



TheRiddlerBot

A next step on the ladder towards computational creativity

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Different Twitter users

- People



Different Twitter users

- Organizations



Different Twitter users

- Bots



TheRiddlerBot

@TheRiddlerBot

Guess the person/character described in the riddle! Created by @verhoevenben, @1vangro, @fvancesco, @pedrojmartins at #codecampcc

We present

TheRiddlerBot

- Interactive Twitter bot
- Creates riddles
- Strives to be considered creative



TheRiddlerBot

@TheRiddlerBot

Guess the person/character described in the riddle! Created by [@verhoevenben](#), [@1vangro](#), [@fvancesco](#), [@pedrojmmartins](#) at [#codecampcc](#)

Riddles

- Text fragments that employ ordinary language restricted by semiotic, aesthetic and grammatical constraints
(Pepicello & Green, 1984)
- Language game, initiated by a question, with the goal to mislead the guesser
(Weiner & De Palma, 1993)
- What has no beginning, end or middle?

Creativity

- To be creative usually relates to the generation of something novel and interesting, not only to oneself, but also to partners sharing a common background (Mayer 1999)

Twitter bots

- Automatic Twitter users

Different types of bots (Cook 2015)

- feeder bots, which create tons of Tweets for their followers (mere generation);
- watcher bots: constantly looking for specific texts to extract information;
- interactive bots: which ask followers for specific ways of communication and information sharing

Feeder bots

Every Color
@everycolorbot

colors. all of 'em. | developed by @vogon; feel free to send him feedback/feature requests

the RGB color space
github.com/vogon/everycol...

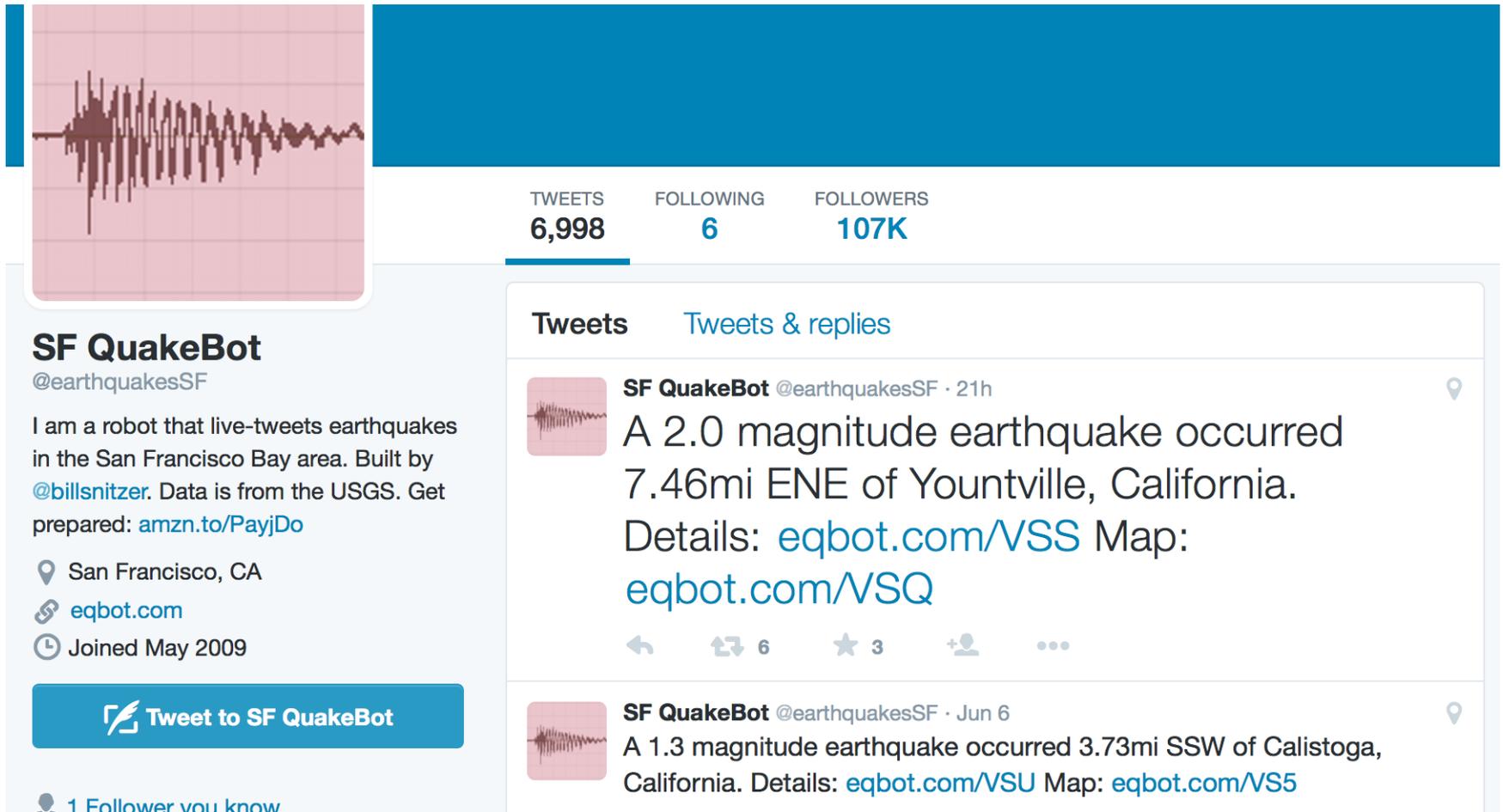
[Tweet to Every Color](#)

