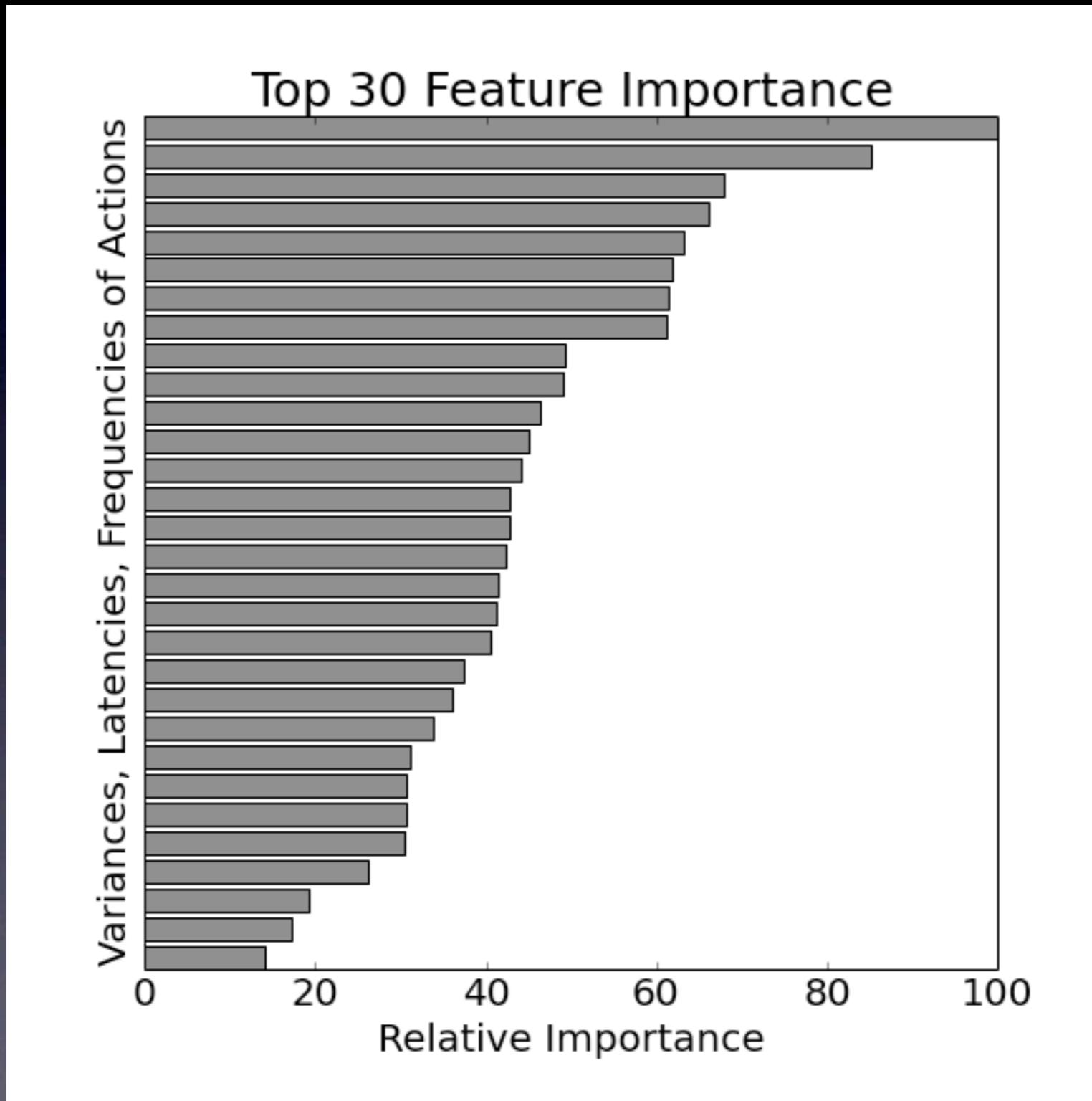
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- The algorithm identifies the behavioral dimensions most indicative of future churn



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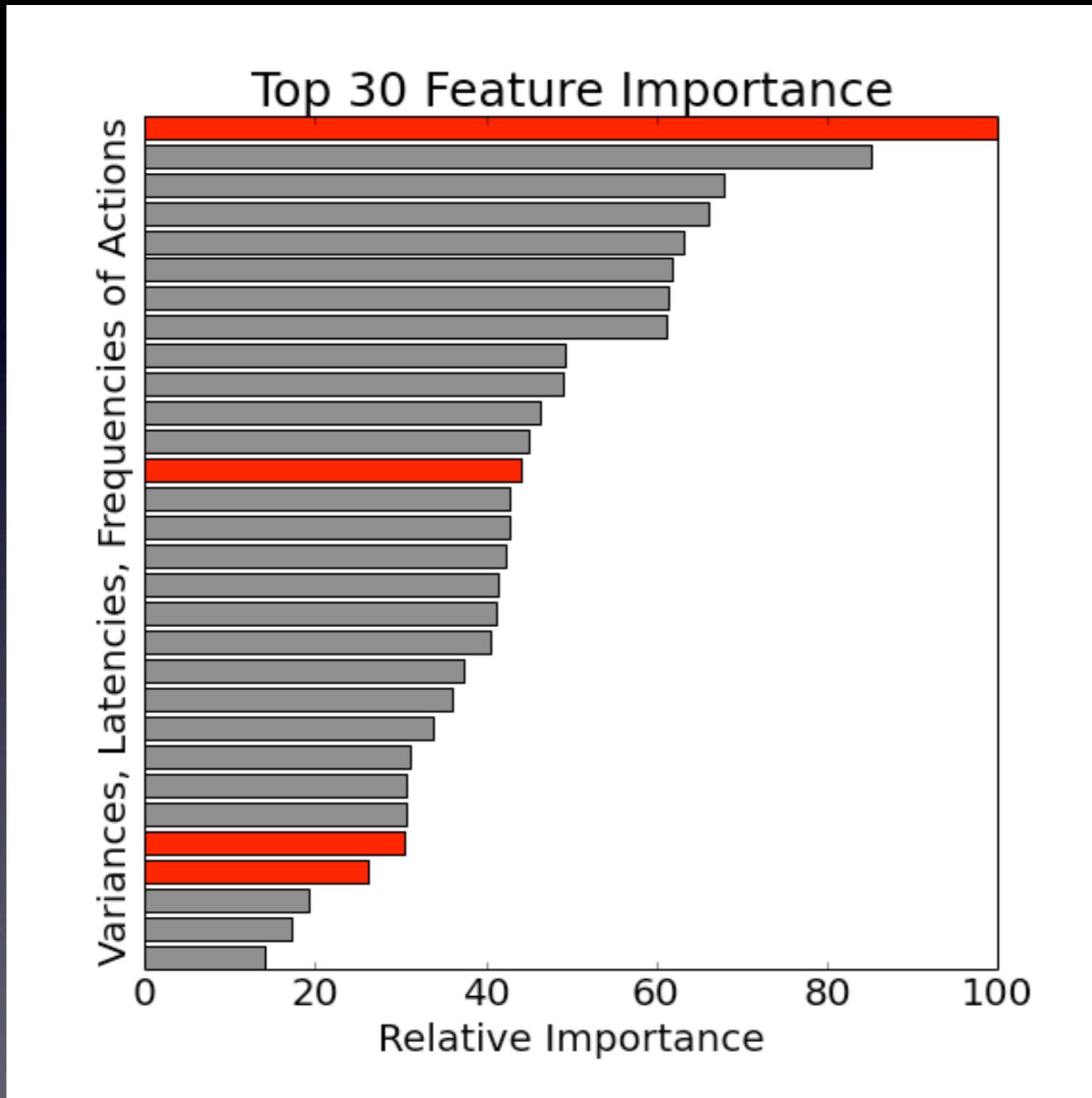
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- Hypothesis I:
Customers likely to churn
