

# Kickwrangler

Predict which Kickstarter projects won't deliver

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KICKSTARTER

# \$1,768,328,118

pledged to Kickstarter projects over 6 years

## It doesn't always work out...



Derek Meier on May 8, 2014

Washington state attorney general is going after another kickstarter i backed. I will put in a complaint.



Dan Kez 2 days ago

I would also like a refund. My laptop is no longer supported by your product and the continuous unjustified delays are ridiculous.

### FTC Takes First Action Against a Fraudulent Kickstarter Campaign



/ POLICY



By Amy Schatz | [@amy\\_schatz](#) | EMAIL | ETHICS

June 11, 2015, 7:40 AM PDT

## Kickwrangler predicts the projects most likely to not deliver

KICKSTARTER

# Data Sources

## Project Features

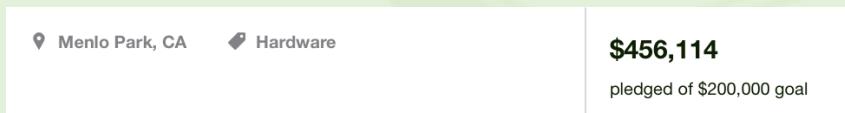
### Creator data:

- # past projects (experienced?)
- # they have backed

The screenshot shows a Kickstarter campaign page for 'FINsix'. It features a photo of a group of people holding a large white sign with the FINsix logo. Below the photo, the creator's name 'FINsix' is listed with a 'Creator!' badge. The bio states: 'Backed 2 projects · Menlo Park, CA · Joined Jan 2014'. The project description reads: 'FINsix was founded in 2010 by four MIT graduate students with the goal of using VHF power to radically... See full bio & links'. A project card for 'Dart: The World's Smallest Laptop Adapter' is shown, created by FINsix, first created on May 14, 2014, and successfully funded. At the bottom, there are buttons for 'Backed 2', 'Created (1)', and 'Comments (11)'. To the right of the page is a large green arrow pointing to the right, with the word 'predict' written above it.

### Project data:

- Category
- # backers
- \$ pledged vs goal (overfunded?)



Scraped from:



## Project Outcomes

### No data/tracking of project delivery

- 500k tech comments
- Sentiment analysis -> project status

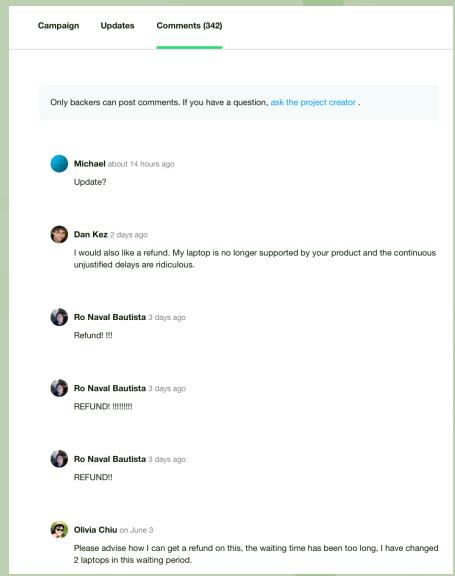
The screenshot shows the 'Comments' tab of a Kickstarter campaign page. The header indicates 'Campaign', 'Updates', and 'Comments (342)'. Below the header, a message says 'Only backers can post comments. If you have a question, ask the project creator.' A series of comments are listed:

- Michael about 14 hours ago: Update?
- Dan Kez 2 days ago: I would also like a refund. My laptop is no longer supported by your product and the continuous unjustified delays are ridiculous.
- Ro Naval Bautista 3 days ago: Refund!!!
- Ro Naval Bautista 3 days ago: REFUND!!!!!!
- Ro Naval Bautista 3 days ago: REFUND!!
- Olivia Chiu on June 3: Please advise how I can get a refund on this, the waiting time has been too long, I have changed 2 laptops in this waiting period.

