

# Stimulating Creativity with FunLines: A Case Study of Humor Generation in Headlines

**Nabil Hossain\***, **John Krumm†**, **Tanvir Sajed‡** and **Henry Kautz\***

\*Department of Computer Science, University of Rochester

†Microsoft Research AI, Microsoft Corporation, Redmond, WA

‡Department of Computing Science, University of Alberta

{nhossain,kautz}@cs.rochester.edu, jckrumm@microsoft.com, tsajed@ualberta.ca



From left: Tanvir, Nabil. @Hoh Rain Forest.



From left: John, Nabil, Henry. Learning to surf.

- Game: <https://funlines.co>
- Demo: <https://youtu.be/50XJMxDBaLY>
- Dataset: <https://cs.rochester.edu/u/nhossain/funlines.html>

# Welcome to FunLines

<https://funlines.co>

😊 Have fun making funny headlines! 😊

[LOGIN](#)[CREATE ACCOUNT](#)[LEADERBOARD](#)

- Competitive game to collect data for a human creativity task
- Generate humorous headlines:
  - Edit headlines to make them funny

**ORIG:** [Ring Fired Employees](#) for [Watching](#) **Customer** [Videos](#)

**EDIT:** Ring Fired Employees for Watching **Cat** Videos

**Replacement:**  [SUBMIT](#)

- Rate funniness of headlines edited by others

**ORIG:** How to block Facebook and Google from identifying your **face**

**EDIT:** How to block Facebook and Google from identifying your **mistress**

😞 0 (Not Funny At All)    😊 1 (Only Slightly Funny)    😄 2 (Funny)    😂 3 (Very Funny)

**Submitted!** You rated: **Funny**    😄

# Welcome to FunLines

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😊 Have fun making funny headlines! 😊

LOGIN

CREATE ACCOUNT

LEADERBOARD

- Desirable features
  - build mechanisms to increase participation & stimulate human creativity
    - make it fun, engaging, interactive, educational, collaborative, rewarding
  - collect high quality humor data at low cost
    - verified as better and cheaper than Mechanical Turk

## FunLines Demo

# FunLines

<https://www.funlines.co>

Nabil Hossain - University of Rochester

John Krumm - Microsoft Research

Tanvir Sajed - University of Alberta


Henry Kautz - University of Rochester

# Rating

**\*H4**  
Jan 23, 2020  
cnbc.com  
technology

**ORIG:** How to block Facebook and Google from identifying your **face**  
**EDIT:** How to block Facebook and Google from identifying your **mistress**

☹️ 0 (Not Funny At All)    😊 1 (Only Slightly Funny)    😄 2 (Funny)    😂 3 (Very Funny)    🚫 (Abusive/Spam)

**Submitted!** You rated: **Funny**  😄

**Feedback:** [Close](#) - your rating is **similar** to ratings from others.

SKIP

- Task: Rate headlines on a 0-3 funniness scale
- Problem: Rating agreement
- Rating feedback:
  - calibrate (de-bias) individual ratings
  - crowd defines rating scale (objective ratings)
- Rating points proportional to agreement with other raters
  - rewards players with high rating agreement