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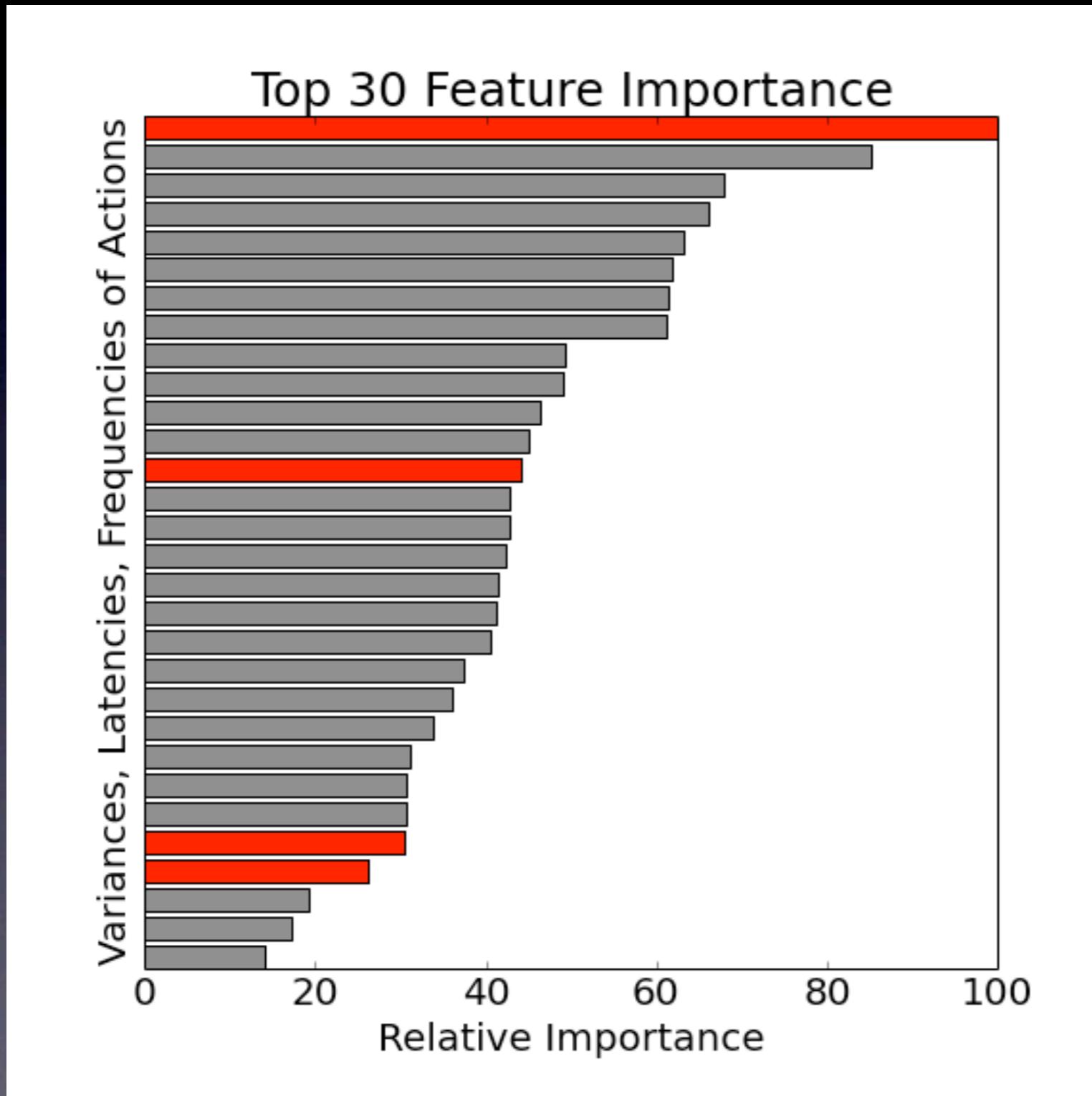
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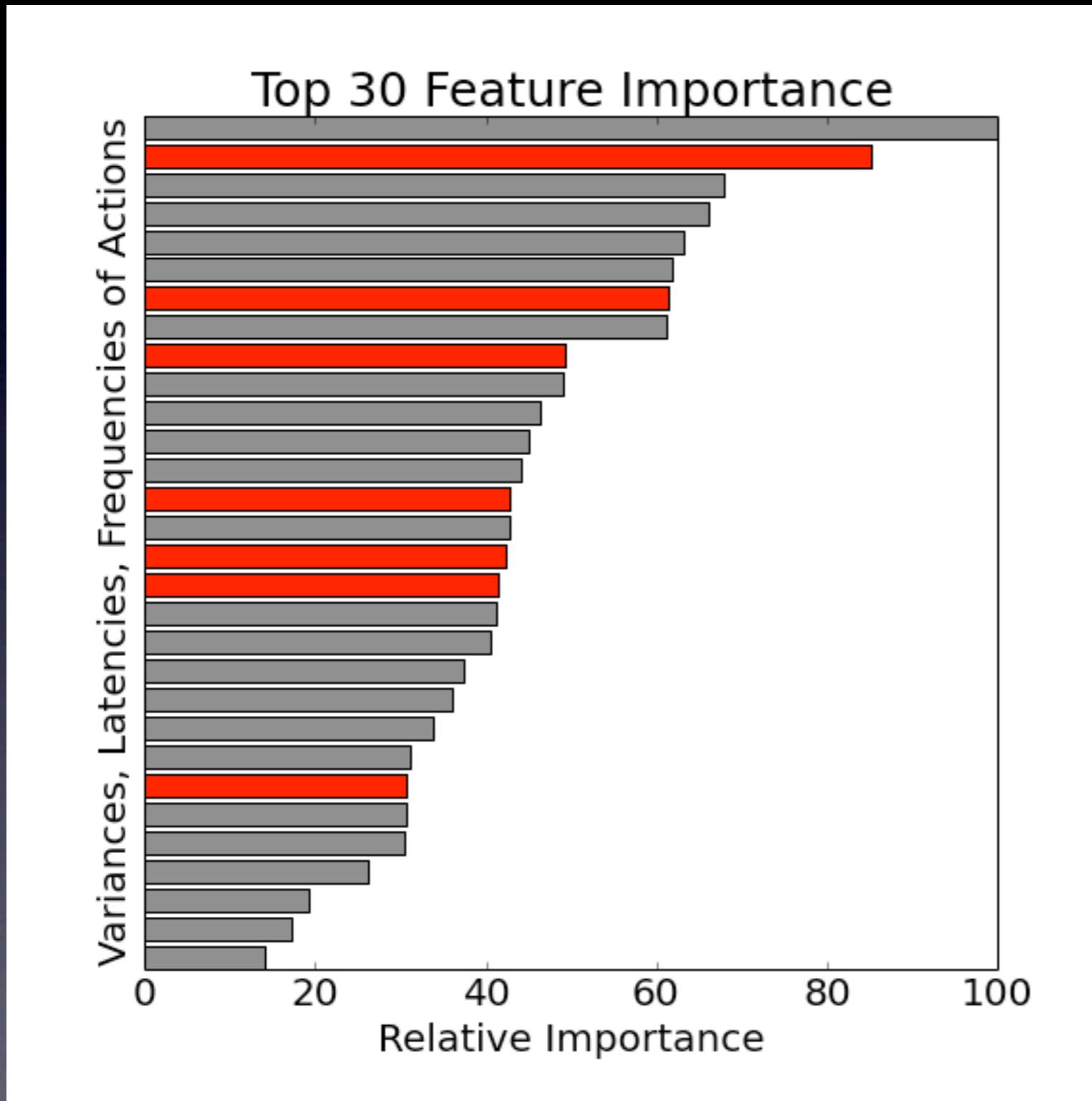
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The Deliverable: A Quantitative Churn Predictor

- Back-tested on data collected over the month following the training point.

