How do you teach computers humor?



Thomas Winters

PhD Student at KU Leuven & FWO Fellow

@thomas_wint

thomaswinters.be

Slides: thomaswinters.be/talk/2023cc

What is the difference between leaves and a car?





One you brush and rake,

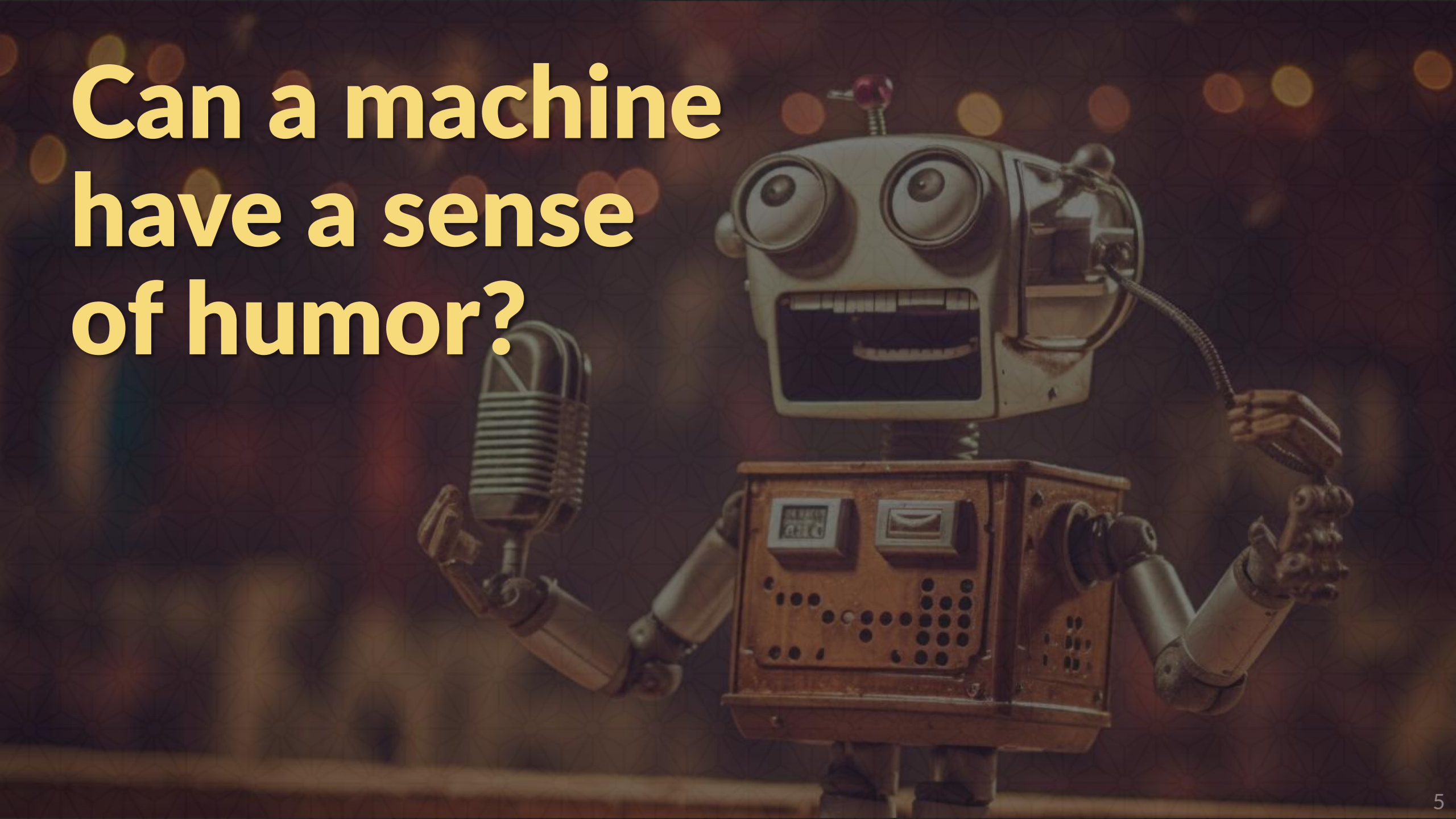
the other you rush and brake.