# Algorithms: ...

All comments

Small (1k) sample



Workers label sentiments



Labeled sentiments



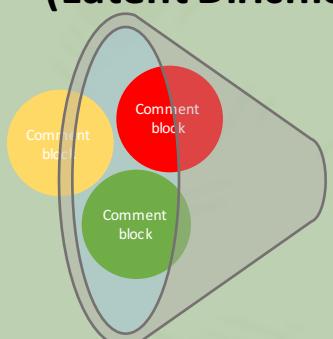
Linear regression:  
topic – sentiment mapping:

$$S = \vec{M}^T \vec{T}$$

Sentiment  
vs time!

Pre-process text

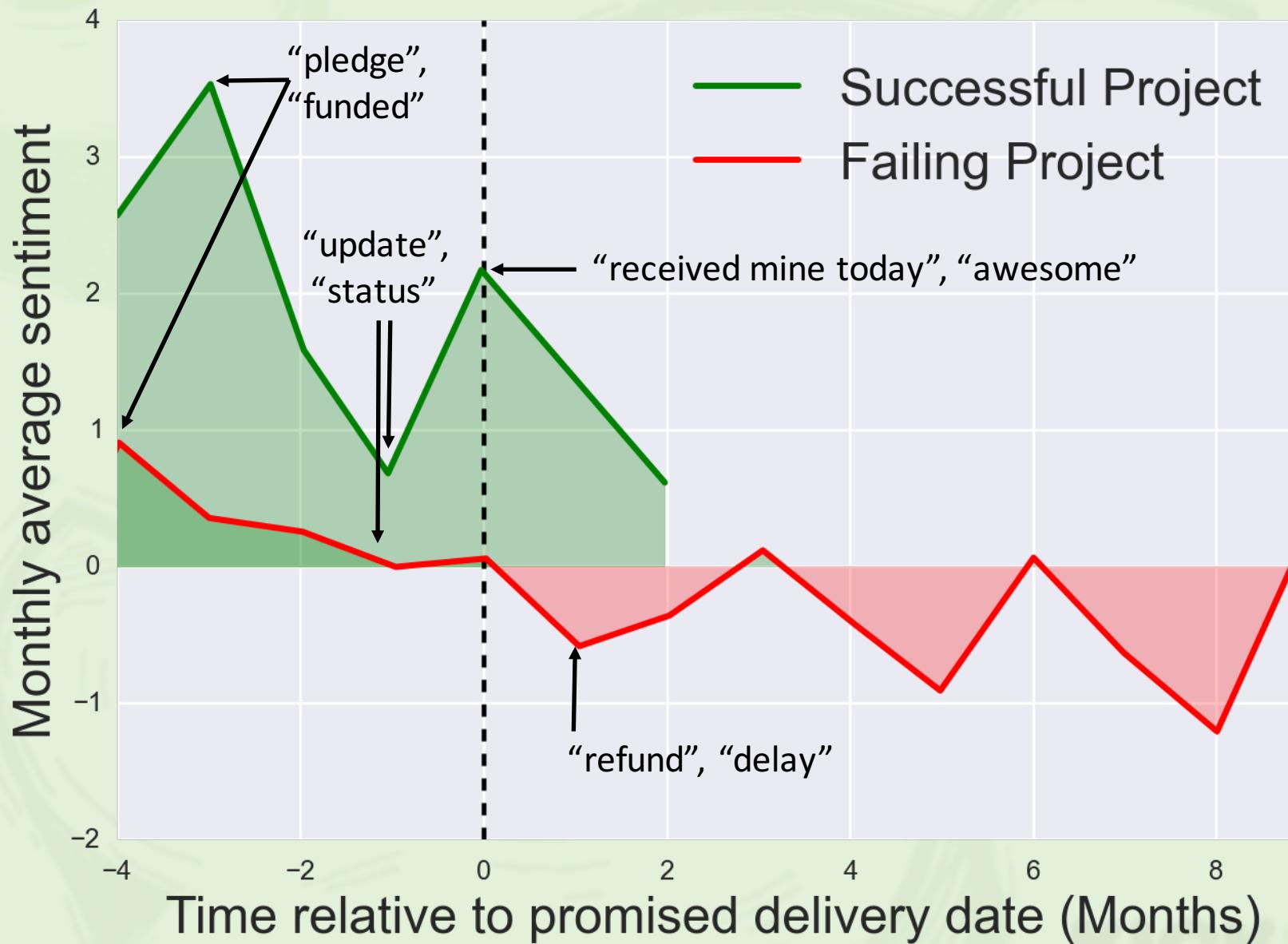
Topic modeling  
(Latent Dirichlet Allocation)