Preemptive retention strategies depend on:

- Class of customers being target
- Customer population and churn rate
- **Churn prediction operating point**

Strikingly's first quantitative mechanism for churn prediction

vs. chance:

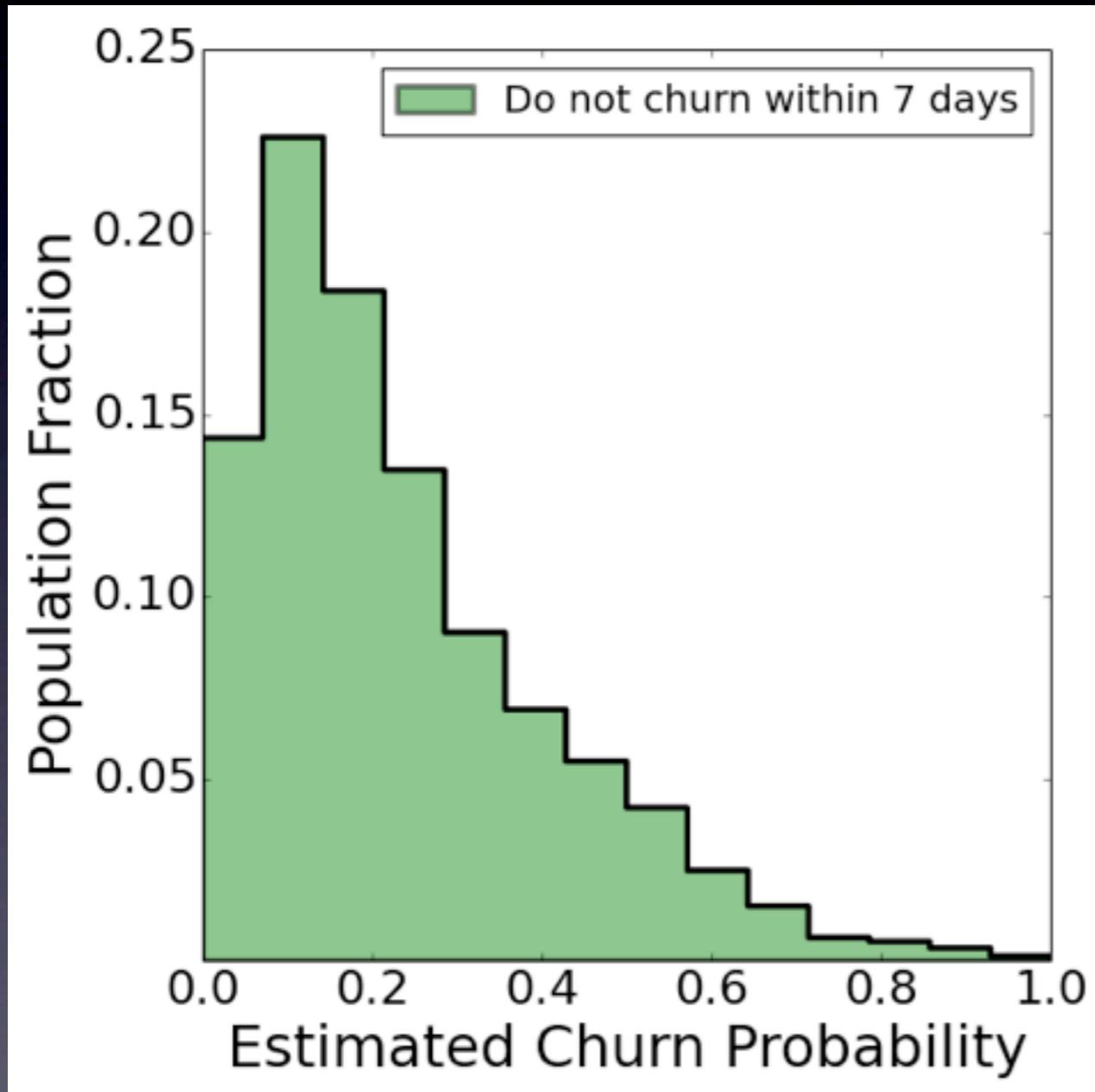
- **Target 75%** of users who will churn with **83% less false-positive cost**

vs. subscription age selection:

- **Target 80%** of users who will churn with **53% less false-positive cost**

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