



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, @pedrojmmartins 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

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 **6,998** FOLLOWING **6** FOLLOWERS **107K**

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

Pentametron
@pentametron

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

Stratford-upon-Internet
pentametron.com
Joined March 2012

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)

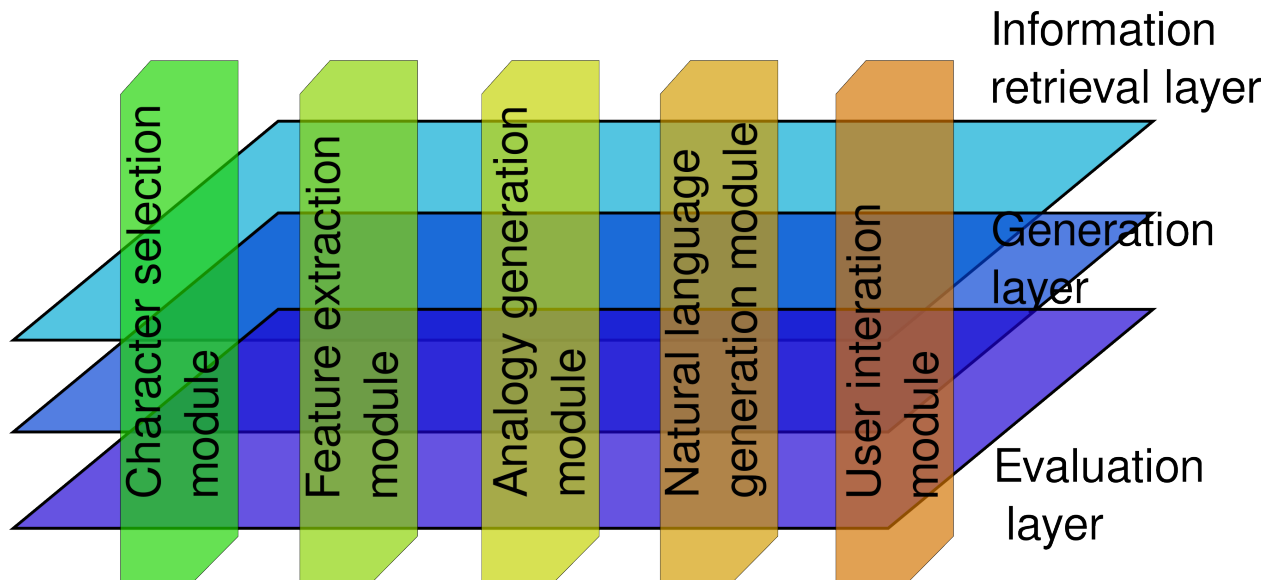
Our system: TheRiddlerBot

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

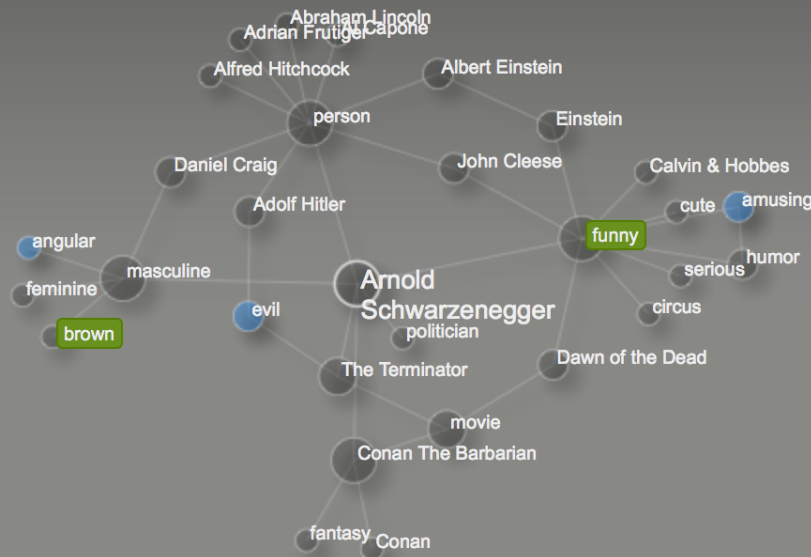
Processing

