Twitch User Retention

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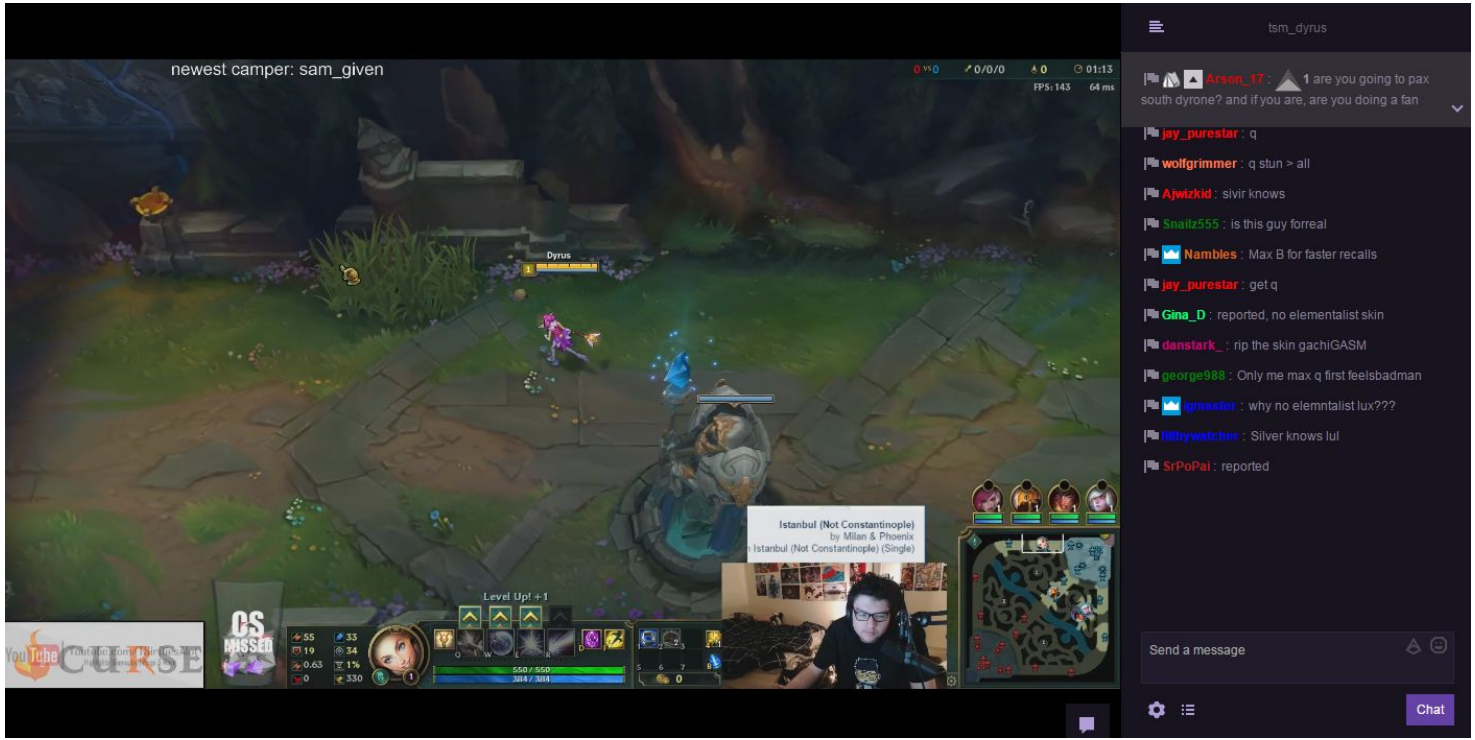
What is Twitch?

Twitch is a streaming platform for video game related content



Project Goals

Why:

- We have high retention of our core users, but retention of brand new users has been difficult
- Support company growth by crafting a strategy to retain new users.
- Help prioritize UX issues that new users are facing

What:

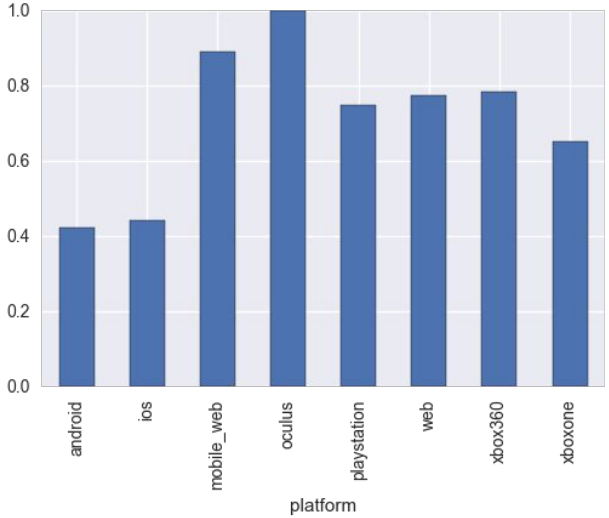
- Predicting who is churning
- Identifying variables that are related to churn