**INTERACTIVE**

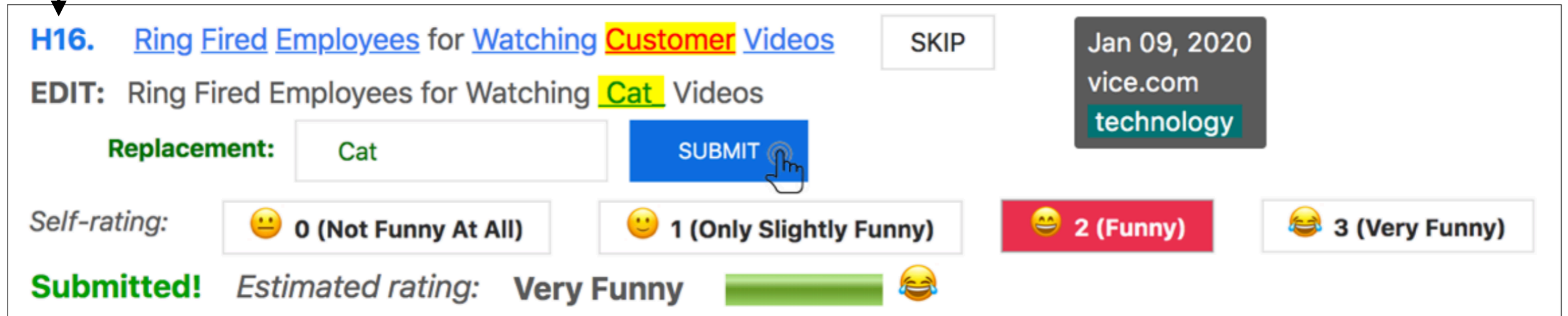
**EDUCATIONAL**

**COLLABORATIVE**

**REWARDING**

# Editing

Link to article



The screenshot shows a web interface for editing a headline. At the top, a cyan box labeled 'Link to article' has an arrow pointing to the headline: 'H16. Ring Fired Employees for Watching Customer Videos'. A 'SKIP' button is to the right. Below the headline, the word 'Customer' is highlighted in yellow. The 'EDIT:' section shows 'Ring Fired Employees for Watching Cat Videos', with 'Cat' highlighted in yellow. A 'Replacement:' field contains 'Cat' and a blue 'SUBMIT' button with a hand cursor. To the right, a dark grey box shows 'Jan 09, 2020 vice.com technology'. Below the edit section, a 'Self-rating:' section has four options: '0 (Not Funny At All)', '1 (Only Slightly Funny)', '2 (Funny)', and '3 (Very Funny)'. The '2 (Funny)' option is highlighted in red. At the bottom, a green bar indicates 'Submitted!' and 'Estimated rating: Very Funny' with a green progress bar and a laughing emoji.

- Task: Replace entity/noun/verb to make headline funny
- Information layout makes editing engaging & interactive
  - headlines extracted daily, sorted by recency
- Instant funniness estimation using BERT NSP model
- Editing points proportional to funniness ratings received by headline
  - rewards players who create very funny headlines

**ENGAGING**

**INTERACTIVE**

**COLLABORATIVE**

**REWARDING**

# Player Freedom

- Players choose headlines to attempt
  - edit headlines they can make funny
  - rate headlines they understand
- Attempt headlines by news category

FLEXIBILITY

INTERACTIVE

ENGAGING

Category:

\*instant rating feedback likely available

INFO	HEADLINE
<p><b>*H1</b> Nov 15, 2019 businessinsider.com <b>technology</b></p> <p><input type="button" value="SKIP"/></p>	<p><b>ORIG:</b> Google reportedly manipulates search results to hide controversial <b>subjects</b> and favour big business <b>EDIT:</b> Google reportedly manipulates search results to hide controversial <b>emojis</b> and favour big business</p> <p><input type="button" value="😐 0 (Not Funny At All)"/> <input type="button" value="🙂 1 (Only Slightly Funny)"/> <input type="button" value="😄 2 (Funny)"/> <input type="button" value="😂 3 (Very Funny)"/> <input checked="" type="button" value="🚫 (Abusive/Spam)"/></p>

# Performance Feedback

- Helps adjust editing style and rating scale
- makes player come back to FunLines

**COLLABORATIVE**      **EDUCATIONAL**

**ENGAGING**      **FUN**

Your 5 Most Funny Edited Headlines (with at least 3 ratings)		
JUDGES RATED	YOU RATED	HEADLINE
2.2	-	<b>ORIG:</b> Eric Trump: " Sickening " How " Every <b>Family</b> in Politics Enriches Themselves " <b>EDIT:</b> Eric Trump: " Sickening " How " Every <b>Trump</b> in Politics Enriches Themselves "
2.2	-	<b>ORIG:</b> Rep. Paul Gosar Tweets Out Fake Image of Obama, Iranian President Shaking <b>Hands</b> <b>EDIT:</b> Rep. Paul Gosar Tweets Out Fake Image of Obama, Iranian President Shaking <b>Babies</b>

Your Edited Headlines (10 Most Recent)		
JUDGES RATED	YOU RATED	HEADLINE
-	-	<b>ORIG:</b> Bolton Book Says Trump Held Up <b>Ukraine</b> Aid Over Biden Investigations: NYT <b>EDIT:</b> Bolton Book Says Trump Held Up <b>Band</b> Aid Over Biden Investigations: NYT
1.4	-	<b>ORIG:</b> By 2-to-1 Margin, Voters Say Soleimani <b>Strike</b> Made U.S. ' Less Safe ' <b>EDIT:</b> By 2-to-1 Margin, Voters Say Soleimani <b>Salami</b> Made U.S. ' Less Safe '

- Headlines you rated = 326
  - Number (and percent) of you ratings which are significantly above ratings from others = 64 (19.6%)
  - Number (and percent) of you ratings which are significantly below ratings from others = 91 (27.9%)
  - Your rating distribution:

RATING	0	1	2	3
NUMBER OF TIMES SELECTED	78	144	96	8
PERCENTAGE OF TIMES SELECTED	23.9	44.2	29.4	2.5

Your Rated Headlines (10 Most Recent)	
YOU RATED	HEADLINE
1 	<b>ORIG:</b> New Evidence Hints at Another <b>Justice Department</b> Coverup <b>EDIT:</b> New Evidence Hints at Another <b>Swimsuit</b> Coverup
1 	<b>ORIG:</b> Trump is reportedly threatening <b>Republicans</b> to keep them in line on impeachment <b>EDIT:</b> Trump is reportedly threatening <b>children</b> to keep them in line on impeachment



