



My GPT-2 is EXTRA LARGE
Enlarge yours too!

FUNBOY

DARVAH for NLD in HRI

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Mid Terms - WS1920

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THE QUESTIONS WE ASK

to be or not to be

How do people react to jokes produced by a Neural Language Model conditioned on humour data and delivered by a robot in a verbal interaction?



THE GOALS WE YEARN

oh girls just want to have fun

1. Roboy performs non-typed proactive humour.
2. Roboy performs non-typed reactive humour.
3. Roboy can perform emotion analysis based on vision and speech.
4. Roboy learns to combine emotional responses with humour generation in personal profiles.
5. Roboy can imitate laughter for humour delivery purposes.
6. A dataset of hardcoded and pre-generated jokes is created.



THE IDEAS WE CONCEIVE

glory to the god of acronyms

DARVAH

D - deduce if the situation requires a humorous response

A - assess which type of humour would be acceptable

R - render a joke according

V - validate how the interlocutor reacts

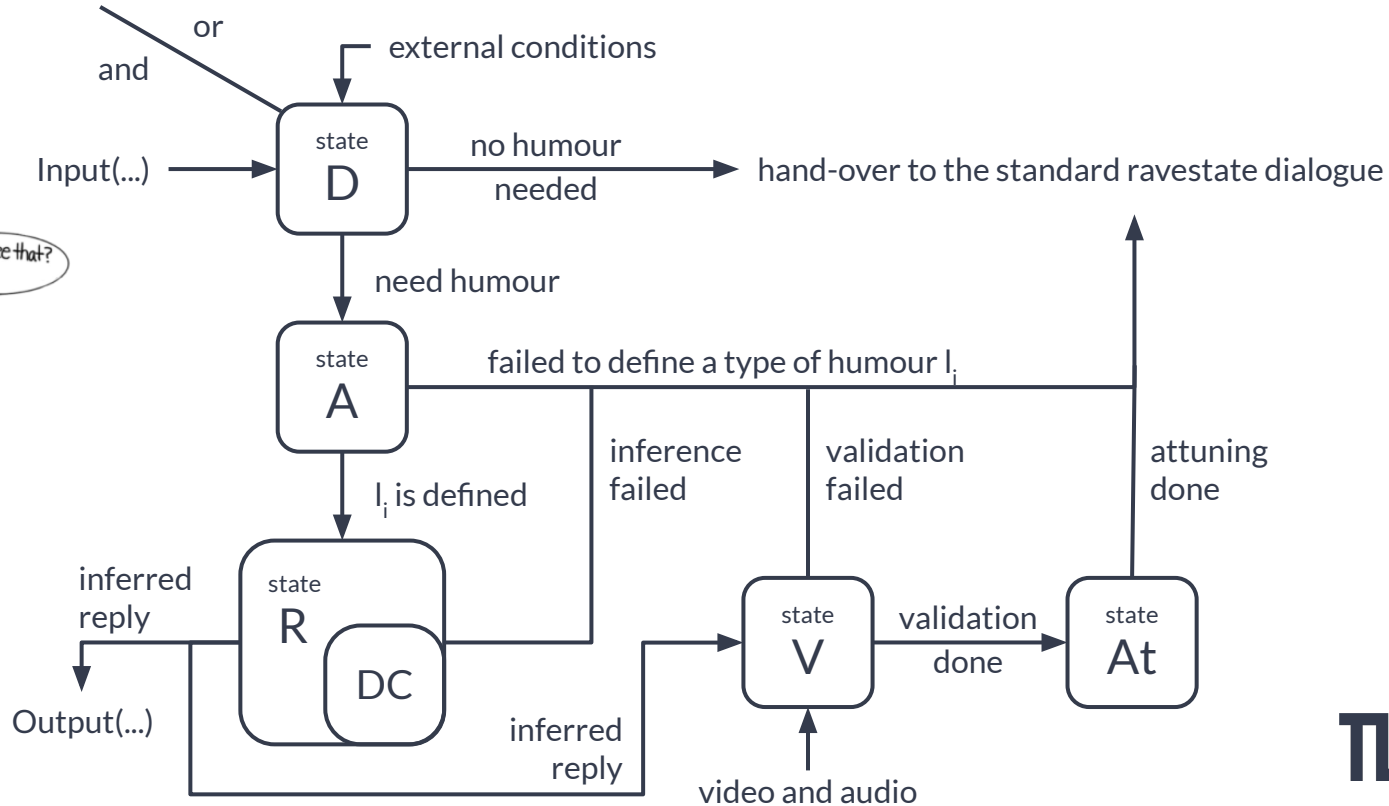
A - update the personal profile of the interlocutor