14.8K Photos and videos

Tweets Tweets & replies Photos & videos

Every Color @everycolorbot · 44m
#0xe1372c

Feeder bots



The image shows a Twitter profile for 'SF QuakeBot' (@earthquakesSF). The profile header features a blue background with a white header bar. The profile picture is a red square containing a white seismic waveform. The bio states: 'I am a robot that live-tweets earthquakes in the San Francisco Bay area. Built by @billsnitzer. Data is from the USGS. Get prepared: amzn.to/PayjDo'. The location is 'San Francisco, CA', the website is 'eqbot.com', and it was joined in May 2009. There is a blue button that says 'Tweet to SF QuakeBot'. The statistics show 6,998 tweets, 6 following, and 107K followers. The tweets section shows two recent tweets, each with a red square profile picture and a white seismic waveform. The first tweet is from 21 hours ago, reporting a 2.0 magnitude earthquake 7.46 miles ENE of Yountville, California, with details at eqbot.com/VSS and a map at eqbot.com/VSQ. The second tweet is from June 6, reporting a 1.3 magnitude earthquake 3.73 miles SSW of Calistoga, California, with details at eqbot.com/VSU and a map at eqbot.com/VS5. The tweets have 6 retweets and 3 likes.

SF QuakeBot
@earthquakesSF

I am a robot that live-tweets earthquakes in the San Francisco Bay area. Built by [@billsnitzer](#). Data is from the USGS. Get prepared: amzn.to/PayjDo

San Francisco, CA
eqbot.com
Joined May 2009

[Tweet to SF QuakeBot](#)