Topics

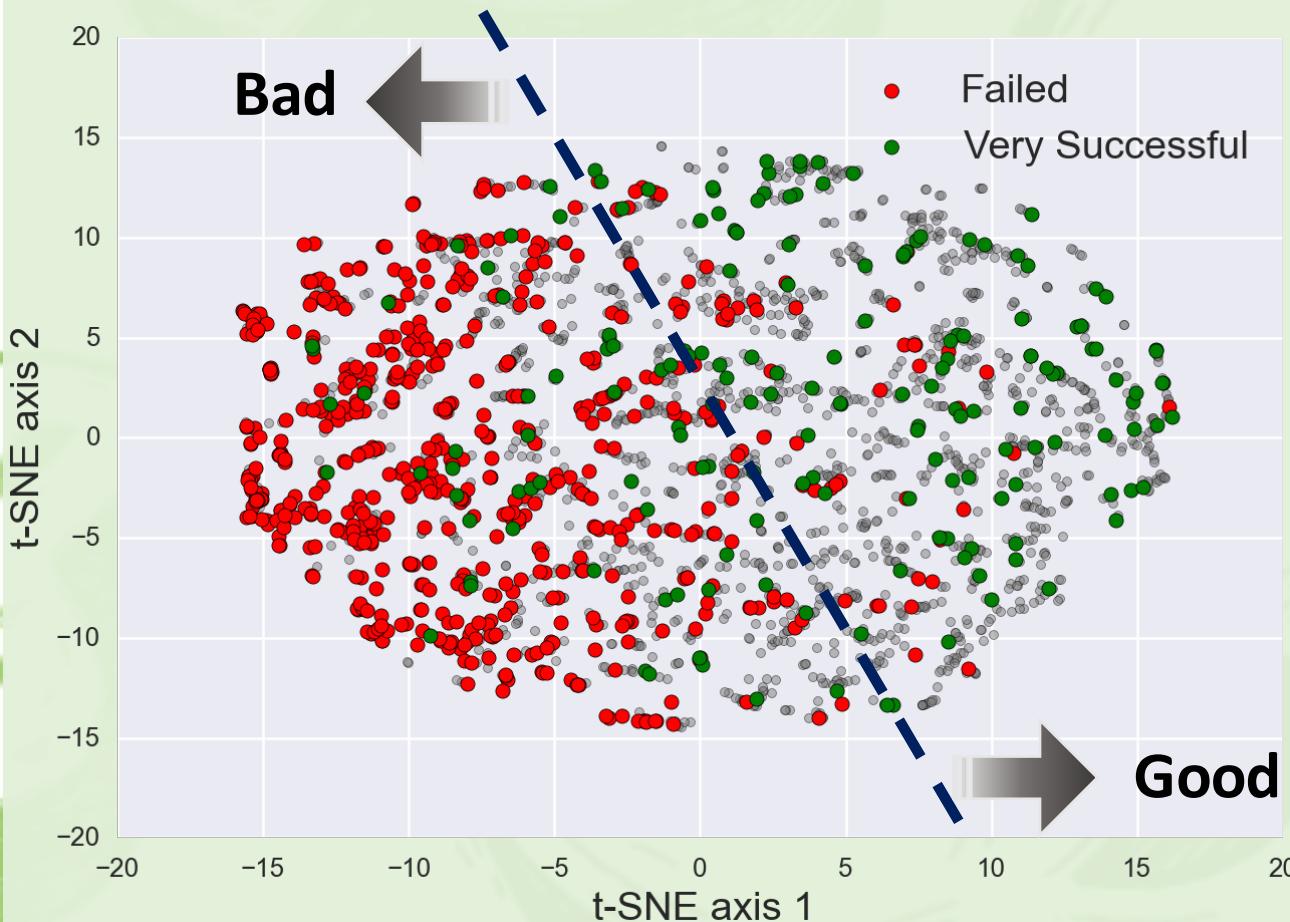
Curate: keep only 7  
most relevant topics