# Competition

- 5 week competition
- Leaderboards and prize money
- Task balancing: points for balancing editing and rating submissions
- Qualification: 50-150 edits, 200-500 ratings

COMPETITIVE

REWARDING

ENGAGING

Players Receiving Highest Average Ratings (at least 100 ratings received)			
EXPECTED WINNINGS (USD)	PLAYER ID	TOTAL EDITED	AVERAGE RATING
\$100	Mothra	150	1.745
\$60	A2QX3YJXAAHHVV	150	1.688
\$40	jay	150	1.653
\$25	eojsorc	125	1.640
\$15	A2IMAGGCST8170	50	1.636
\$10	happy4u	106	1.603
\$10	Flora	150	1.600
\$10	A3EPBFTXWBRHVY	58	1.591
\$5	1funny11	150	1.577
\$5	BusyBear	58	1.555

Top Points Scorers (Formula combining editing, rating, task balancing scores)				
EXPECTED WINNINGS (USD)	PLAYER ID	TOTAL EDITED	TOTAL RATED	POINTS
\$100	Mothra	150	500	1401
\$60	jay	150	500	1328
\$40	Flora	150	500	1251
\$25	tclaud87	150	500	1247
\$15	A2QX3YJXAAHHVV	150	500	1217
\$10	A166A2M31CW2C7	150	500	1213
\$10	1funny11	150	500	1191
\$10	Jess	150	500	1161
\$5	A16G6PPH1INQL8	150	500	1127
\$5	SusanBee	150	500	1103

# Players

- 290 Players
  - Mechanical Turk seeding
  - Social media, [TV News Interview](#)

ENGAGING

REWARDING

 **FunlinesApp**  
January 9 · 🌐


We are hosting the FunLines competition for writing and rating funny headlines, with up to \$200 of prize money. Here's a TV interview describing the competition. It's easy and fun. The competition runs till Jan 25, 2020, and you can expect to spend only an hour in the competition to be considered for the prize money. Participate by visiting: <https://www.funlines.co/>.



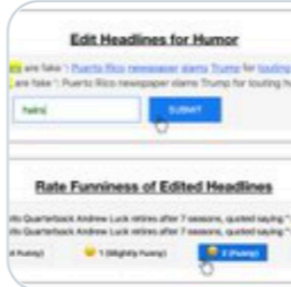
GOOD DAY ROCHESTER 8:50 | 33°

> "FUNLINES" HUMOR COMPETITION FOX

FOXROCHESTER.COM | BY FOX ROCHESTER WUHF  
'Funlines' competition aims to help teach computer program to be funny

 **Funlines** @FunlinesApp · Dec 14, 2019

FunLines - win \$200 by competing in this game [#CONTEST](#) that tests [#joke](#) writing skills and sense of [#humor](#) by playing with [#news](#) [#headlines](#). Hurry to win your [#prizemoney!](#) [#COMPETITION](#) ends Jan 25 2020.  
[funlines.co](https://www.funlines.co)  
via @FunlinesApp



FunLines - Play to test your sense of humor against...  
FunLines, a game for people to have fun with news headlines, allows players to edit headlines to make ...  
[funlines.co](https://www.funlines.co)

# FunLines Dataset

<b>Metric</b>	<b>Humicroedit</b>	<b>FunLines</b>
Size	15,095	8,248
Mean funniness	0.94	1.26
Cost per datum	29.8c	12.1c
Agreement $\alpha$	0.20	0.25
Unique words used	41.2%	53.4%
No. of editors	73	214
No. of raters	131	246