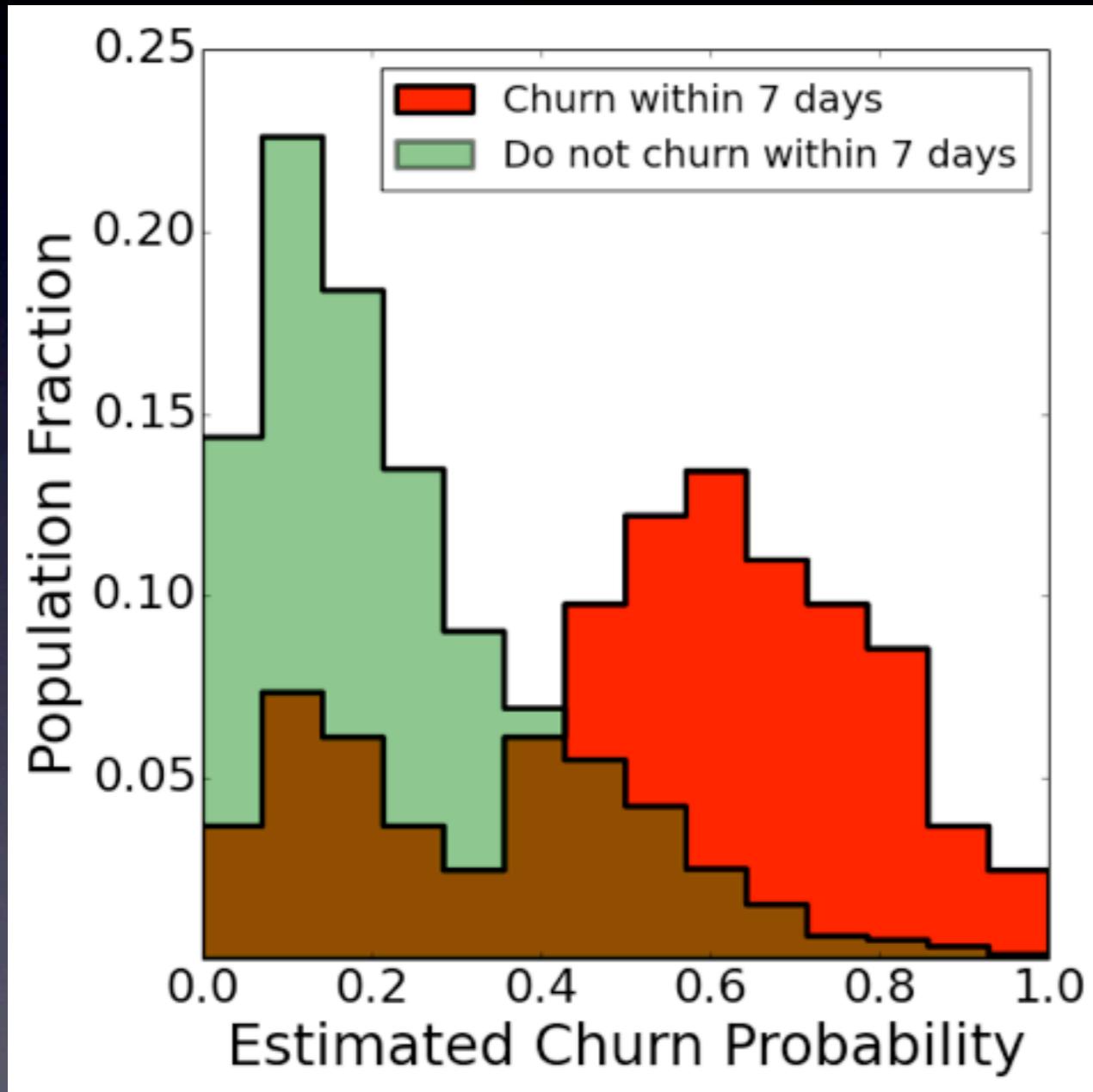
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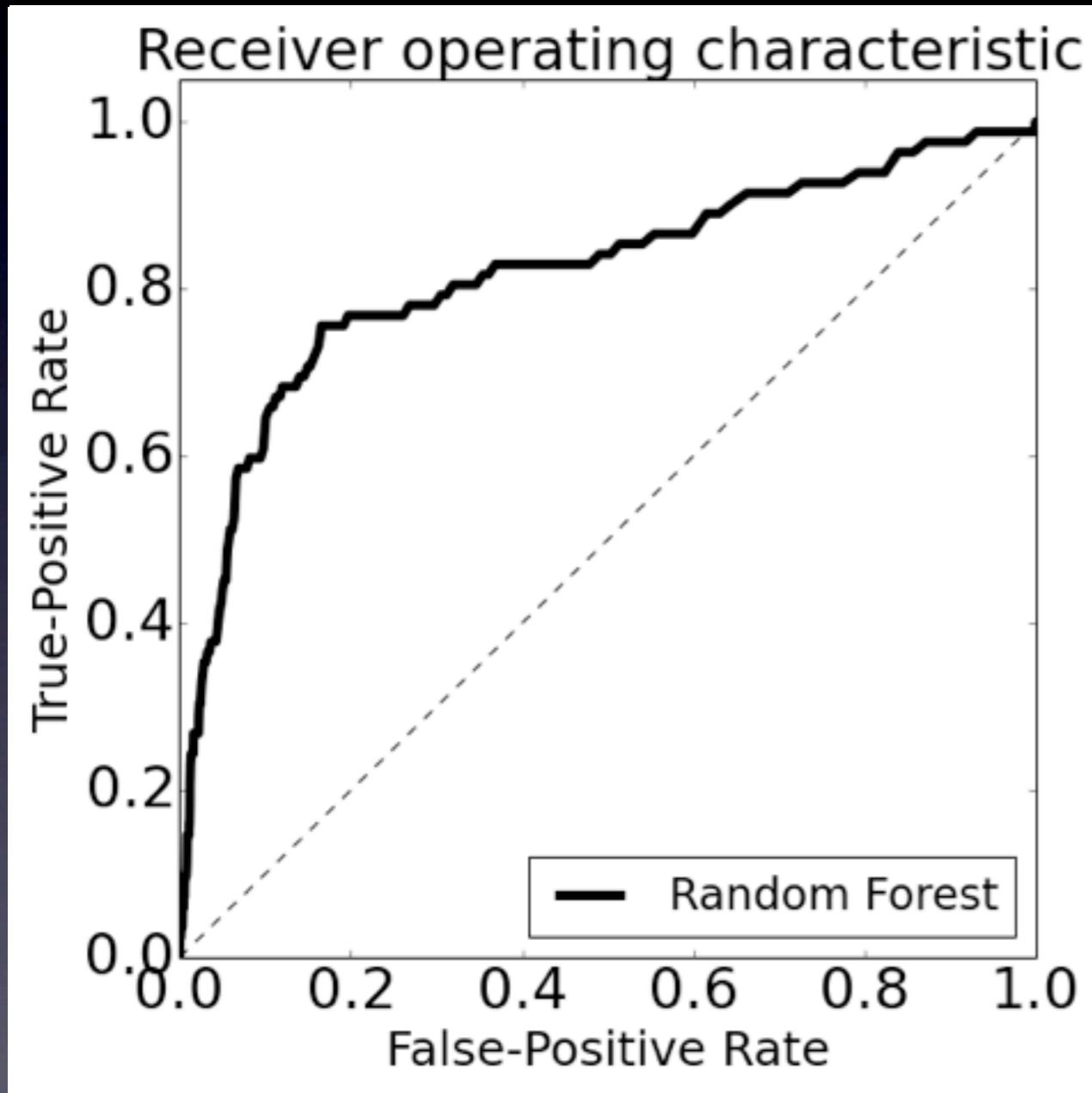
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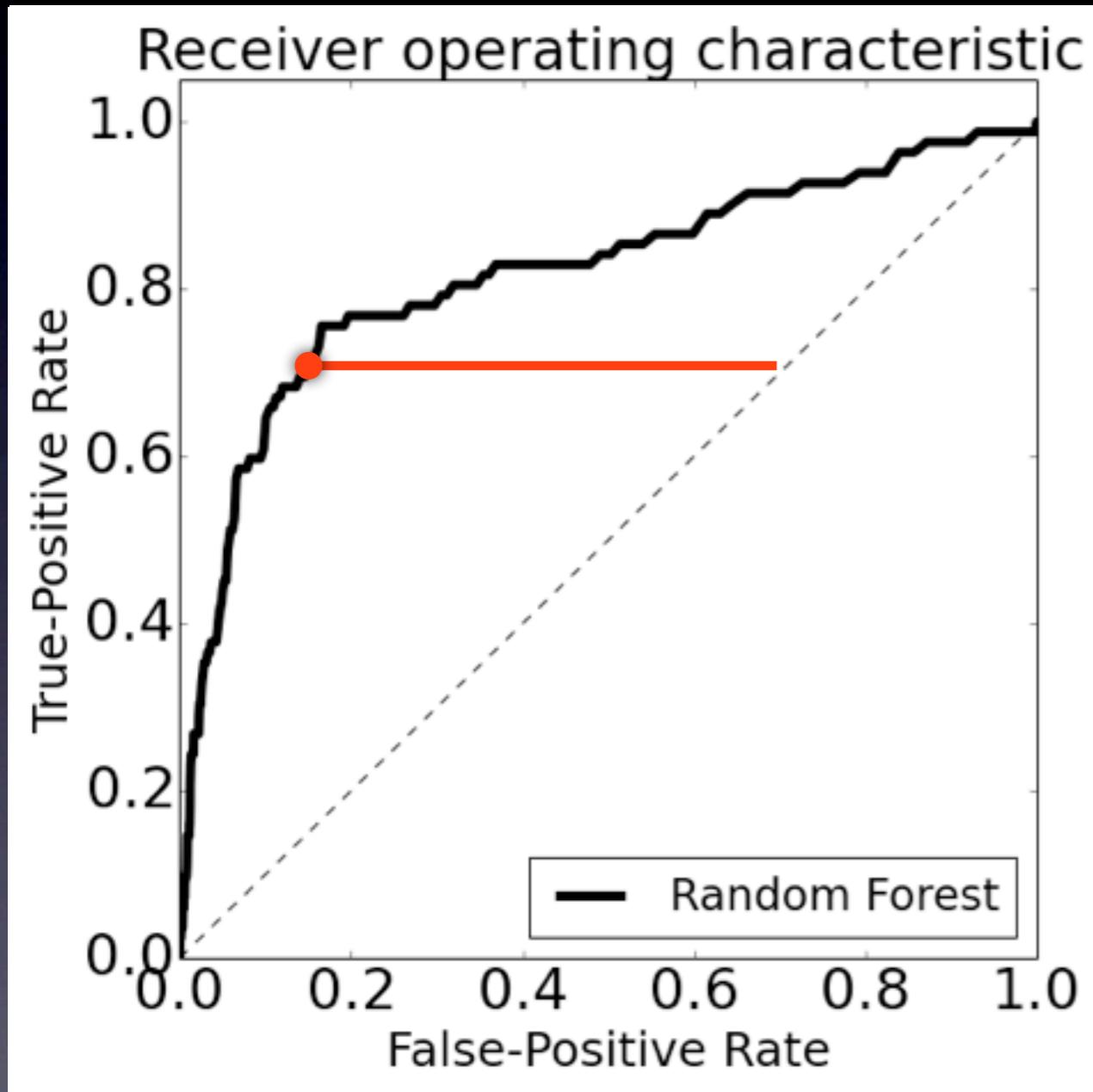