Data

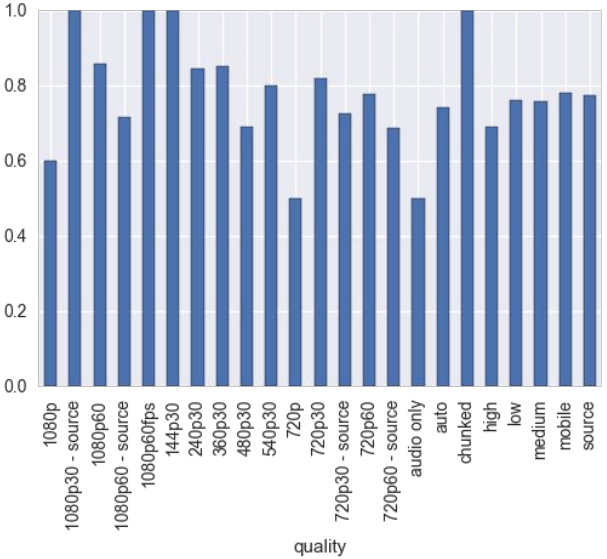
- Identify and sample brand new users to our platform
- Get data about the user
  - Location
  - Bandwidth quality
  - Type of device
- Get features related to their first video experience
  - Content type - Live or VoD
  - Video player type
  - Broadcast quality - resolution, frame rate, lag, buffering
  - Language
  - Game
- Identify whether or not the user retained in the following week

Data exploration

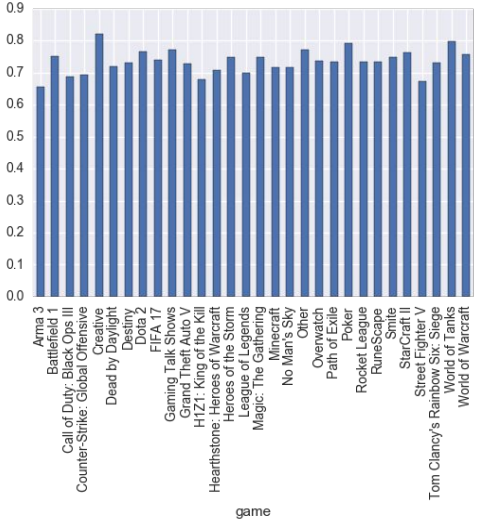
Platform



Video quality



Game



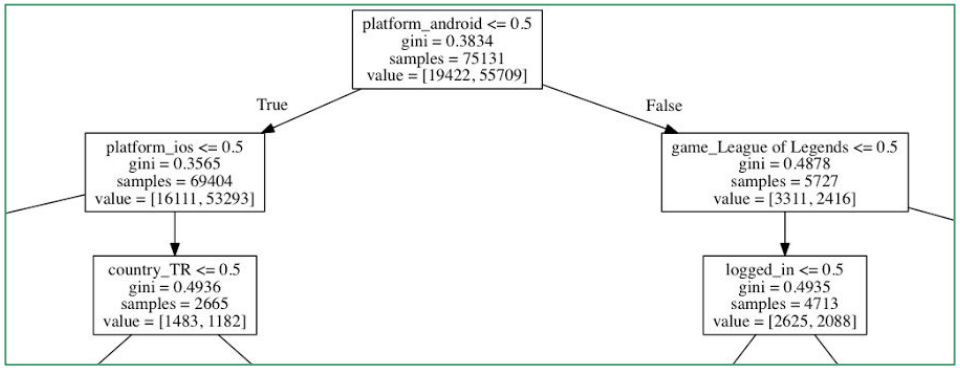
Models and Outcome

Null hypothesis: 74.1%

Model

- Logistic regression (all features): 74.1% (+0%)
- Logistic regression (hand-picked): 75.7% (+1.6%)
- Logistic regression (tree importance): 75.7% (+1.6%)
- KNN: 69.6% (-4.5%)
- Decision trees: 75.9% (+1.8%)
- Random forest: 73.8%(-0.3%)
- PCA: 75.4% (+1.3%)

Something looks odd



Feature	Importance
platform_android	0.460394
platform_ios	0.21192
logged_in	0.127909
player_embed	0.079312
player_popout	0.055276
channel_acu	0.021502
game_League_of_Legends	0.012123

Splitting the project

Web (78% of sampled users)

- Null hypothesis: 79%
- Unable to beat the null hypothesis

Mobile (10% of sampled users)

- Null hypothesis: 43.6%
- Logistic regression (all features): 56.4% (+12.8%)
- Decision tree: 58.2% (+14.6%)

Mobile Features

Logistic Regression coefficients

Most negative coefficients (lower churn):

- Channel average concurrency
- Video bitrate
- Broadcast pixel count / resolution
- League of Legends

Most positive coefficients (higher churn):

- Video buffer size
- Logged in

Next steps

- Better data collection for further analysis on web churn
- Experiment to recommend mobile viewers to watch League of Legends or more popular channels to see if it decreases churn
- Identify causes of mobile video buffering issues
- Run a panel for new mobile users who were not logged in and did not watch League of Legends