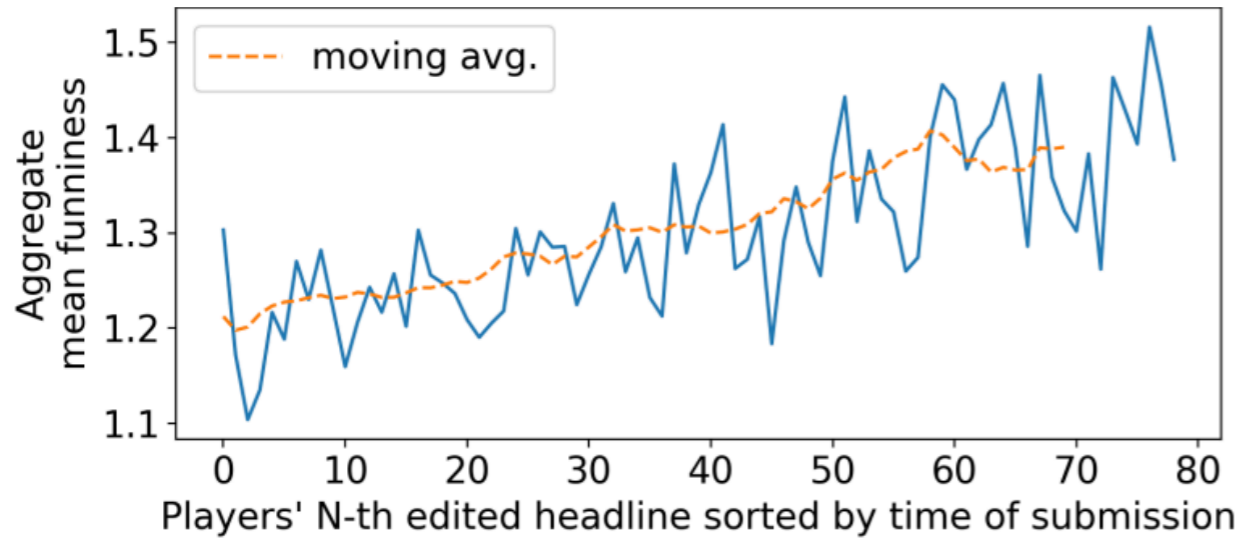
## Humicroedit and FunLines data comparison

- Humicroedit — similar dataset obtained using Mechanical Turk
- FunLines costs 60% less per datum
  - more funny, higher agreement
  - more diversity of word usage, editors, raters

[Hossain et al. NAACL 2019. President vows to cut ~~taxes~~ hair: Dataset and Analysis of Creative Text Editing for Humorous Headlines]