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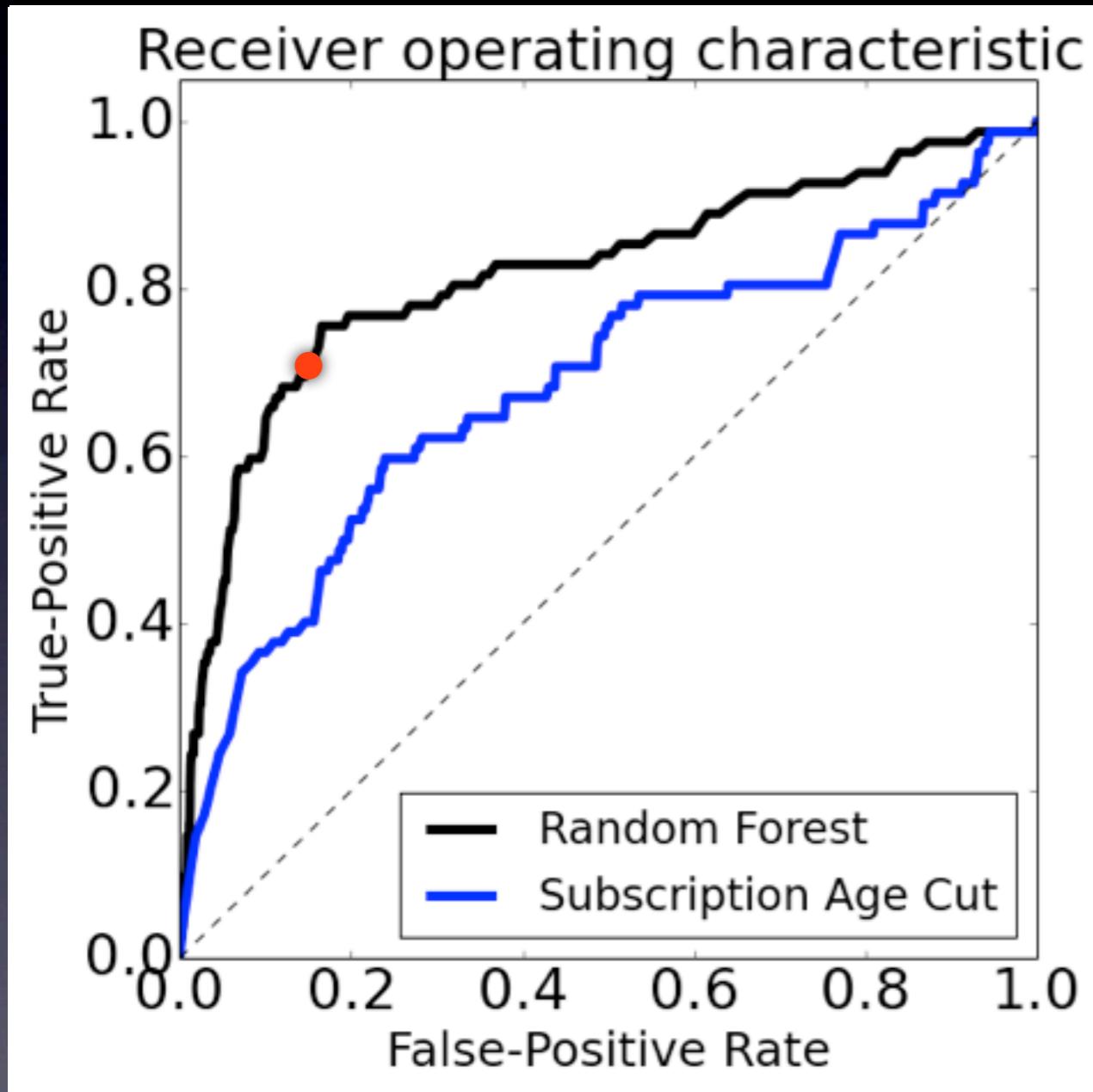
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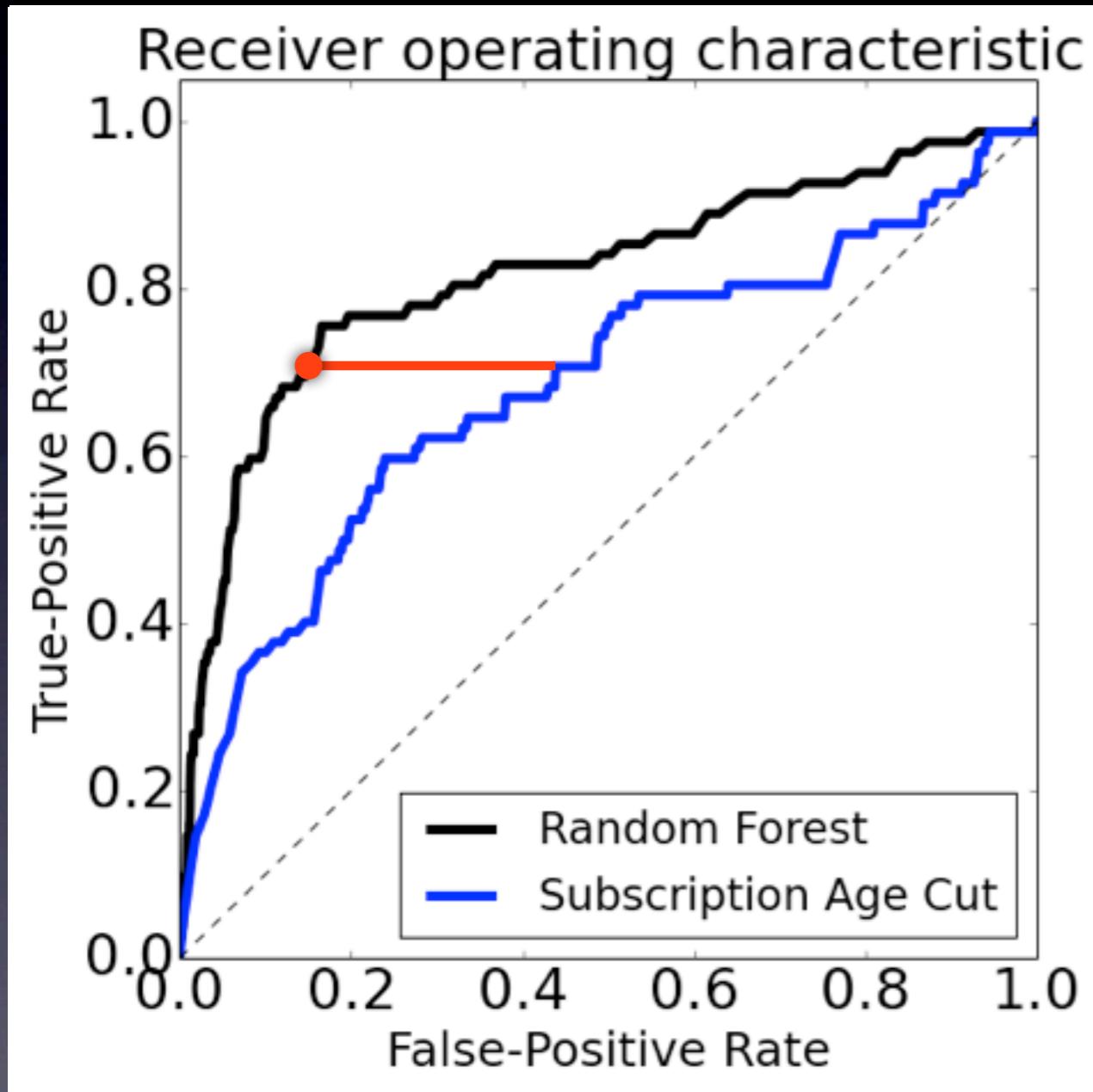
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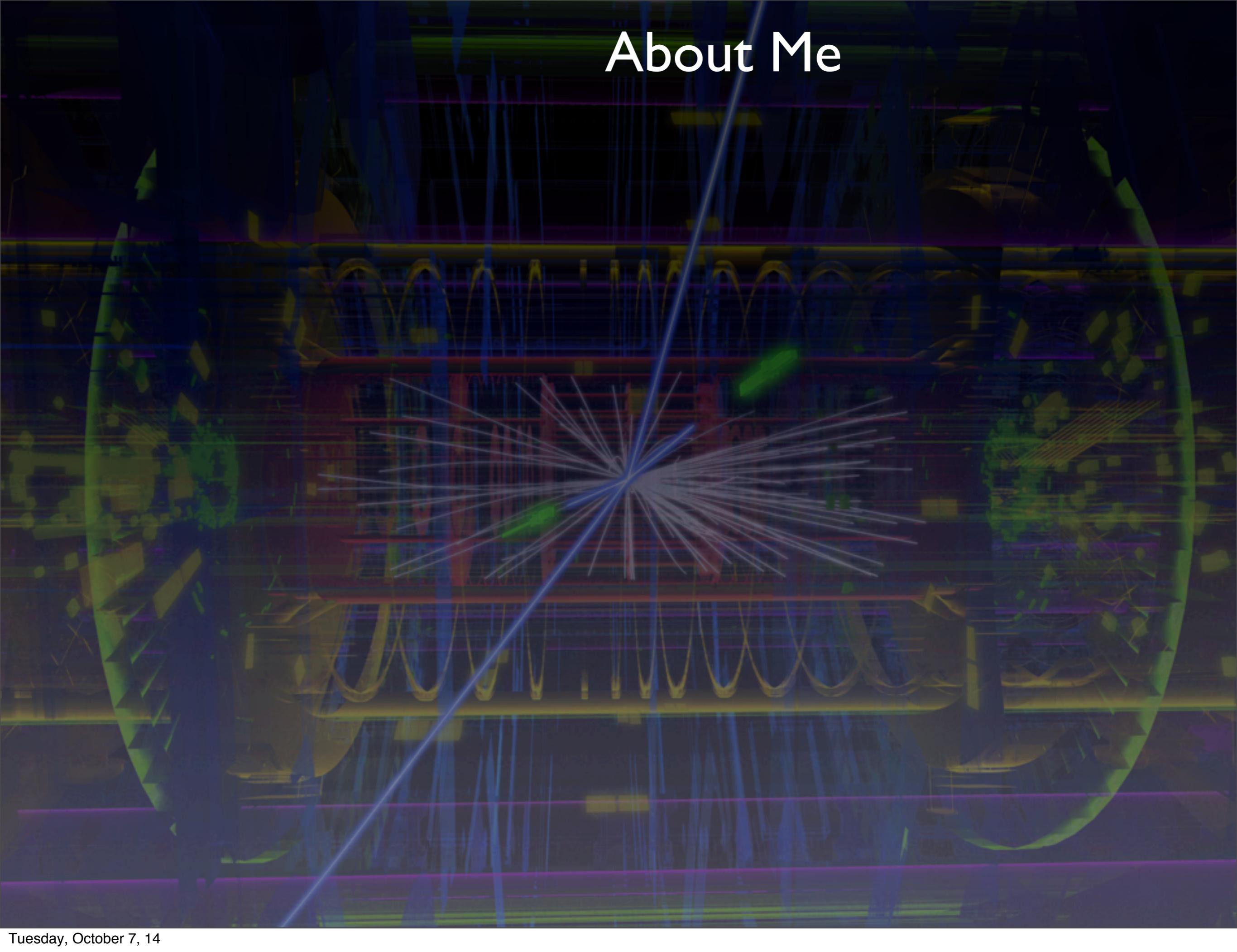