1 Follower you know

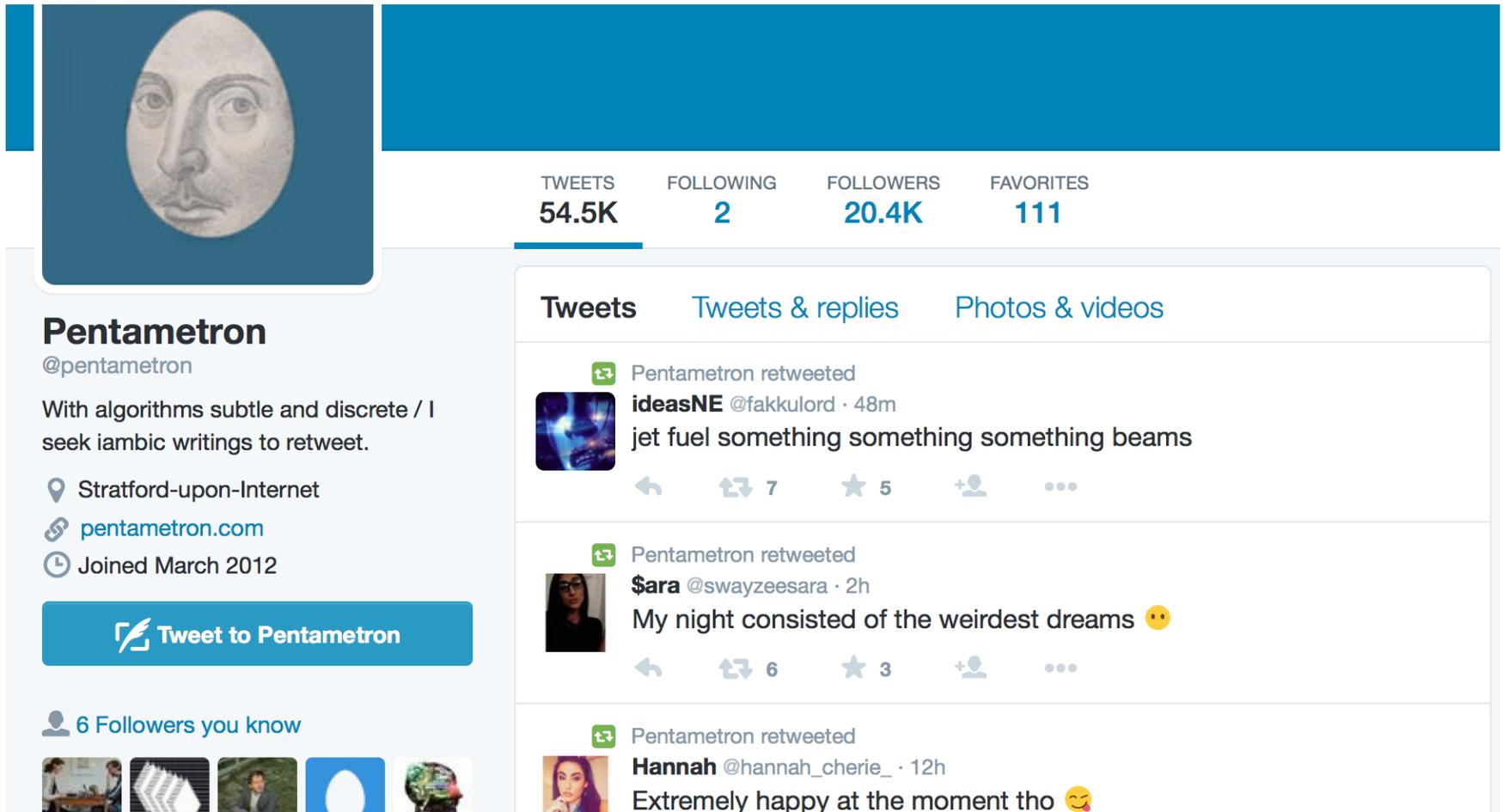
Tweets Tweets & replies

SF QuakeBot @earthquakesSF · 21h
A 2.0 magnitude earthquake occurred 7.46mi ENE of Yountville, California. Details: eqbot.com/VSS Map: eqbot.com/VSQ

6 3

SF QuakeBot @earthquakesSF · Jun 6
A 1.3 magnitude earthquake occurred 3.73mi SSW of Calistoga, California. Details: eqbot.com/VSU Map: eqbot.com/VS5

Watcher bots



The image shows a Twitter profile for a user named Pentametron. The profile picture is a circular portrait of a man's face. The header bar is blue and contains statistics: TWEETS 54.5K, FOLLOWING 2, FOLLOWERS 20.4K, and FAVORITES 111. The bio reads: "With algorithms subtle and discrete / I seek iambic writings to retweet." The location is "Stratford-upon-Internet" and the website is "pentametron.com". The user joined in March 2012. There is a blue button that says "Tweet to Pentametron". Below the bio, it says "6 Followers you know" and shows five small profile pictures. The main content area shows three tweets, all of which are retweets by Pentametron. The first tweet is from @fakkulord about "jet fuel something something something beams". The second is from @swayzeesara about "My night consisted of the weirdest dreams". The third is from @hannah_cherie_ about "Extremely happy at the moment tho".

Pentametron
@pentametron

With algorithms subtle and discrete / I seek iambic writings to retweet.