- 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

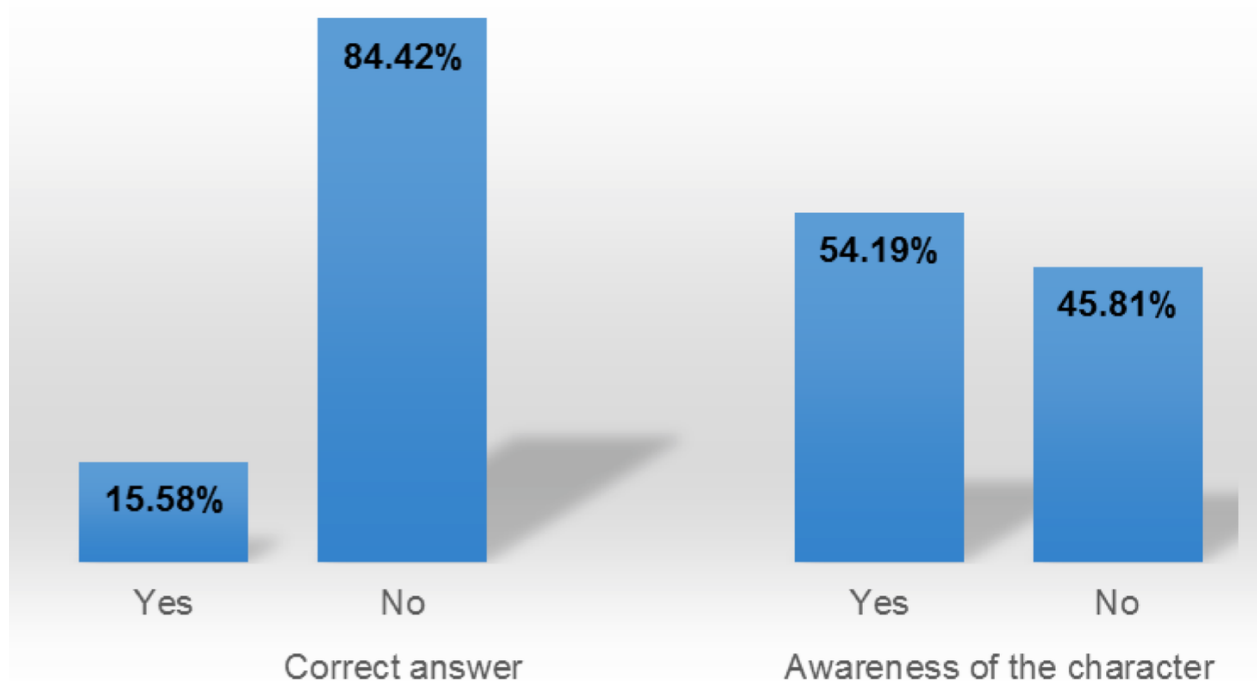
- Who is a basketball player, fast yet smug, lives in USA, wears clown shoes?
- Who is a sultry actress, loves starring in Hollywood movies, likes wearing a tight dress?
- Who can be found in Germany, wears an SS uniform, is the Colonel Kurtz of The Nazi Party?

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

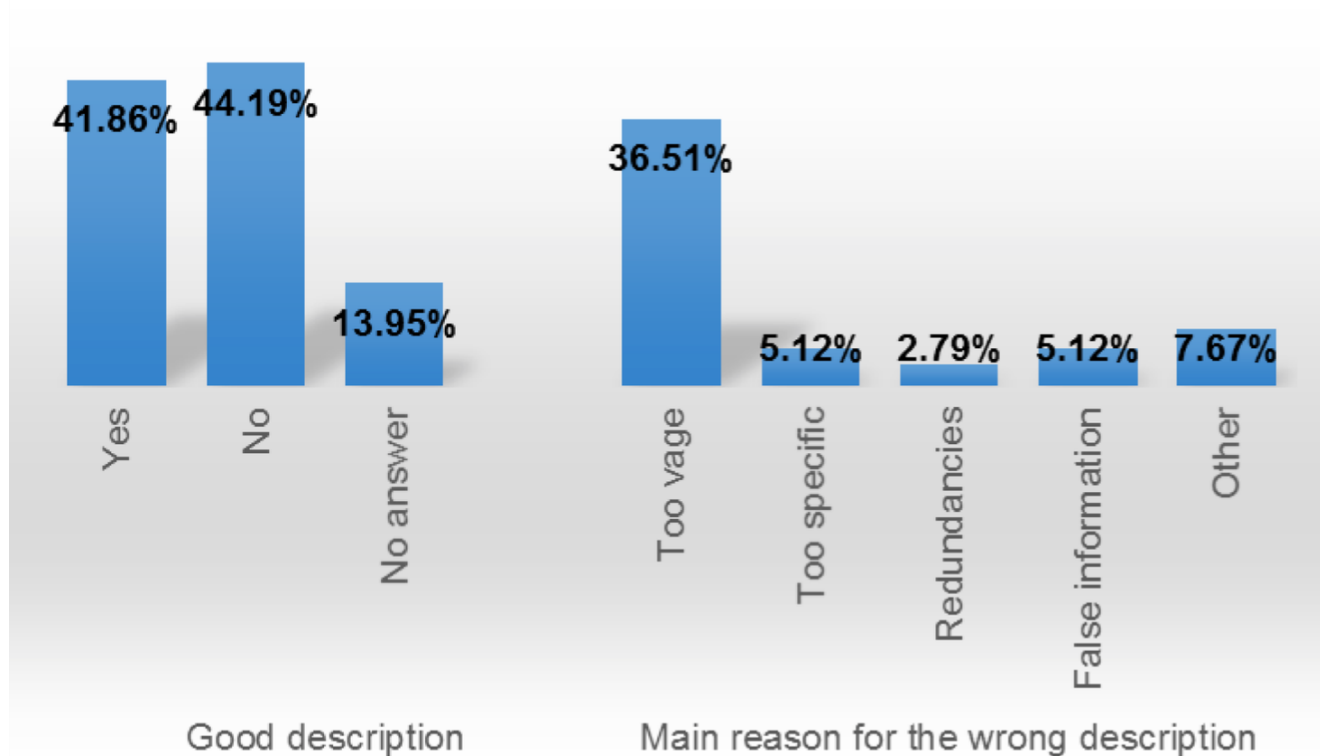
Evaluation

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



Evaluation

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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.