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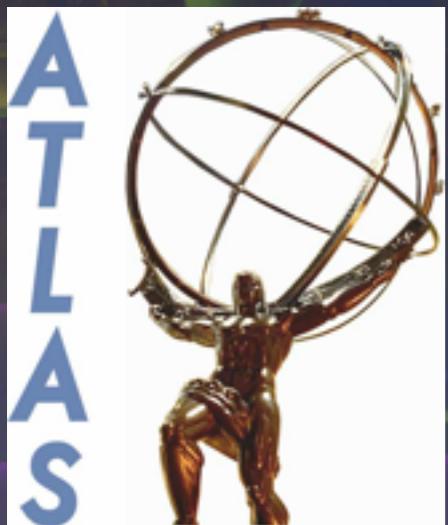
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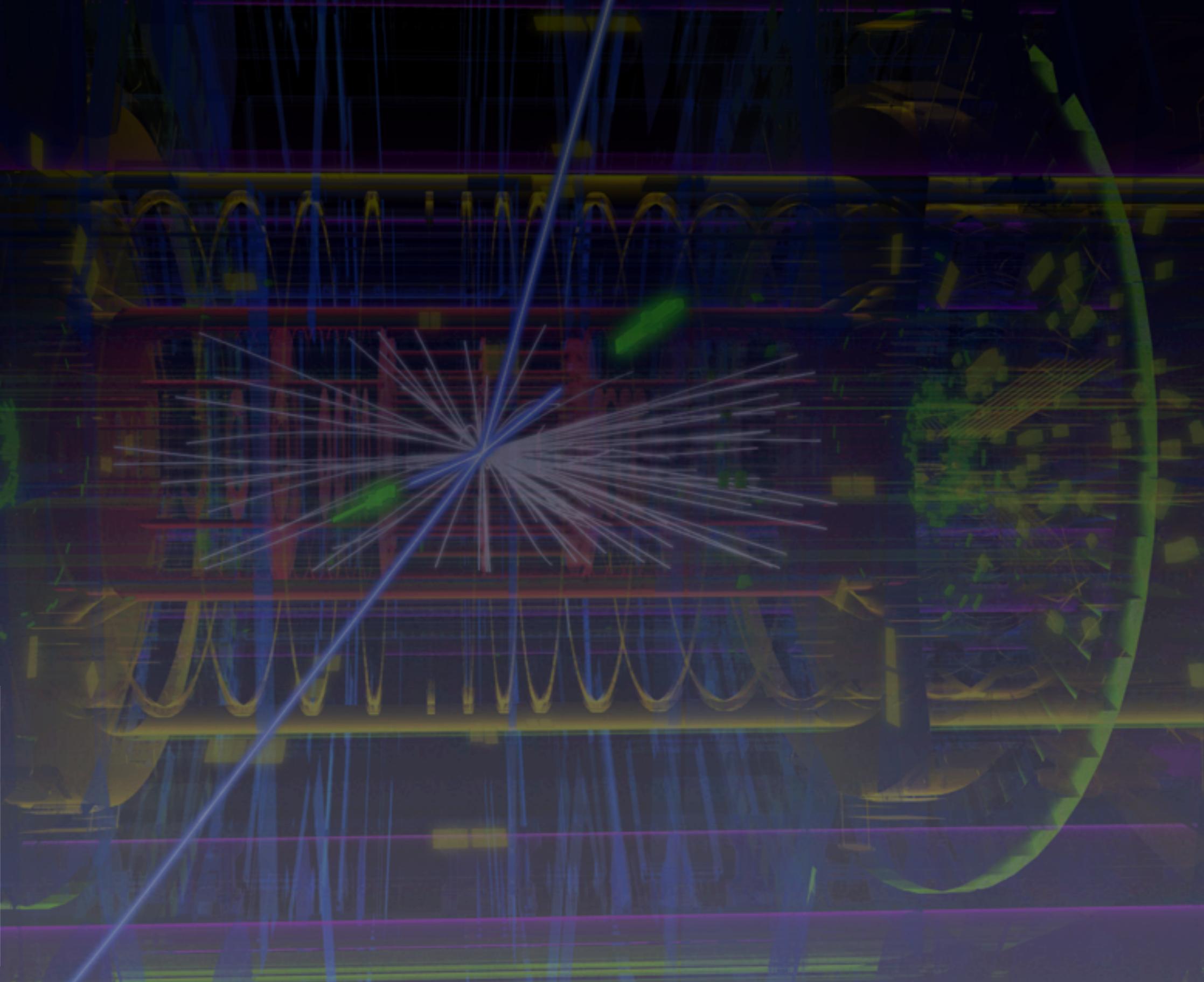
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About Me