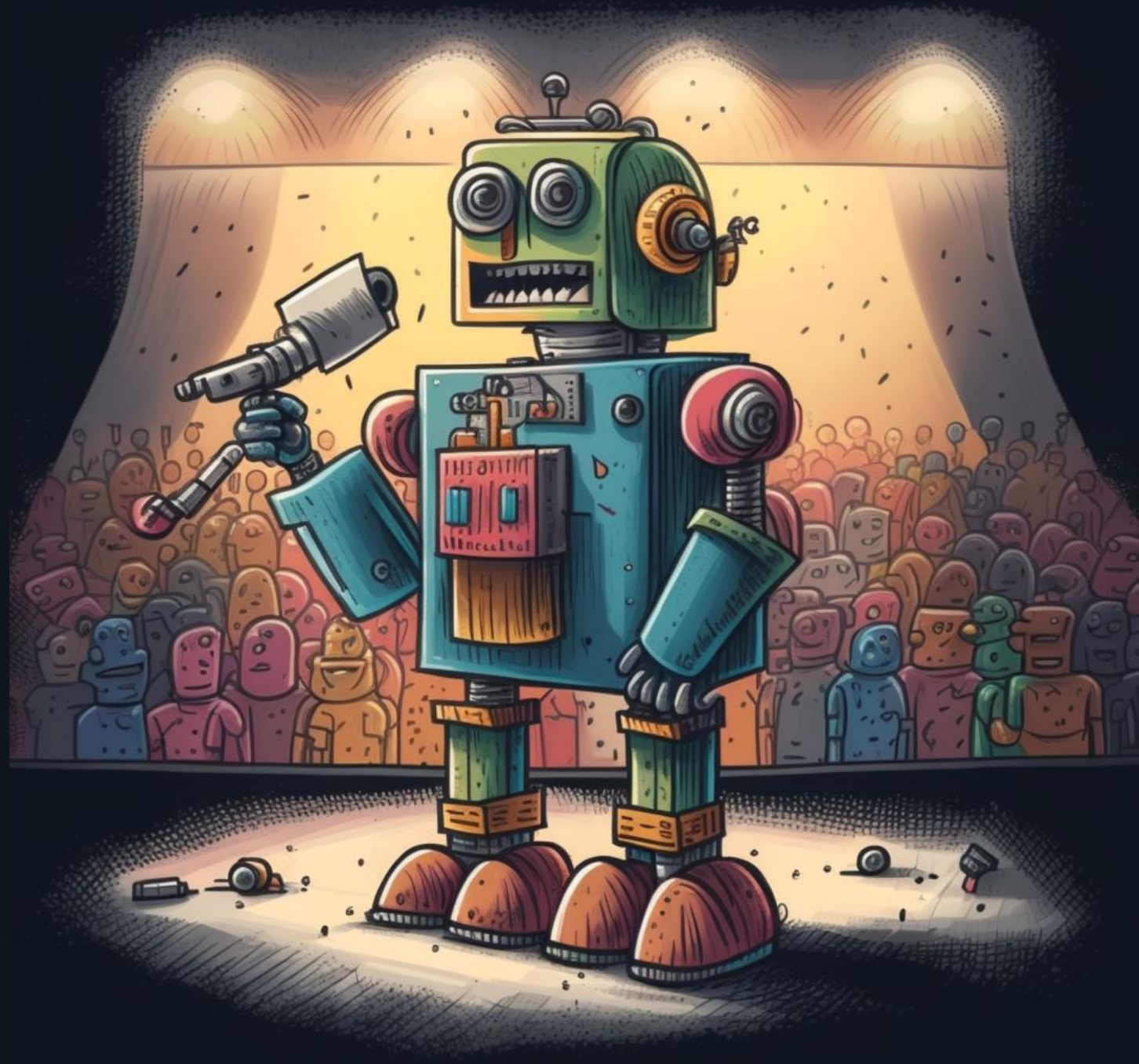
Belgian prime minister says the next five winters will be difficult due less energy supply.

We asked the Belgian prime minister for comment, but he was too busy stockpiling firewood.

Can a machine have a sense of humor?



Computer + humor = paradox?