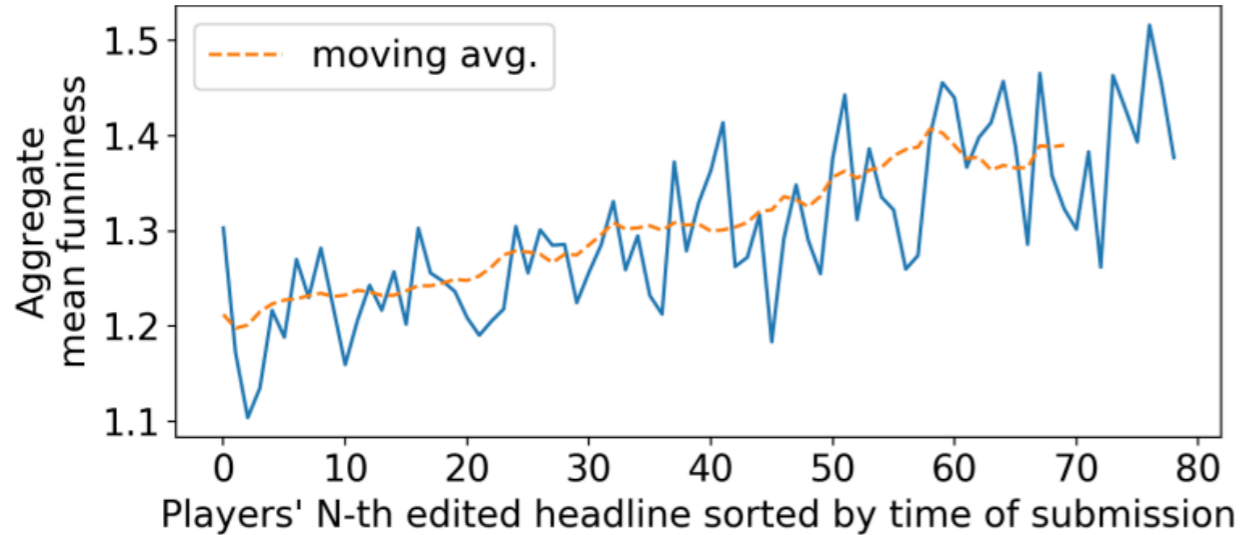
# Player Behavior Analysis

## Players' editing quality

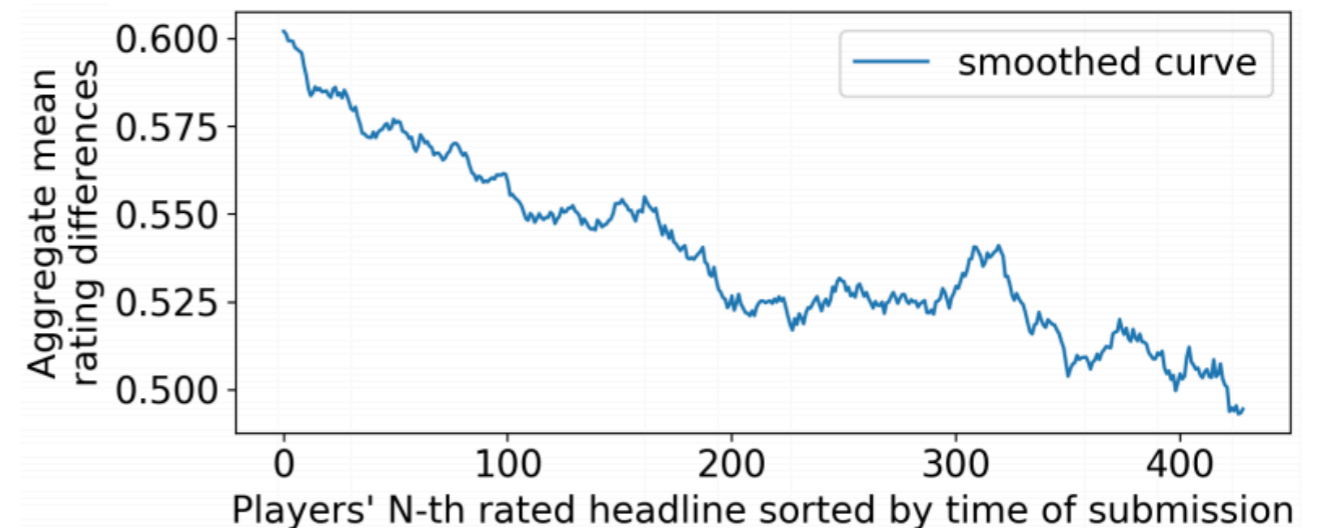


# Player Behavior Analysis

## Players' editing quality



## Players' rating differences



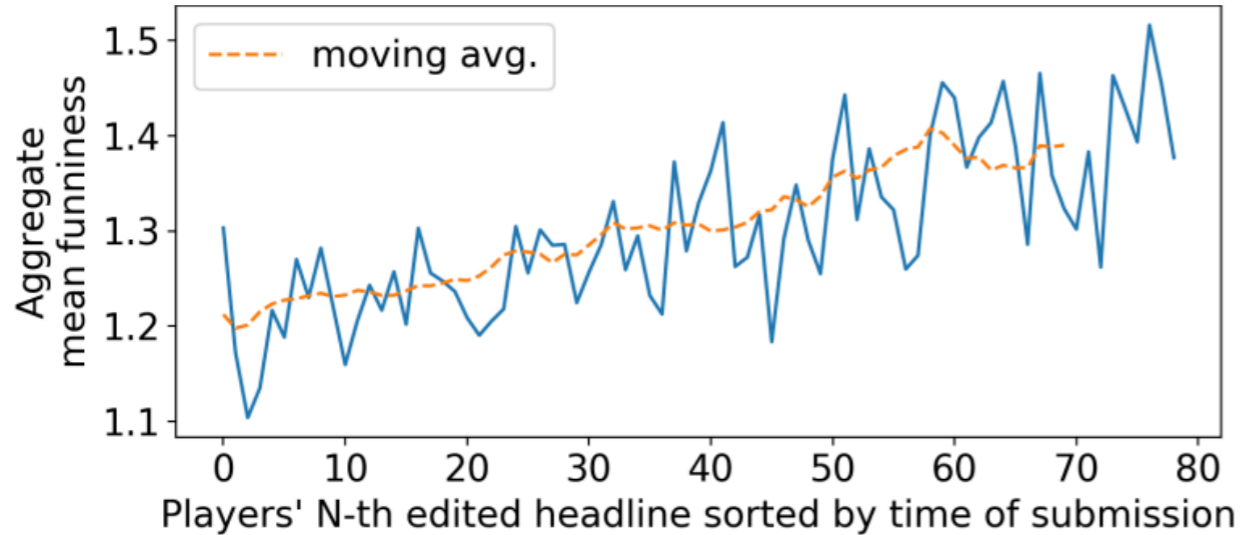
- Players get better at editing and rating via practice