Stratford-upon-Internet
pentametron.com
Joined March 2012

[Tweet to Pentametron](#)

6 Followers you know

Tweets Tweets & replies Photos & videos

Pentametron retweeted
ideasNE @fakkulord · 48m
jet fuel something something something beams

Pentametron retweeted
\$ara @swayzeesara · 2h
My night consisted of the weirdest dreams 😊

Pentametron retweeted
Hannah @hannah_cherie_ · 12h
Extremely happy at the moment tho 😊

Watcher bots



Hug Bot
@HugsToTheRescue

Everyone needs a hug now and then. a bot by @sachawheeler

Joined January 2013

[Tweet to Hug Bot](#)

488 Photos and videos



TWEETS	FOLLOWING	FOLLOWERS	FAVORITES
58.5K	1,060	1,511	5,661

Tweets Tweets & replies Photos & videos

 Hug Bot retweeted

 **24** @Jayy_Von24 · 11m
Give yo grandmother a hug today

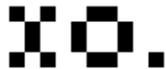
  1   

 **Hug Bot** @HugsToTheRescue · 11m
{{{hugs}}} RT @ChadCross23 What up love I need a hug cause drugs been taking ocer

 **Hug Bot** @HugsToTheRescue · 11m
{{{hugs}}} RT @sniderman1 I need a hug.

Interactive bots



how 2 sext

@wikisext

sexting bot. learned everything it knows from wikihow. tweets hourly. // idea:

@rumnogg, implementation:

@thricedotted

📍 sex place

🔗 [twitter.com/thricedotted/...](https://twitter.com/thricedotted/)

 Tweet to how 2 sext

TWEETS 12.7K FOLLOWING 7,568 FOLLOWERS 6,880

Tweets Tweets & replies

how 2 sext @wikisext · 16m
xo. sext: you wipe both marks away with my lint free cloth or micro fiber while i follow my package instructions



how 2 sext @wikisext · 1h
xo. @1acson @Doug_AG keep going. i lift weights for at least 30 minutes 3 days my week and perform 1 repetition every 2 seconds



[View conversation](#)

how 2 sext @wikisext · 1h
xo. sext: you give it your rinse while i choose my kiwano that is fully ripened

More on bots?

- A brief history of the future on Twitter bots
Michael Cook (2015) - @mtrc
- [http://www.gamesbyangelina.org/talks/
codecamp.pdf](http://www.gamesbyangelina.org/talks/codecamp.pdf)
- Also check: #botally on Twitter

Computational Creativity

- First generation Twitter bots: Tweet-generating systems that autonomously perform useful and well-defined services (Veale 2014)
- Second generation bots: supposed to be creative on purpose instead of hit-and-miss. High curation coefficient: evaluate outputs before posting. (Veale 2015)