# Timeline of project sentiments



# Classification algorithm

## Build intuition: 2-d reduction



## Classification results

- Random Forest classifier

Accuracy	0.88
Precision	0.6
Recall	0.3
F1	0.43 (0.24 = random)

### Most important feature:

- \$ pledged / \$ goal – overfunded campaigns are bad

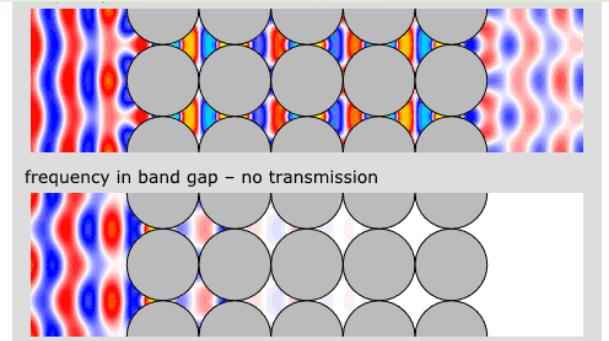
### Surprisingly not important:

- Creator history (# previous projects)

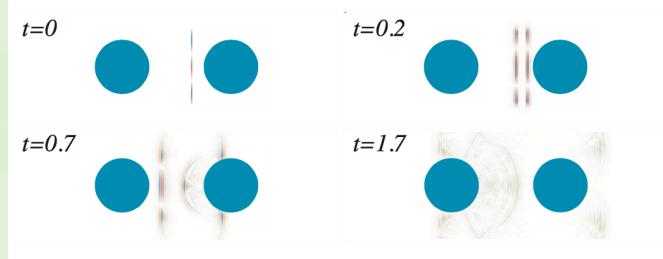
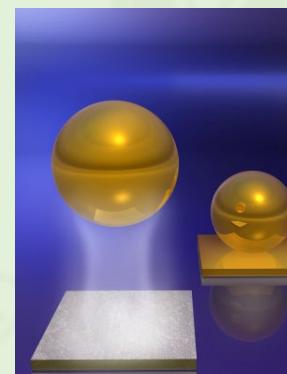
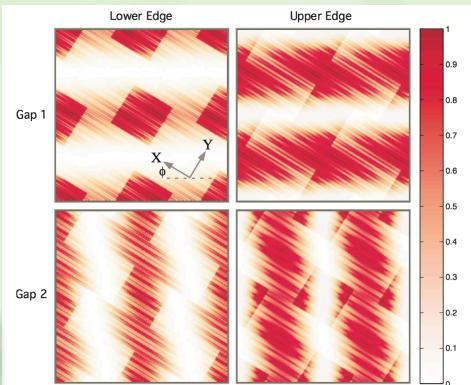
# About me



Massachusetts  
Institute of  
Technology



Photonic crystals,  
quasi-crystals, and  
Casimir forces



Wireless  
batteries!