**EDUCATIONAL**

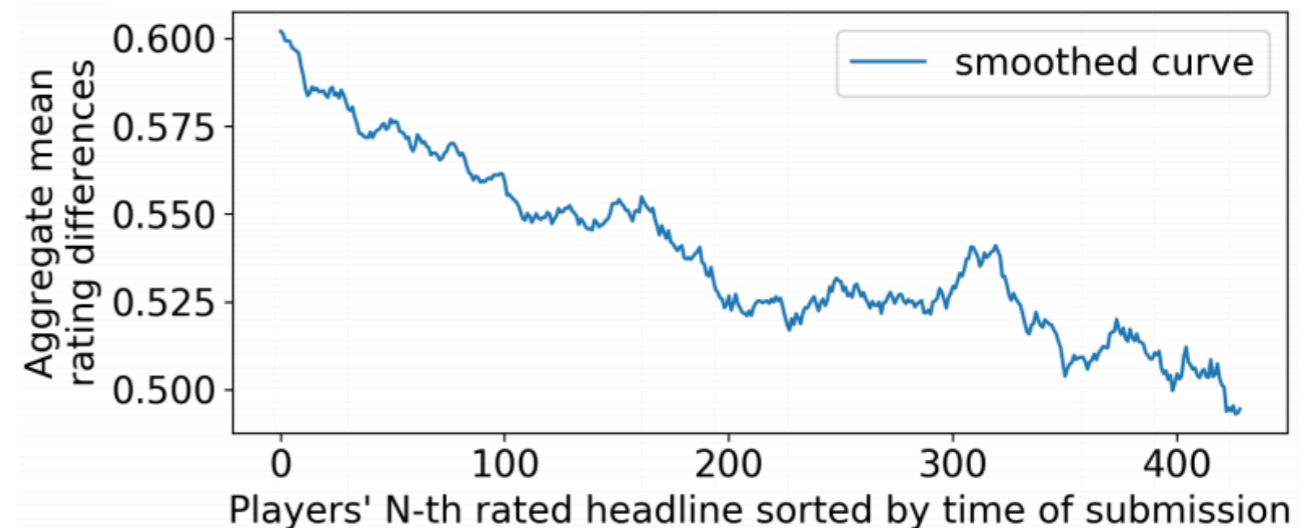
**COLLABORATIVE**

# Player Behavior Analysis

## Players' editing quality



## Players' rating differences



- Players get better at editing and rating via practice

**EDUCATIONAL**

**COLLABORATIVE**

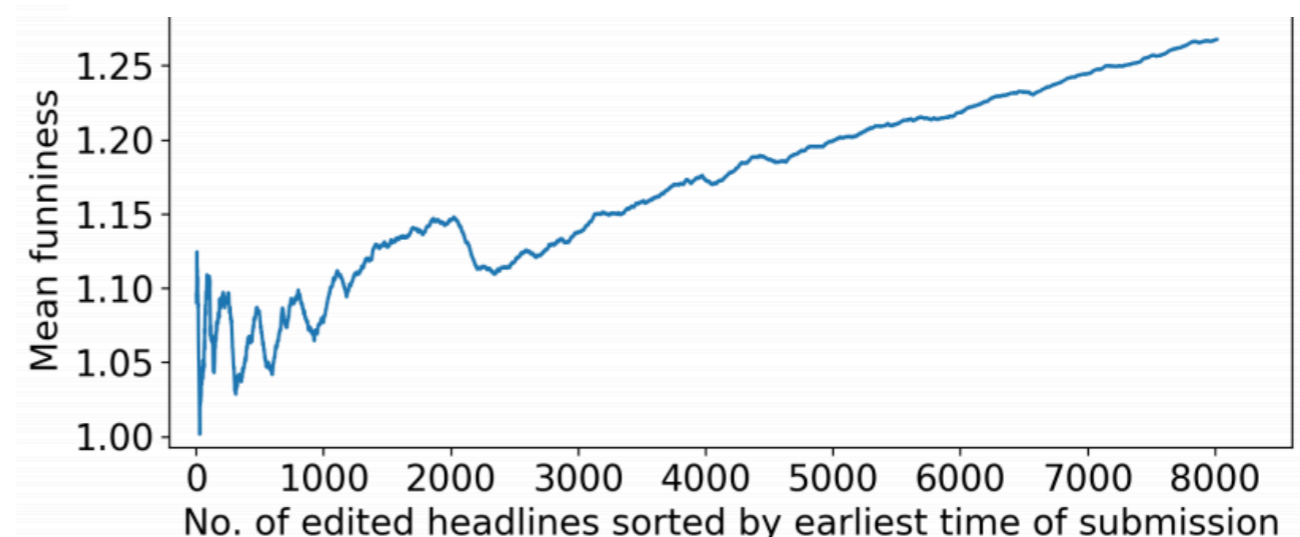
- Dataset gets funnier

**COMPETITIVE**

**ENGAGING**

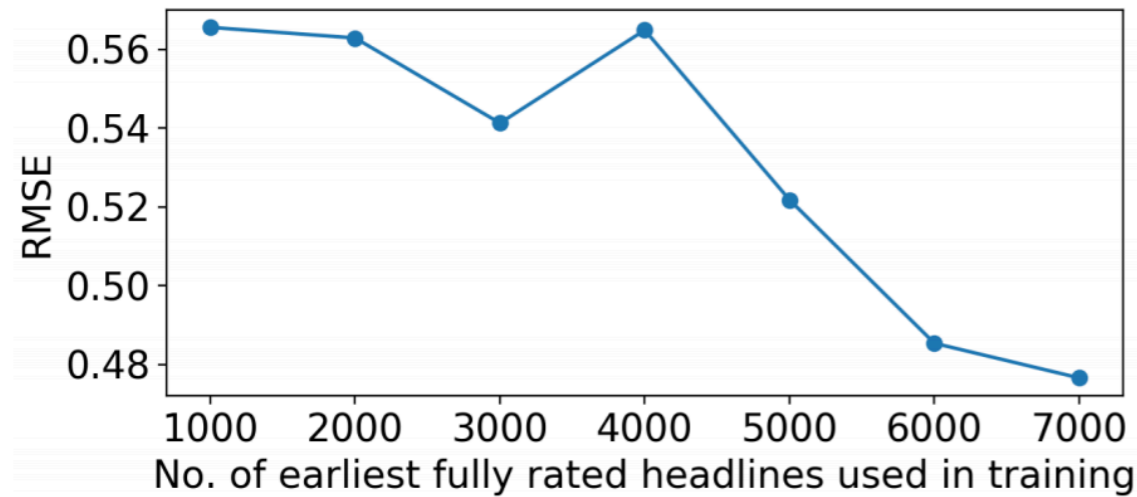
**REWARDING**

## Dataset's Funniness



# Humor Detection

Deployed BERT model gets accurate as more data becomes available



**H16.** [Ring Fired Employees](#) for [Watching](#) [Customer](#) [Videos](#) SKIP Jan 09, 2020  
vice.com  
technology