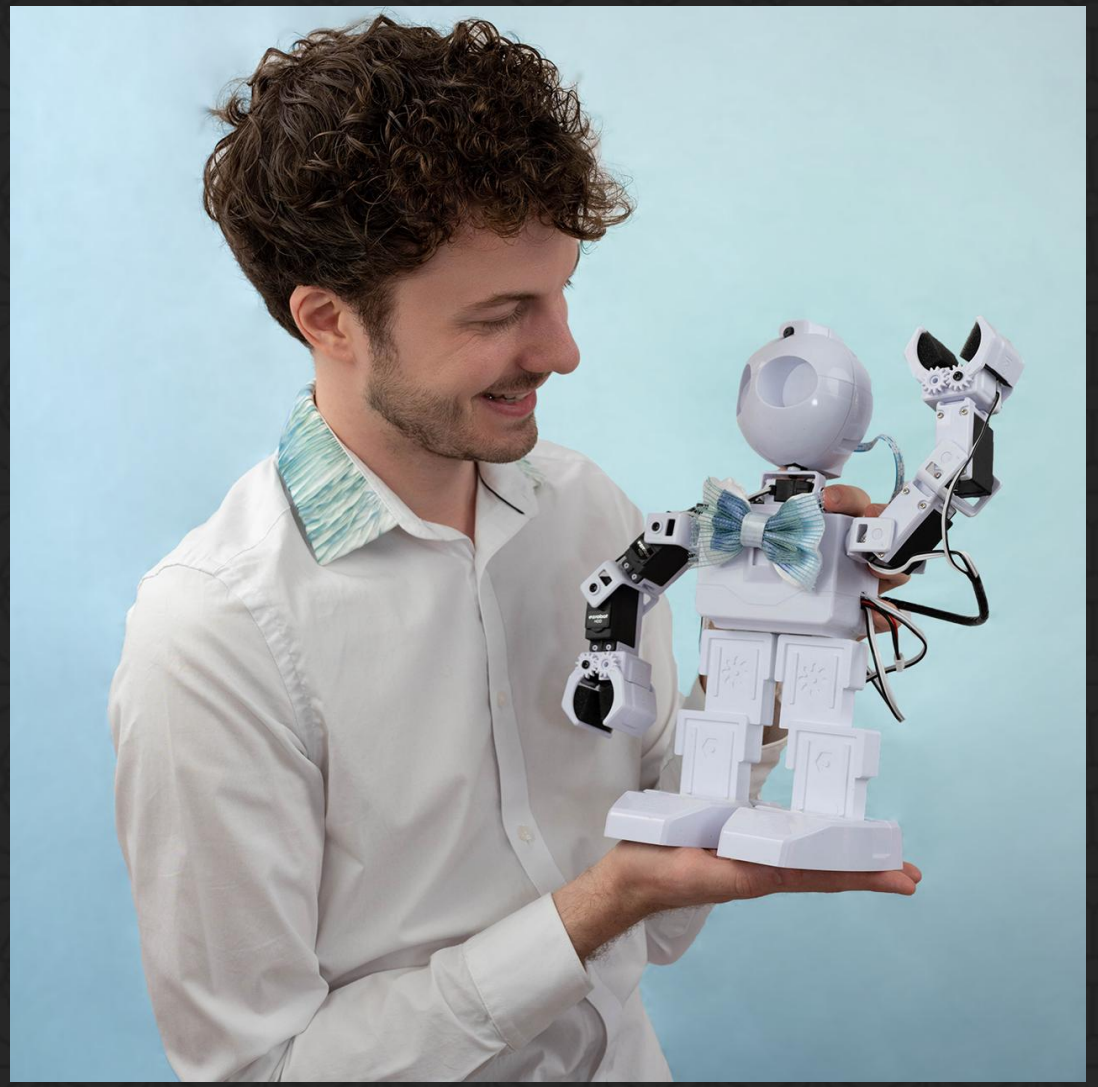
Humor = intrinsically human



Thomas Winters

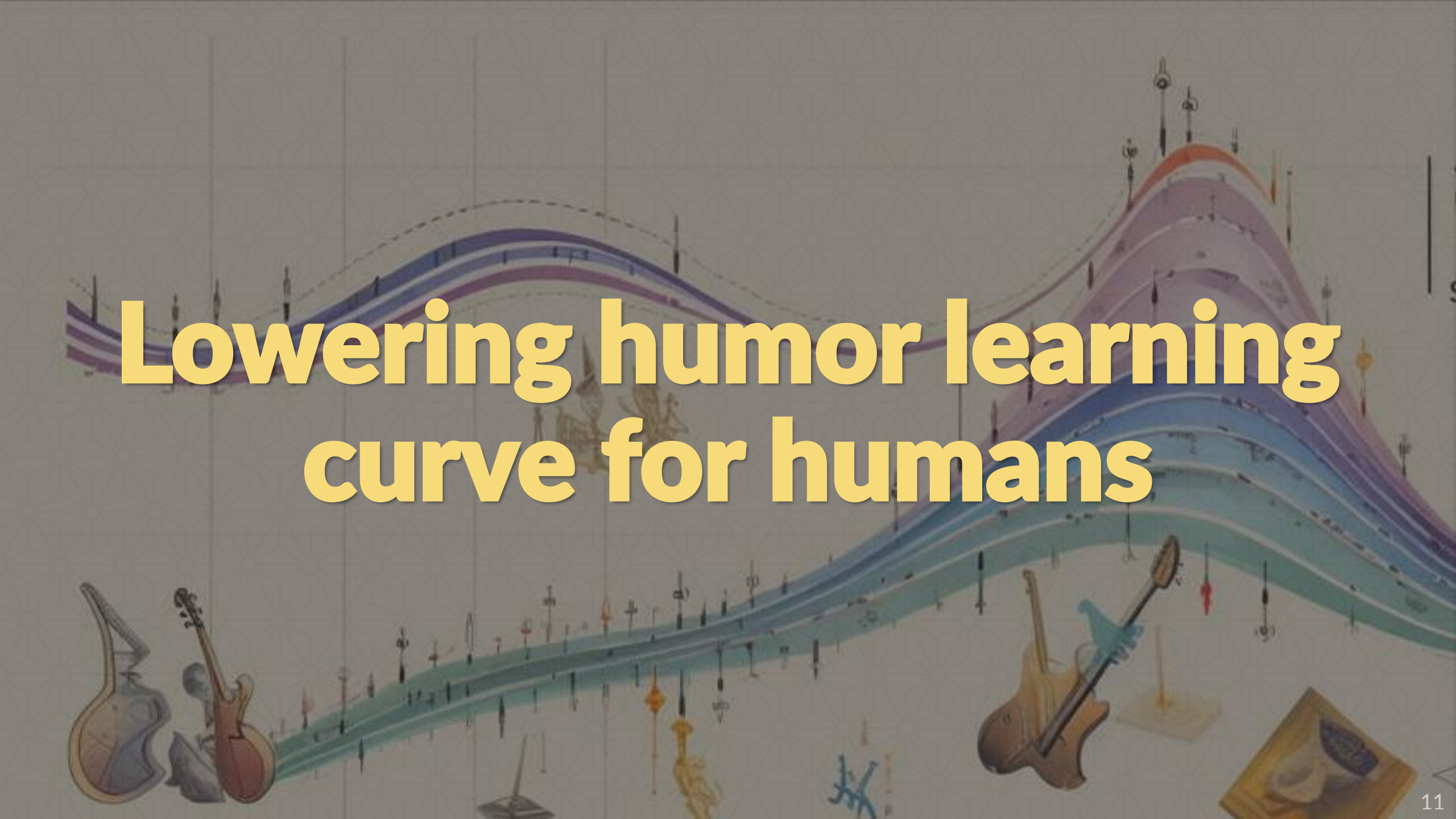
- PhD student since 2018
  - computational humor
  - creative AI
  - language models
- Part of Machine Learning Lab in DTAI group @ KU Leuven
- Improvisational theater

KU LEUVEN LEUVEN.AI DTAI



Why do computers need humor?