# Validation

## Mechanical Turk ratings

- Remove ratings with high scatter
- Inspect subset

## Topic-sentiment map

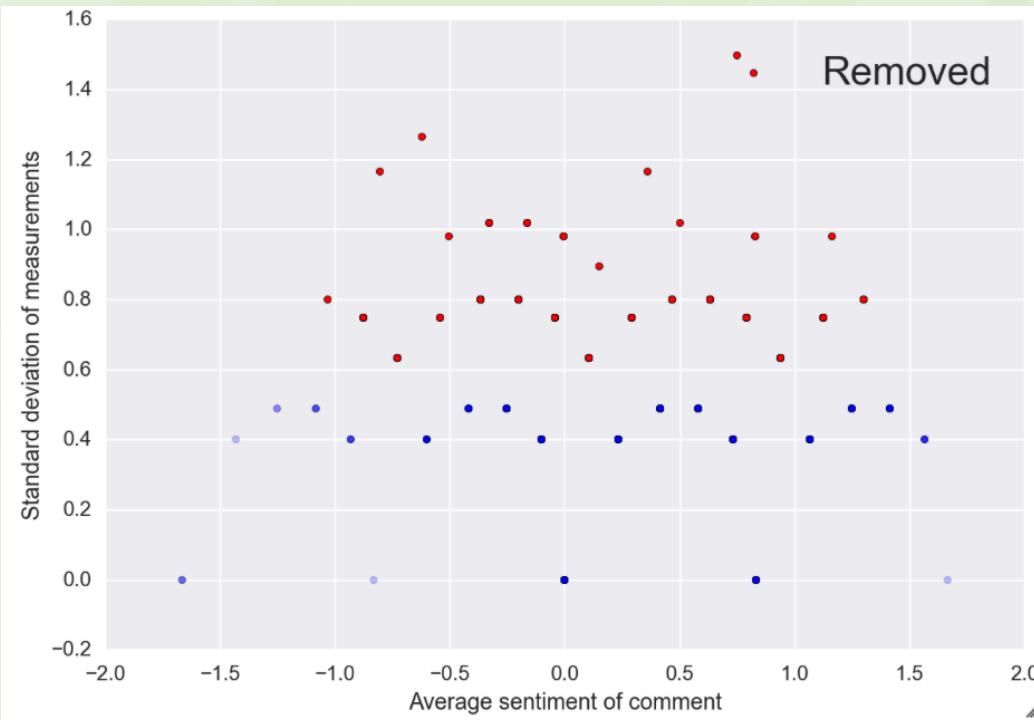
- Train linear regression on labeled comments
- Test on holdout set:  $r^2 = 0.7$

## Project status

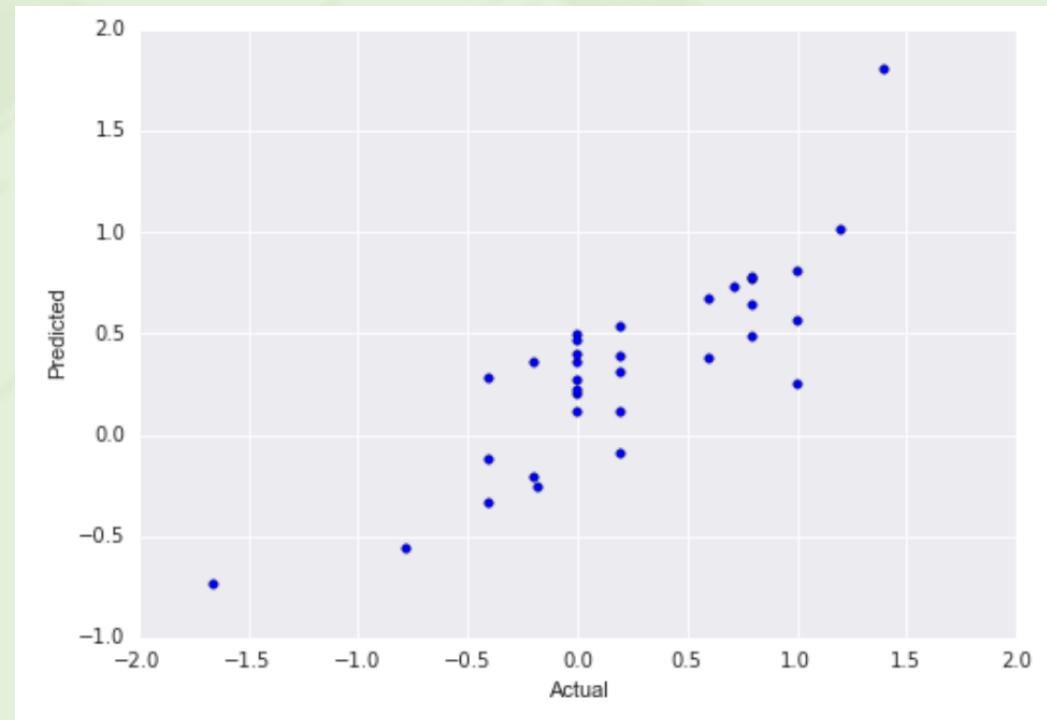
- Recall: 10/10 on “top 10 failed projects” list
- Precision: test on 20 predicted failed projects