**EDIT:** Ring Fired Employees for Watching [Cat](#) Videos

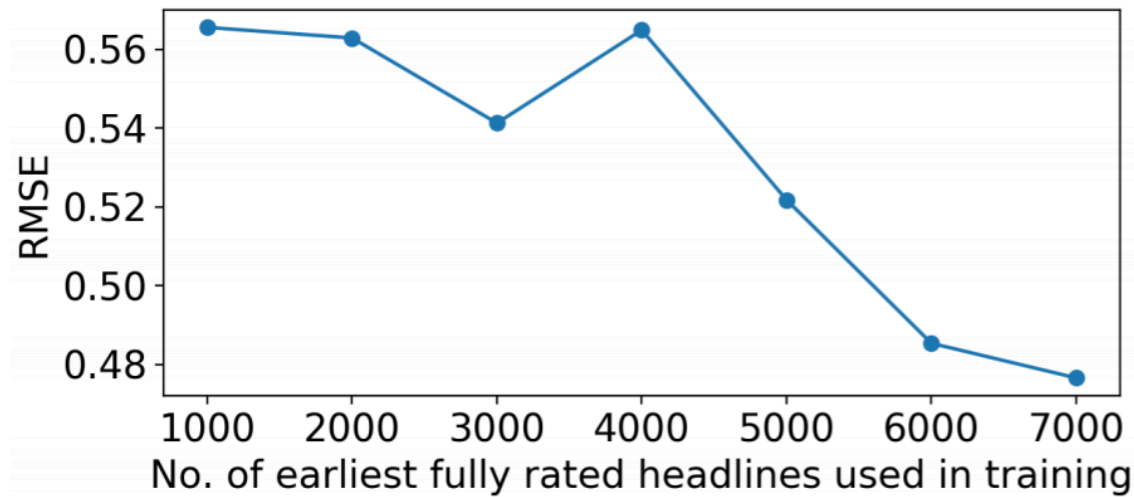
**Replacement:**  SUBMIT

**Self-rating:** 🙄 0 (Not Funny At All) 😏 1 (Only Slightly Funny) 😄 2 (Funny) 😂 3 (Very Funny)

**Submitted!** *Estimated rating:* **Very Funny** 🌱 😂

# Humor Detection

Deployed BERT model gets accurate as more data becomes available



X	MaxUF	MinF	LSTM	BERT	Uses FunLines
10	0.2	1.8	68.54	76.48	BERT Aug. 77.32
20	0.4	1.4	67.21	73.76	75.66
30	0.6	1.2	66.11	69.37	70.75
40	0.8	1.0	64.07	66.38	68.00
50	0.8	0.8	60.6	63.93	64.40

FunLines data improves humor detection in Humicroedit

H16. Ring Fired Employees for Watching Customer Videos SKIP Jan 09, 2020 vice.com technology