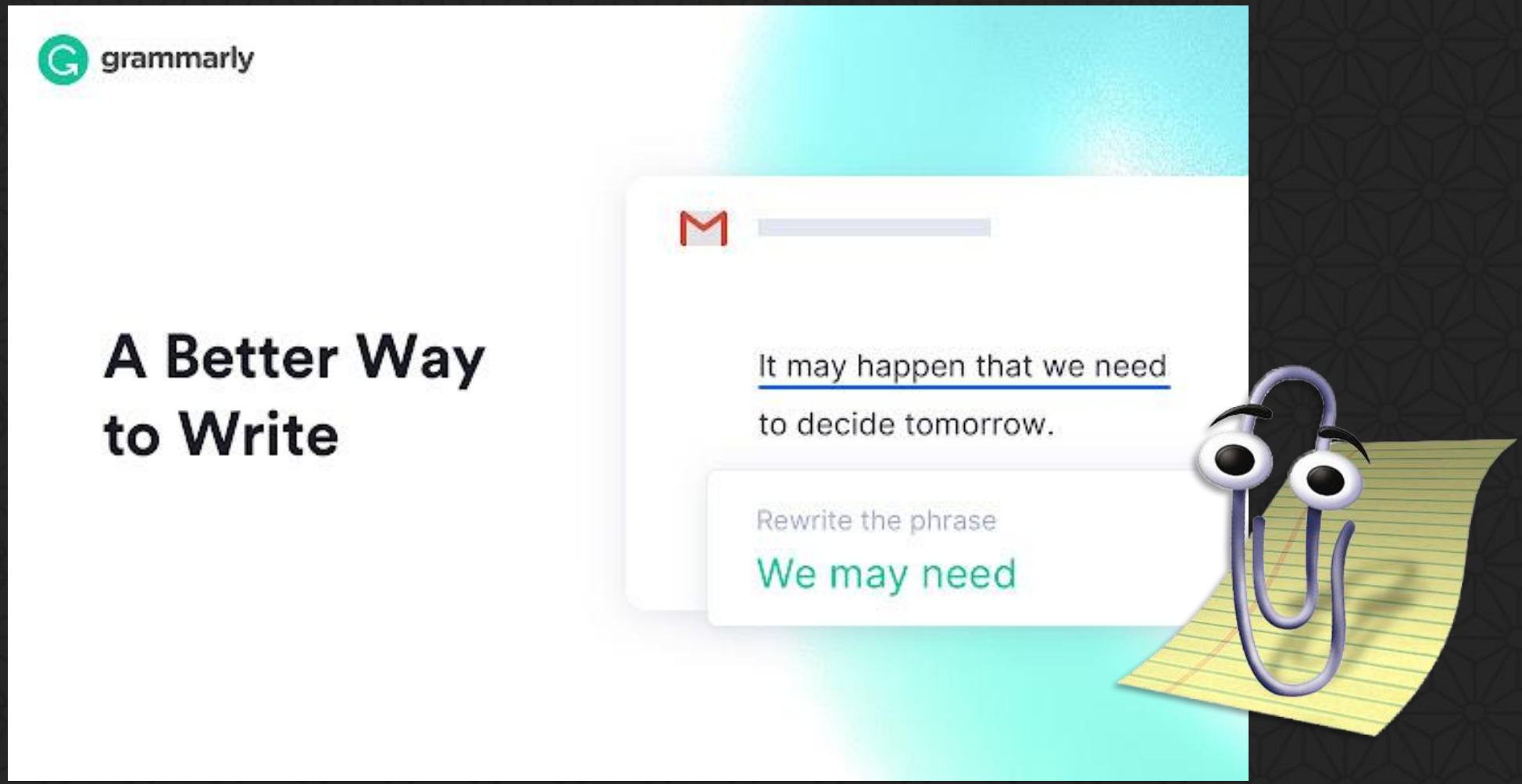




Lowering humor learning curve for humans

Humor co-creation

Grammarly / Clippy but for jokes

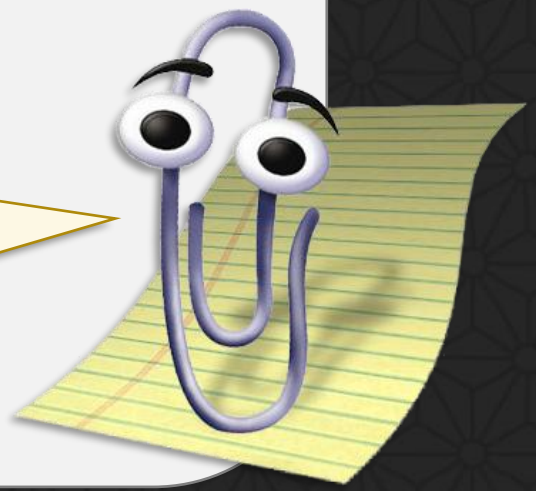


Humor co-creation

My ex-wife still misses me, but her aim is steadily improving.

"I told my dog to sit, but he just lay down and refused to move."

Adding more specifics can help funniness, for example
“plopped down and staged a protest”



Future conversational agents need to know when you're joking

People often treat virtual assistants like humans

("please", "thank you", "sorry") [1]

Humor and creativity in language is important between **friends** [2]



[1] https://www.thinkwithgoogle.com/consumer-insights/voice-assistance-consumer-experience/

[2] Laughter's Influence on the Intimacy of Self-Disclosure, Gray, A.W., Parkinson, B. & Dunbar, R.I. Hum Nat (2015) 26: 28.

Casual Creation: it's fun to create these little bots!