H - the 'h' is silent



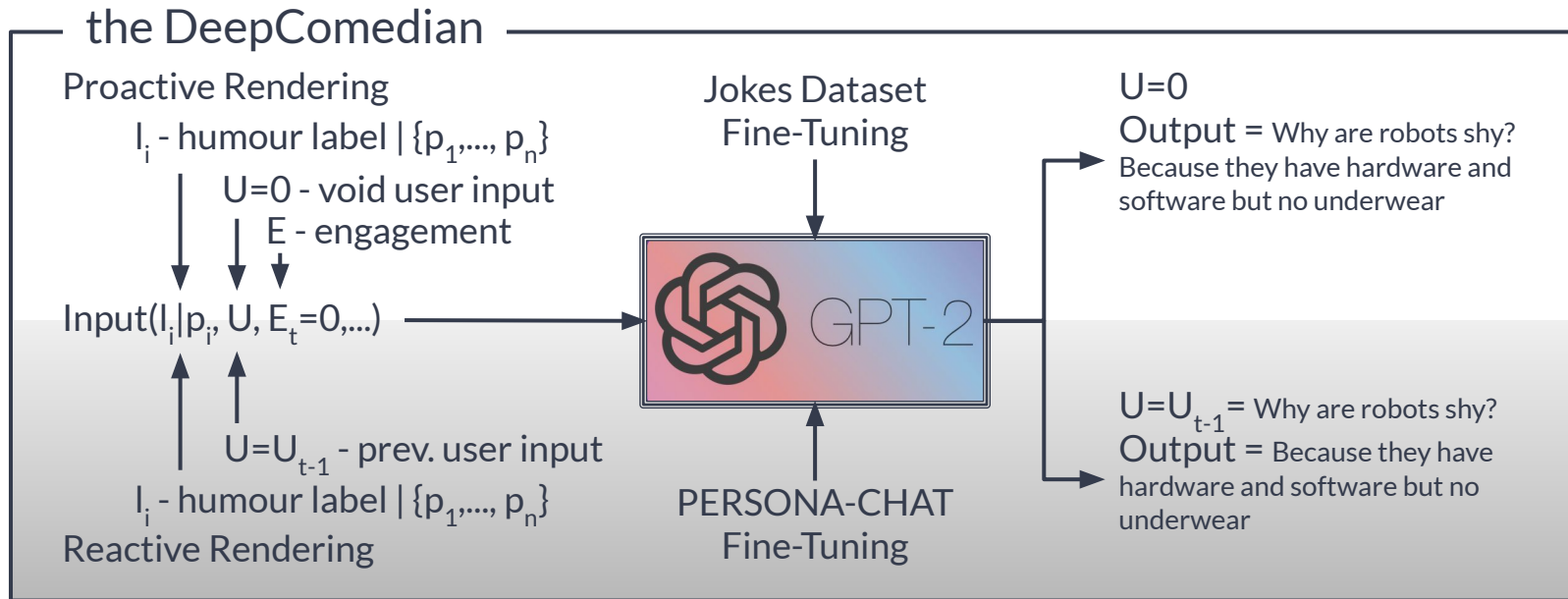
ARCHITECTURE

what did the architect say to the circle?



RENDERING HUMOUR

what are two things on top of a hotdog? its legs



DATASETS

nowadays even data is a science

Jokes Dataset: 168639 jokes; Reddit - 90%, wocka.com - 10%

PERSONA-CHAT:
(TBD)

Persona 1	Persona 2
I like to ski	I am an artist
My wife does not like me anymore	I have four children
I have went to Mexico 4 times this year	I recently got a cat
I hate Mexican food	I enjoy walking for exercise
I like to eat cheetos	I love watching Game of Thrones

[PERSON 1:] Hi
[PERSON 2:] Hello ! How are you today ?
[PERSON 1:] I am good thank you , how are you.
[PERSON 2:] Great, thanks ! My children and I were just about to watch Game of Thrones.
[PERSON 1:] Nice ! How old are your children?
[PERSON 2:] I have four that range in age from 10 to 21. You?
[PERSON 1:] I do not have children at the moment.
[PERSON 2:] That just means you get to keep all the popcorn for yourself.
[PERSON 1:] And Cheetos at the moment!
[PERSON 2:] Good choice. Do you watch Game of Thrones?
[PERSON 1:] No, I do not have much time for TV.
[PERSON 2:] I usually spend my time painting: but, I love the show.

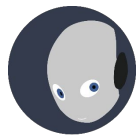
Example dialog from the PERSONA-CHAT dataset. Person 1 is given their own persona (top left) at the beginning of the chat, but does not know the persona of Person 2, and vice-versa. They have to get to know each other during the conversation.



GPT-2 FINE-TUNING

Out-Of-Memory Exception

Fine-Tuned: GPT-2 “M” $355 * 10^6$ parameters
Hardware: 1x RTX 2080 Ti, 11GB
Optimizer: Adam
Iterations: 15 000
Memory Usage: 10 GB for only Transformers update



CONSIDERATIONS

your mama is so mean, she has no std

1. It is actually interesting that it tends to preserve short jokes
2. To-be-included semantic similarity metric will affect the inference results
3. The real amount of disfluent and broken predictions within sampled tokens is ~100x more than clean ones
4. It still attempts to generalise and it is at least not worse than previous research attempts
5. DNNs are a mirror of the humankind
6. Let's add Twitter data too - what can go wrong?



CLEAN PREDICTIONS

laugh, you fools!

NSFW!

GPT-2 355M Parameters Samples At First 15000 Iterations

=====
<|endoftext|>

what is a mexican's favorite letter? most likely it's not the r but rather the u which means he's probably not a racist.

<|endoftext|>

what do you call a fat man flying a plane? a pilot

<|endoftext|>

i got a new watch for my wife.. it was a hard time convincing her to get on the bed and accept it.

<|endoftext|>

what is it about chinese people that make them funny? there's a lot of dicks in their mouth.....

<|endoftext|>

's a good thing i'm an introvert... when you ask my friends what's up they'll all just be quiet and say nothing.

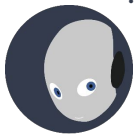
<|endoftext|>

how many blondes does it take to screw in a light bulb? don't have them dye their hair blonde!

<|endoftext|>

What do you call a white rabbit that only has brown feet? a rabbit with diabetes.

... these and other samples to be available in Roboy Core right after



ROBOY.ORG