EDIT: Ring Fired Employees for Watching Cat Videos

Replacement:  SUBMIT

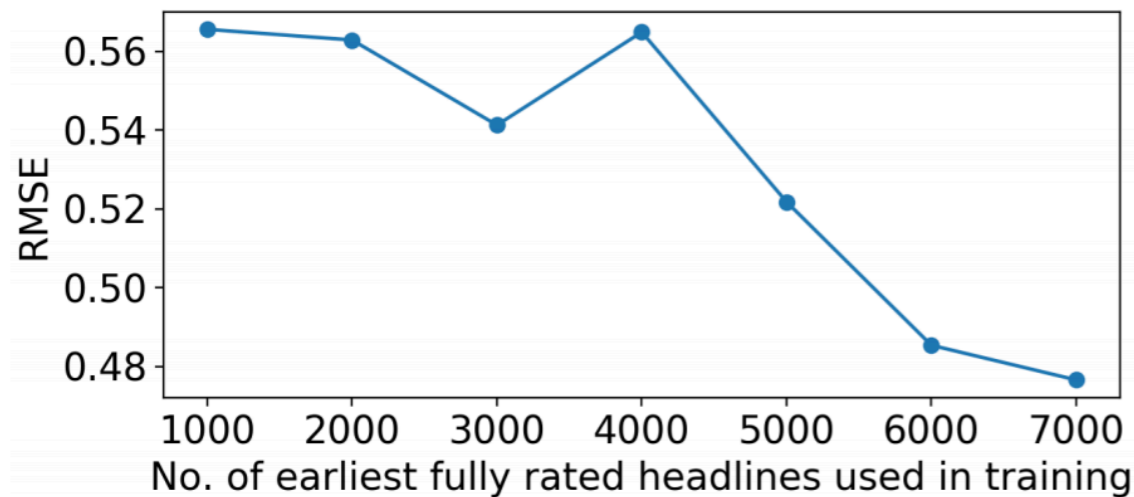
Self-rating:  0 (Not Funny At All)  1 (Only Slightly Funny)  2 (Funny)  3 (Very Funny)

**Submitted!** Estimated rating: Very Funny 👍



# Humor Detection

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10	0.2	1.8	68.54	76.48	BERT Aug. 77.32
20	0.4	1.4	67.21	73.76	75.66
30	0.6	1.2	66.11	69.37	70.75
40	0.8	1.0	64.07	66.38	68.00
50	0.8	0.8	60.6	63.93	64.40

FunLines data improves humor detection in Humicroedit

H16. Ring Fired Employees for Watching Customer Videos SKIP Jan 09, 2020 vice.com technology

EDIT: Ring Fired Employees for Watching Cat Videos

Replacement:  SUBMIT

Self-rating:  0 (Not Funny At All)  1 (Only Slightly Funny)  2 (Funny)  3 (Very Funny)

**Submitted!** Estimated rating: Very Funny 👍

- Dataset found useful in humor detection in:

Hossain et al. SemEval-2020 Task 7: Assessing Humor in Edited News Headlines. In SemEval 2020.

# Conclusion and Future Work

- FunLines: collect highly funny headlines at low very cost by stimulating human creativity
  - FunLines is fun: sticky, engaging, interactive, competitive, rewarding, educational
- Fully automatic humor generation
- Extend to crowdsourcing for style transfer

RATING	HEADLINE
2.8	<b>ORIG:</b> Giuliani just confessed to the <b>crime</b> . He also revealed something bigger. <b>EDIT:</b> Giuliani just confessed to the <b>streaking</b> . He also revealed something bigger.
2.8	<b>ORIG:</b> Donald Trump 's rant against Iran is the howl of a dying <b>empire</b> <b>EDIT:</b> Donald Trump 's rant against Iran is the howl of a dying <b>hippopotamus</b>
2.8	<b>ORIG:</b> Ring Fired Employees for Watching <b>Customer</b> Videos <b>EDIT:</b> Ring Fired Employees for Watching <b>Cat</b> Videos
2.8	<b>ORIG:</b> Amateurs Identify U.S. <b>Spy Satellite</b> Behind President Trump's Tweet <b>EDIT:</b> Amateurs Identify U.S. <b>maniac</b> Behind President Trump's Tweet
2.67	<b>ORIG:</b> Journalist mysteriously <b>resigns</b> after surprising Vladimir Putin with question, commenting on cosmetic surgery rumors <b>EDIT:</b> Journalist mysteriously <b>explodes</b> after surprising Vladimir Putin with question, commenting on cosmetic surgery rumors
2.6	<b>ORIG:</b> Brazilian tribes back manifesto to save Amazon <b>habitat</b> from Bolsonaro <b>EDIT:</b> Brazilian tribes back manifesto to save Amazon <b>Prime</b> from Bolsonaro

Play FunLines: <https://funlines.co>