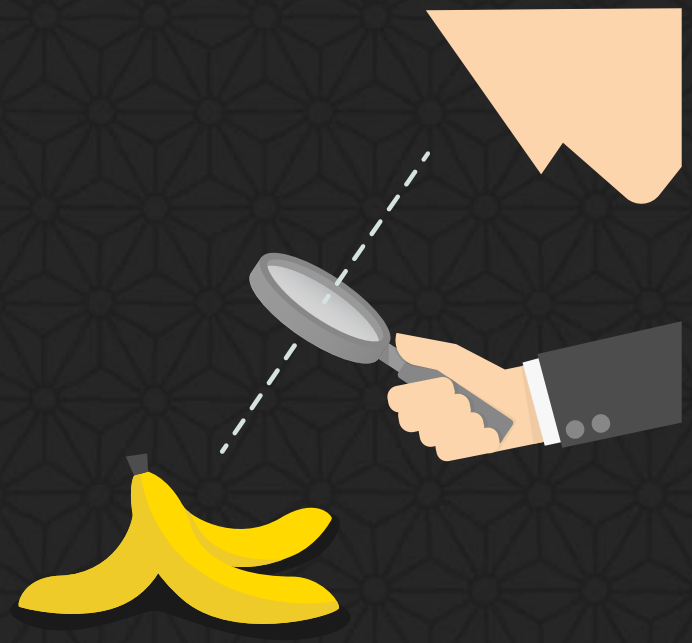


https://thomaswinters.be/mopjesbot

Studying & understanding humor

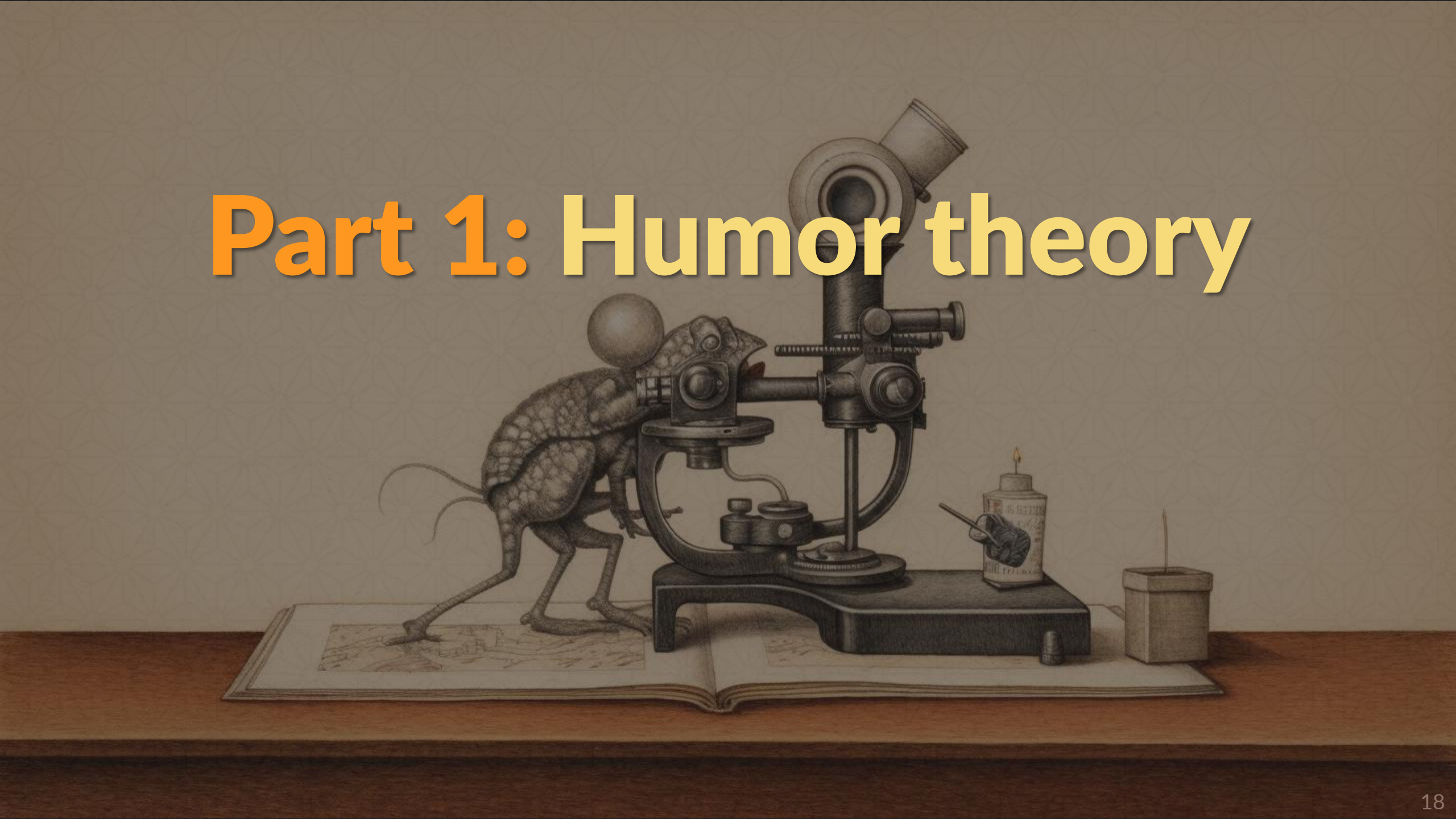
We do not fully know how humor works





Artificial Intelligence can shed a light!

Part 1: Humor theory



Purpose of Humor = Sign of Intelligence?

Brain rewards noticing incongruities and successfully resolving them

+ linguistic skills

+ hard to fake display of personal values

= Evolutionary advantage!




How does humor work?



Analyzing humor is like dissecting a frog.

You understand it better, but the frog dies in the process

E.B. White

Incongruity-Resolution Theory

Setup *Two fish are in a tank. Says one to the other:*

Punchline *"Do you know how to drive this thing?"*

Obvious Interpretation



Hidden Interpretation



Based on: Ritchie, G. (1999). Developing the incongruity-resolution theory.

Humor breaks the predicted world model

Everyone
loved jumping
from the tree
into the swimming pool,
so we decided to put in a
little
water



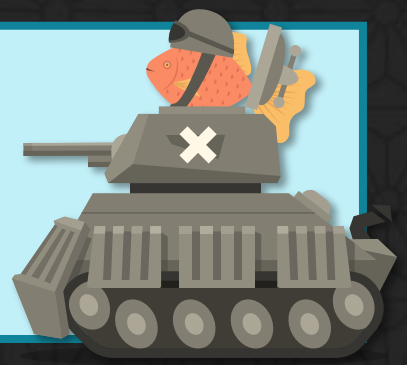
Human-focused definition!

Machine should **not only spot two mental images**

Obvious Interpretation



Hidden Interpretation



But also that it is **not too hard or too easy** for a **human**!

Humor = AI-complete?