# Validation: sentiment analysis

Mechanical Turk ratings

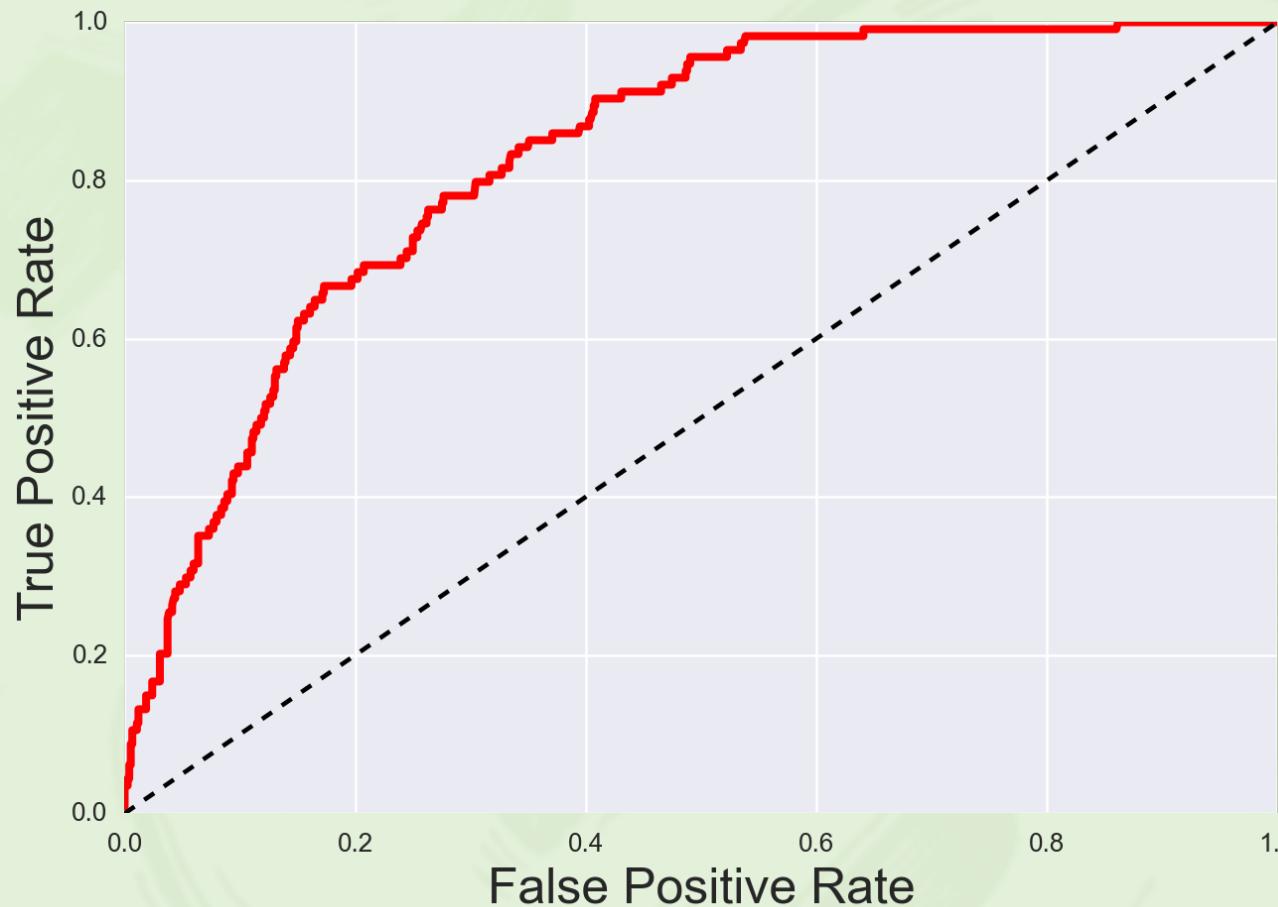


Topic-sentiment map



- Remove comments with standard deviation > 0.5 (S.D. = 1.3 is a random guess)
- Train linear regression on labeled comments, mapping topic content to sentiments
- Test on holdout set:  $r^2 = 0.7$

# Validation: project labeling



- Test on 10 well-known failure cases, gets 10/10
- Test validity on random sample of 100 projects (TODO)