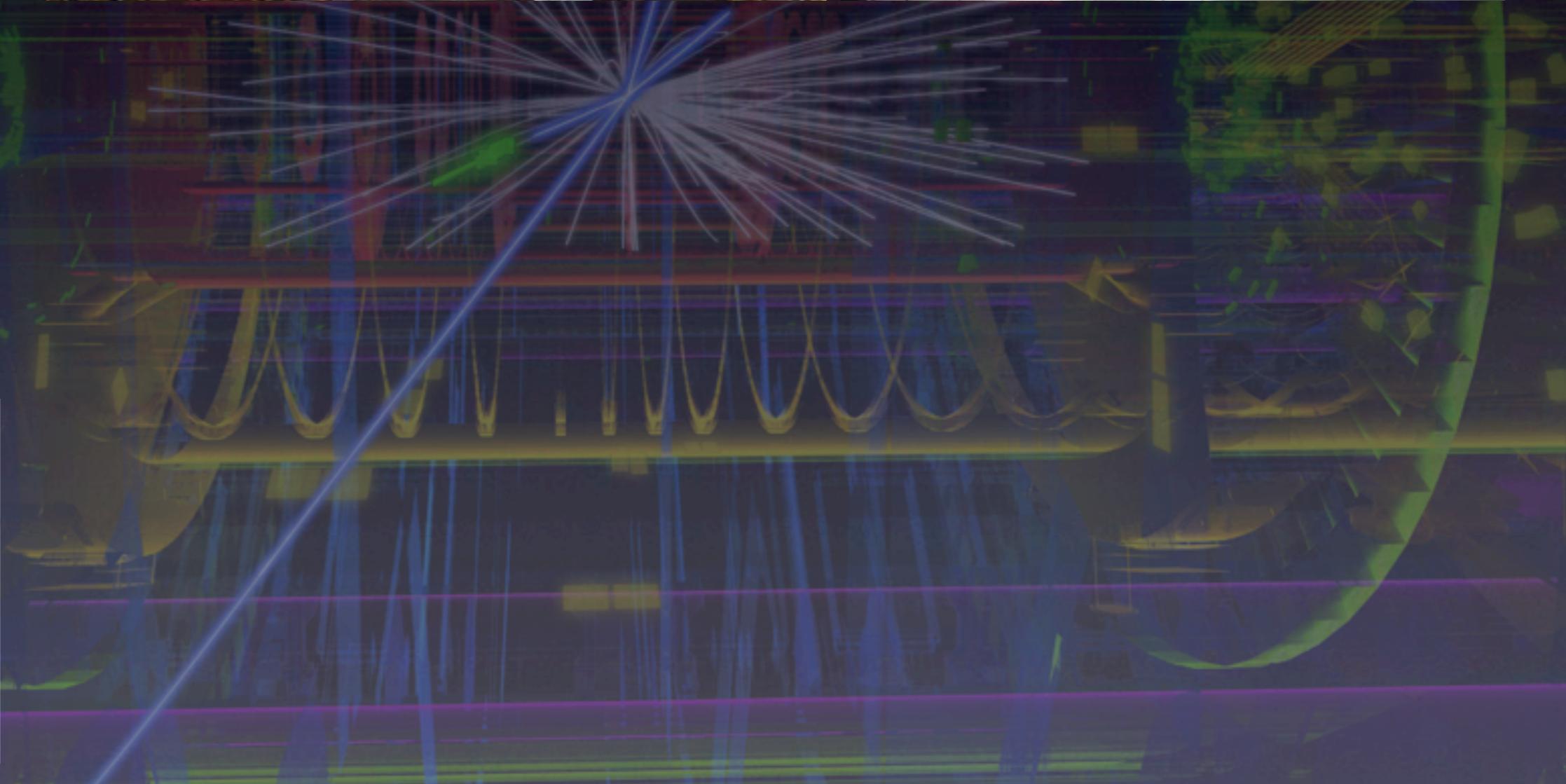
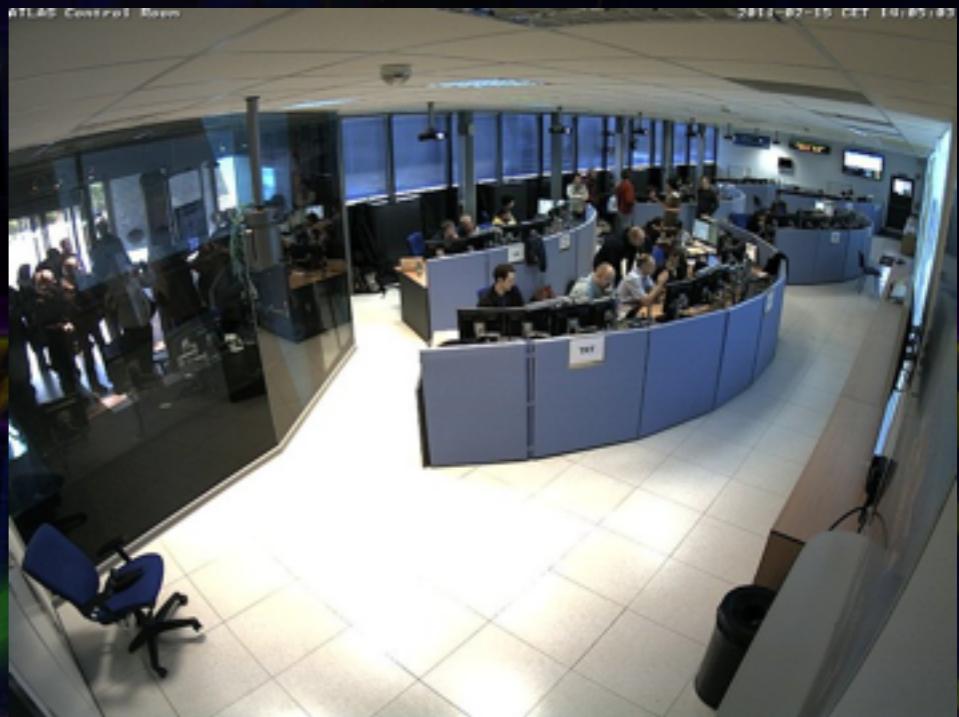




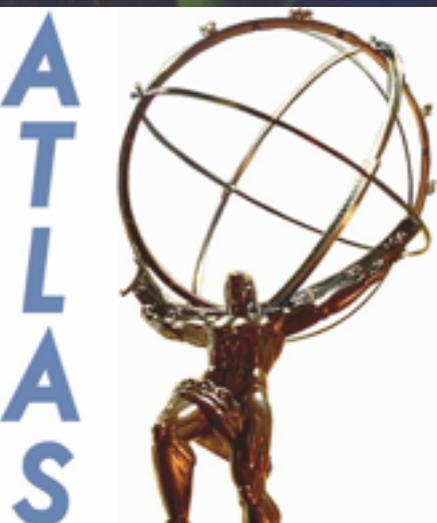
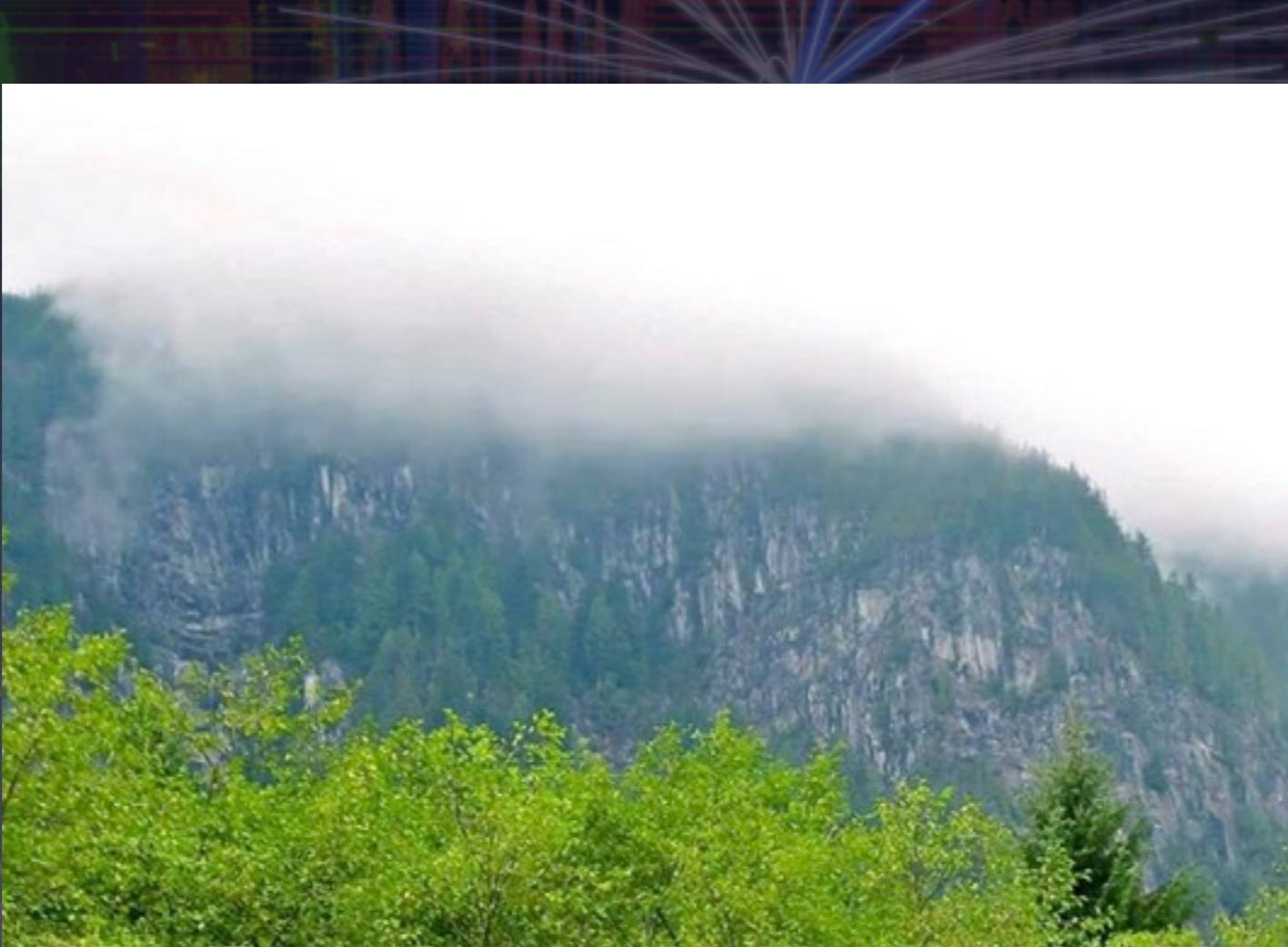
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Random Forests