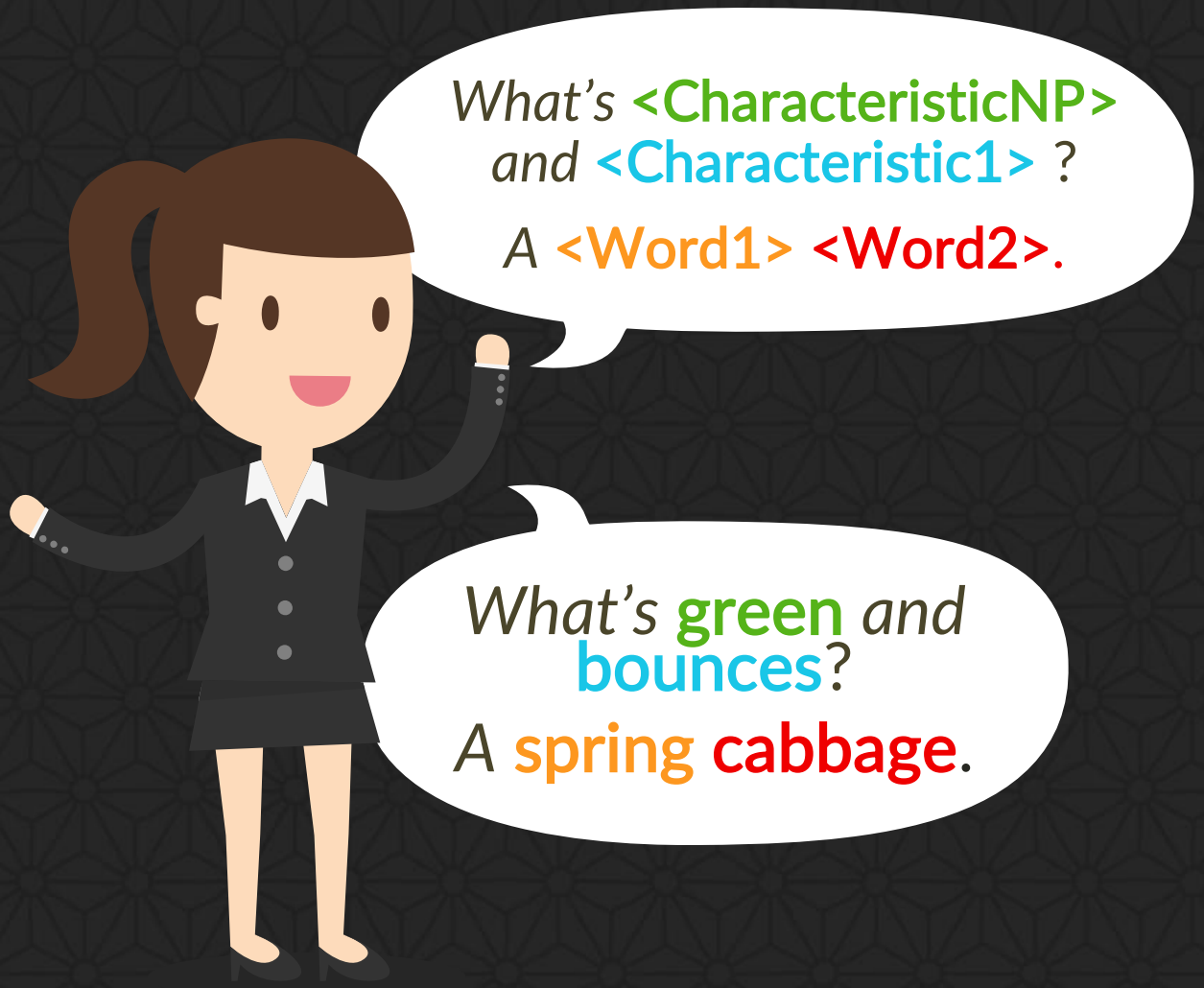
~ as hard as making computers as “intelligent” as people