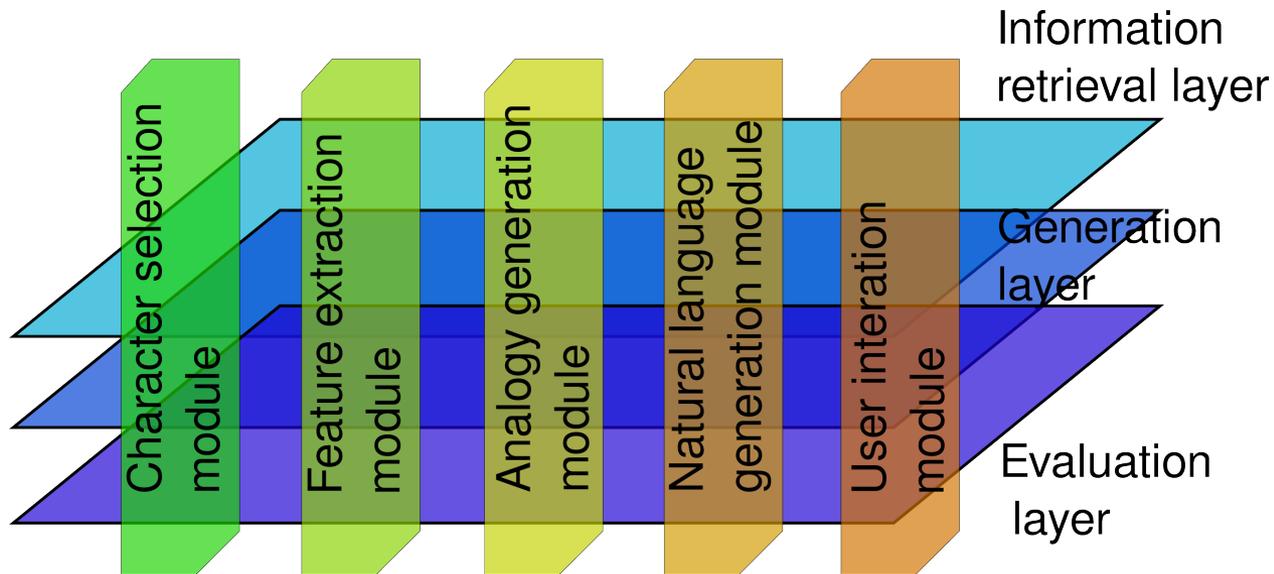
Our system: TheRiddlerBot

Specific task:

- Create a riddle about a famous person/character
- Use both structured and poorly-structured real-world resources
- Evaluate its own output where possible
- Interact with Twitter users

Our model

- Five modules that each have the same three layers in it



Character selection

- Non-Official Character (NOC) list (Veale, 2015)
 - > 800 characters
 - > 20 attributes, e.g. gender, profession, adjectives, ...
- Select one, possibly taking public relevance into account (~Google News)
- Expand from Wikipedia: persons that have a page in at least 50 languages

Feature extraction

Information Retrieval

- Gathers attributes from NOC list
- Combine with information (hypernyms) from common sense knowledge bases, e.g. Perception in NodeBox, ConceptNet
- Also poorly-structured sources, e.g. Wikipedia

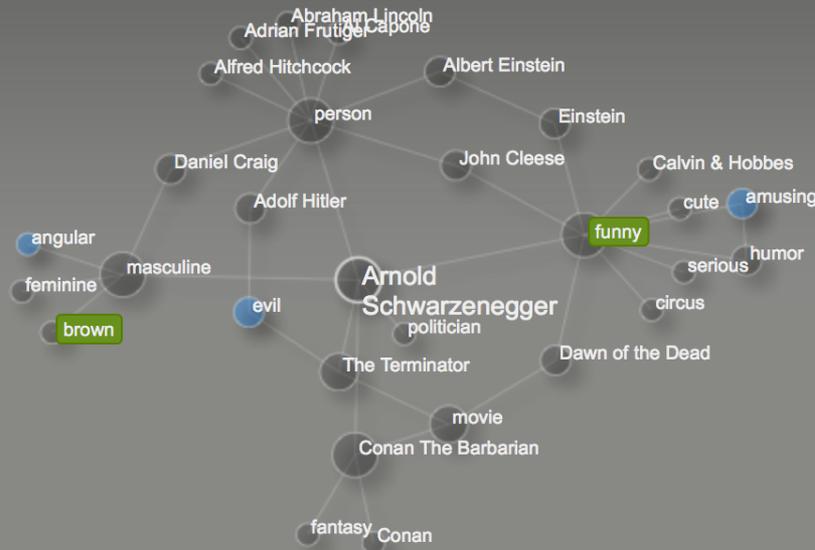
Processing

- Select three attributes

Evaluation

- Evaluate attributes on uniqueness and interestingness
 - Subset of features is unique when refers to 1 person

Perception (NodeBox)



ARNOLD SCHWARZENEGGER » 6 rules

IS-A	HAS-SPECIFIC	IS-PART-OF	HAS-PART	IS-OPPOSITE-OF	IS-PROPERTY-OF	HAS-PROPERTY
Conan The Barbarian						funny
person						masculine
politician						
The Terminator						

Analogy generation

- Comparisons with different characters
 - Fictional world
 - E.g. Doc Emmett Brown is like Walter White but in Back to the Future
 - Group affiliation
 - E.g. Lisa Simpson is the Timothy McGee of The Simpsons Family

Natural language generation

- Retrieval of different types of phrasal templates for parts of the riddle
 - Initial phrase
 - Clues
 - Final question
- Phrasal template: previously-known sentence with slots to be further filled by specific words
- Different templates exist for each type to have a wider variety of generations.