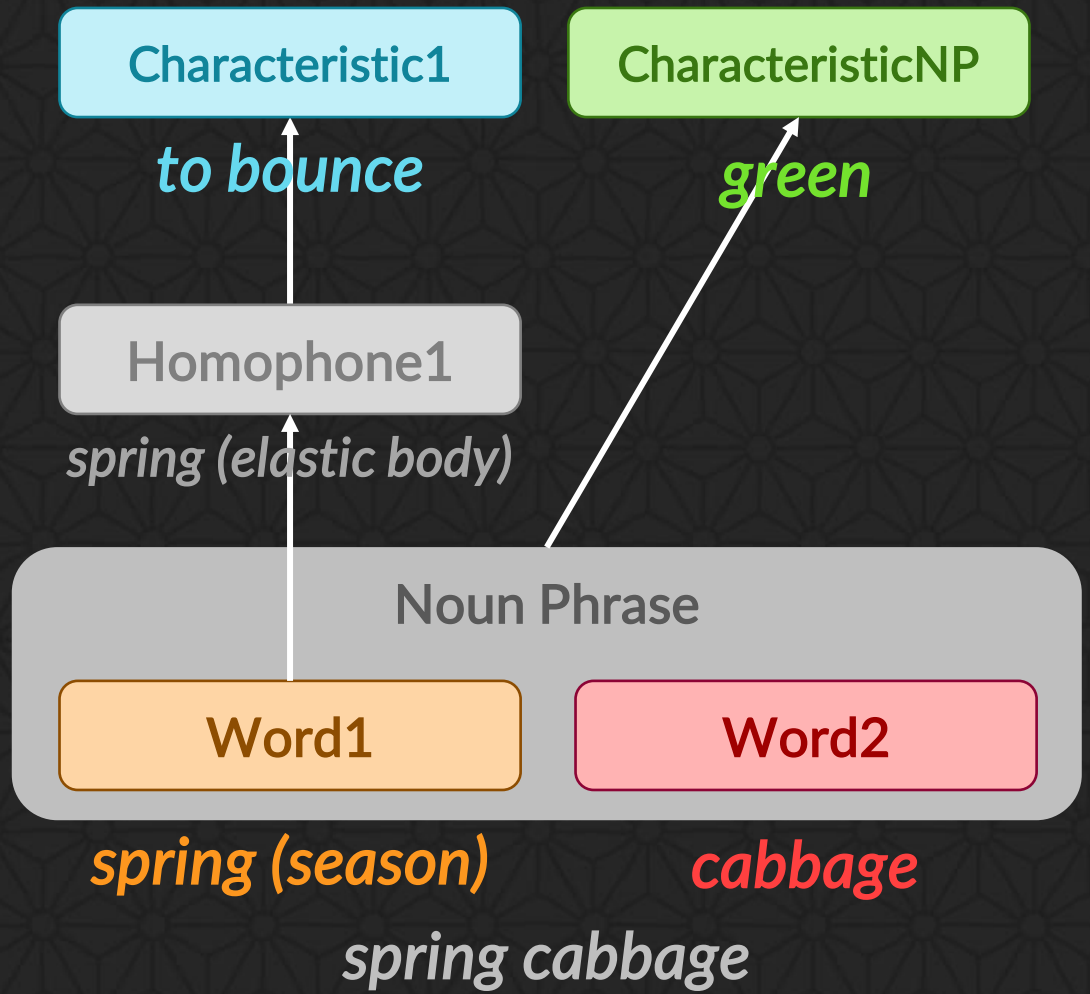


Part 2: Computers can follow humor instructions

Templates, Schemas, Grammars
Hard-coding a sense of humor

JAPE: Templates & Schemas

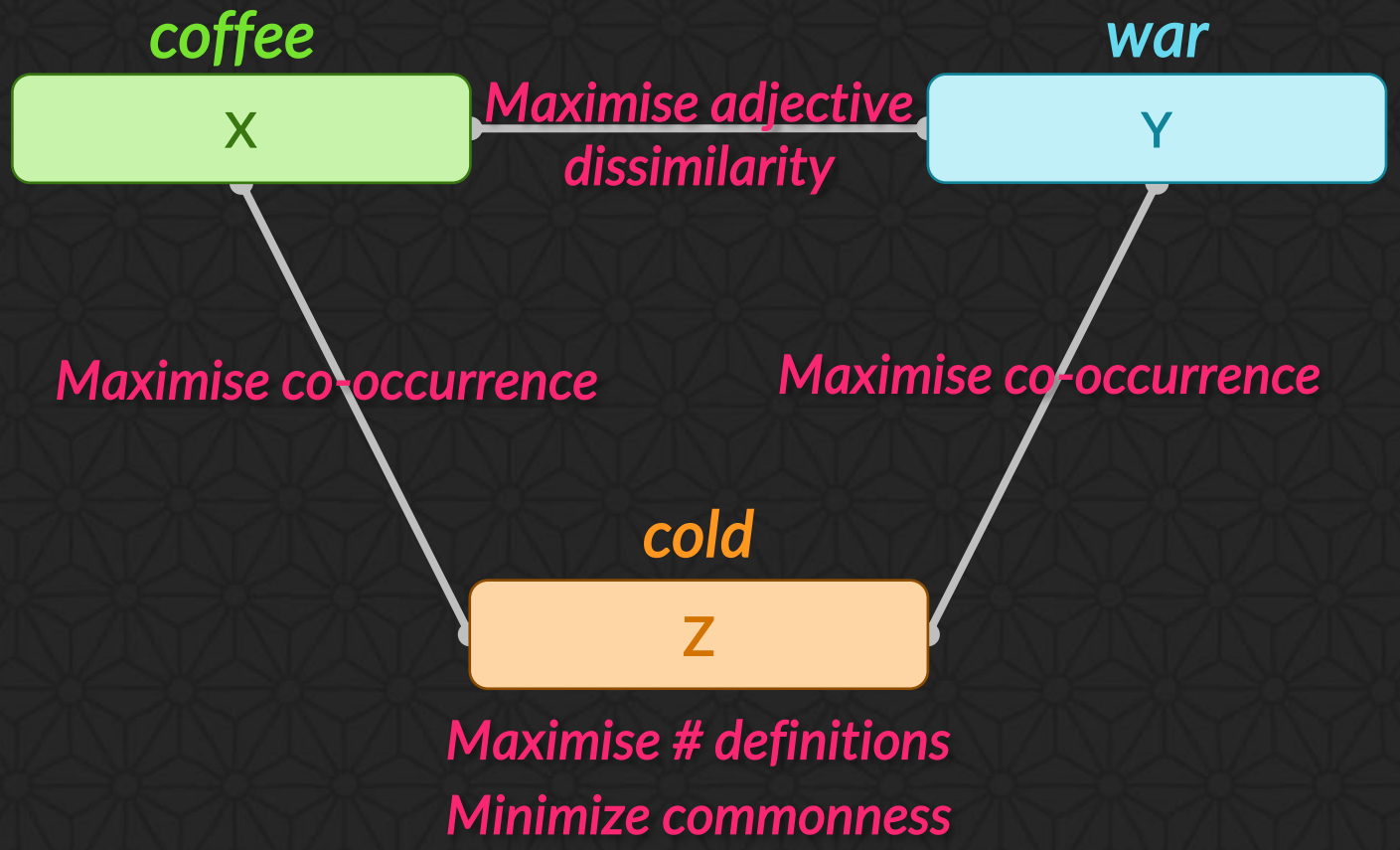




Binsted, K., & Ritchie, G. (1994). An implemented model of punning riddles

Unsupervised Analogy Generator





Petrović, S., & Matthews, D. (2013). Unsupervised joke generation from big data

Generative grammars

S → <Greeting>, <Location>
Greeting → “Hello” | “Hi”
Location → “world” | “universe”

Generates:

“Hello, world”, “Hi, world”, “Hello, universe” & “Hi, universe”

Templates + Grammar + Functions = Babbly

Babbly: my **programming language for text generation** with grammars

```
import firstname.words
food = pasta|pizza|sushi
main = {
  3: <firstname> loves <food.uppercase>!
  1: <firstname> (quite|reasonably|fairly) likes <food>. Oo{1,3}h, I hope they join!
  1: <firstname:protagonist> is not (quite){.5} fond of <food:>.
       <firstname:protagonist> will thus not go to the <food:> (restaurant|place).
}
```