Example phrasal templates

Profession attribute	-be/VB <i><value></i> -be/VB <i><value></i> , <i><pos_adj></i> yet <i><neg_adj></i>
Opponent attribute	-do/VB not like <i><value></i> -be/VB definitely not a close friend of <i><value></i>

User interaction

- Twitter users can guess the answer to the riddle
- The bot will check if the answer is correct with the official name and all Wikipedia aliases
- The bot replies: correct or false, also with different templates.

Sample riddles generated

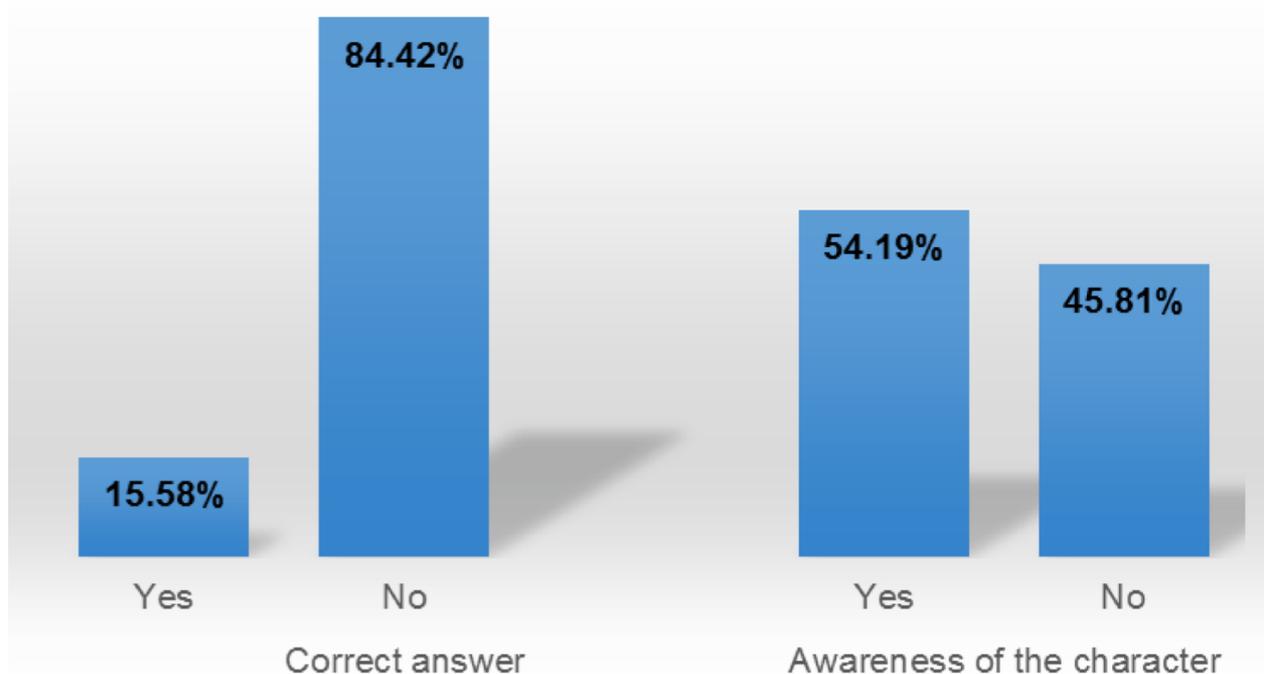
- Who is a basketball player, fast yet smug, lives in USA, wears clown shoes?
- Who is a sultry actress, loves starring in Hollywood movies, likes wearing a tight dress?
- Who can be found in Germany, wears an SS uniform, is the Colonel Kurtz of The Nazi Party?

Evaluation

- Metadata of the bot (number of retweets, favorites, answers, ...) could be used for evaluation?
- Some statistics:
 - 57 followers
 - 285 riddles generated
 - 10 different users with 34 correct answers

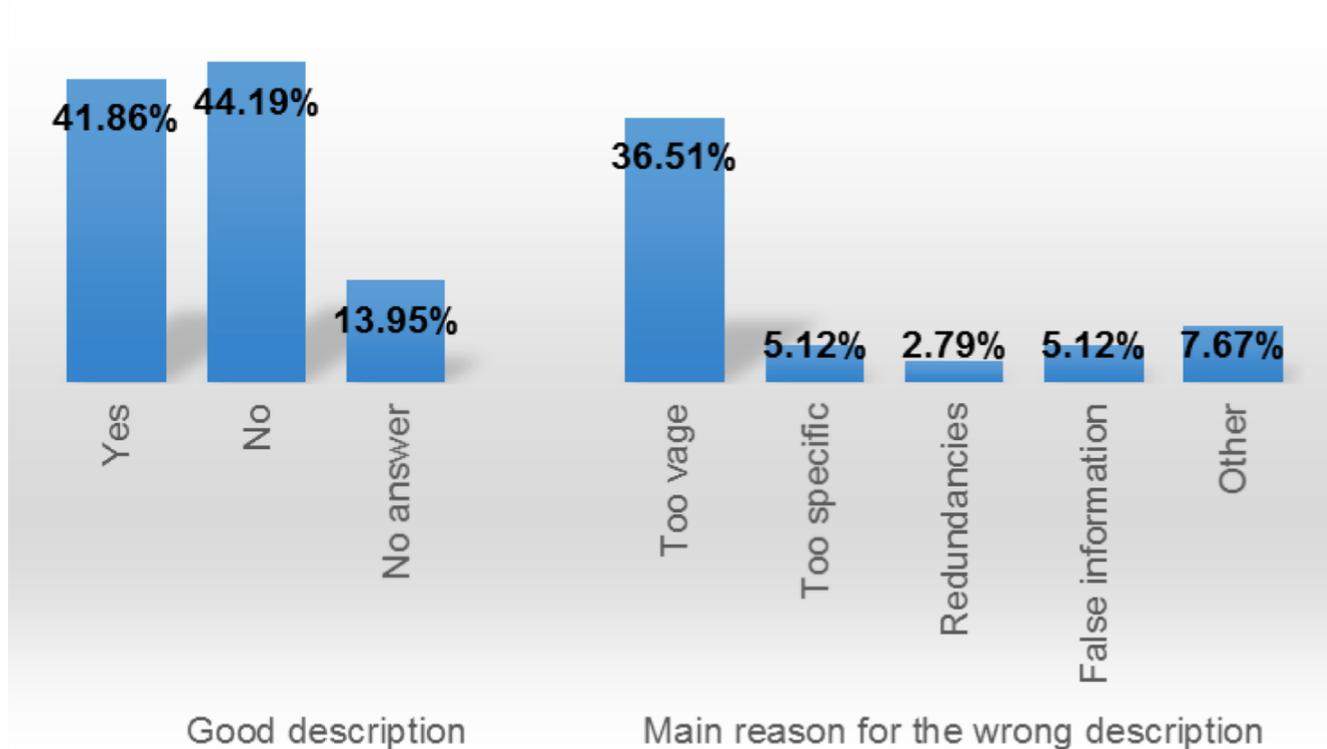
Evaluation

- Crowd-sourced quality-control
- 86 people evaluated 5 riddles each



Evaluation

- Crowd-sourced quality-control
- 86 people evaluated 5 riddles each



Best riddles generated

- Who is a creative professional, pretty yet superficial, can be found in USA, enjoys monetizing celebrity status?
- Who is a religious leader, loves spreading Christianity, likes wearing sandals?
- Who is a creator, can be found in Italy, wears a paint-stained smock?

To conclude

- We built an interactive Twitter bot that generates riddles and posts responses to guesses.
- The novelty and creativity is in
 - The combination of well-structured and poorly-structured information sources.
 - The creation of analogies
- The fun is in the gamification.
- Entire code available online:
<https://github.com/ivangro/theriddlerbot>

Let's play!



TheRiddlerBot @TheRiddlerBot · 3h

I am known as a creative professional, live in UK, like creating dictionaries. Who am I?

9:17 AM - 9 Jun 2015 · Details

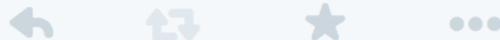


Reply to [@TheRiddlerBot](#)



Ben Verhoeven @verhoevenben · 19m

[@TheRiddlerBot](#) Samuel Johnson



TheRiddlerBot @TheRiddlerBot · 19m

[.@verhoevenben](#) You did it! The answer was indeed Samuel Johnson.