Generates sentences like:

- *Lieven loves PIZZA!*
- *Thomas is not quite fond of sushi. Thomas will thus not go to a sushi place.*

Available on github.com/twinters/babbly
Other popular grammar modelling alternative: ***Tracery***

Generative grammar for simulating Samson

```
// INPUT
verspreking = "<langwoord.verspreek>"
titel = \titel(<voornaam> <achternaam>)
aanspreking = (<vaste_aanspreking>)/((<titel> /meneer )(<achternaam.verspreek.capitaliseAll>/<voornaam.verspreek.capitaliseAll

// SAMSON MANNERISMS

// 'Zo' tussenvoegsel
zo = ( zo){.65}

// Mwah zeg he
ao = (a|o)
mwazeg = Mw<ao:>{1,3}h (zeg hé( <aanspreking>){.6}|<aanspreking>)

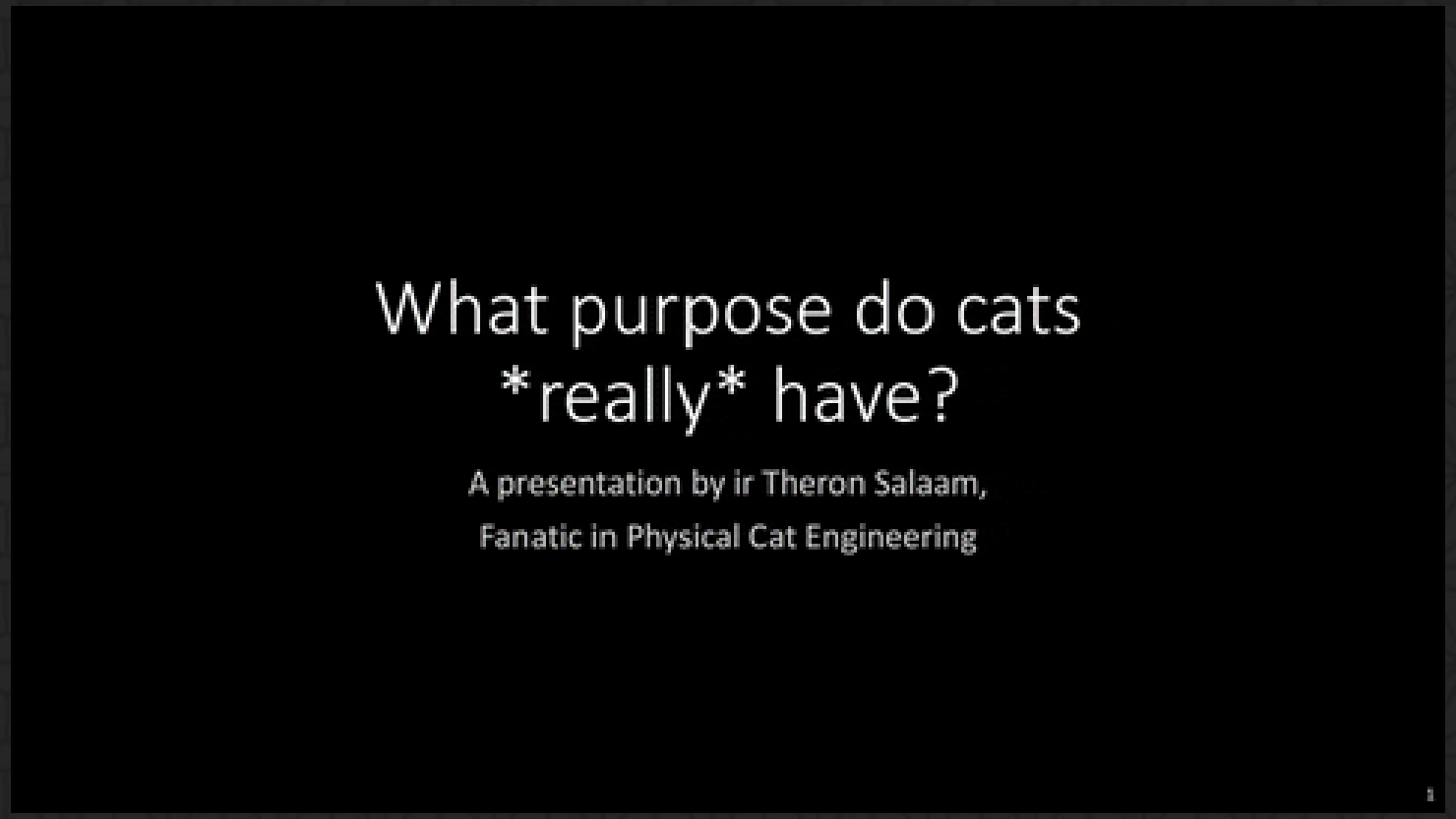
// Vraagstelling
vraag = {
    4: wat is dat<zo> een beetje<zo>, een <verspreking><zo>?
    1: wat bedoel je<zo> een beetje<zo> met<zo> een <verspreking><zo>?
}
uitlegVraag = {
    4: <vraag>
    1: ik denk zo stil<zo> in mijn hoofd<zo> dat ik<zo> niet weet wat dat<zo> is<zo>, een <verspreking><zo>.
    1: ik weet<zo> niet<zo> goed<zo> wat dat is<zo>, een <verspreking><zo>.
    1: mag ik<zo> eens<zo> iets<zo> vragen<zo>? <vraag.capitalise>
}

// OUTPUT
main = {
    <mwazeg>, <uitlegVraag>
}
```



Talk Generator

Generates nonsense PowerPoints about any given topic for presenters to improvise on



Try it yourself: ***talkgenerator.com***

Slide generator

[Historical Title Generator]
(Tracery + WikiHow)

[Vintage Person Generator]
(Reddit)

[Quote Generator]
(GoodReads)

[Name Generator]
(Tracery)

corner
mouse

First Person to Care for Baby Wild Mouse



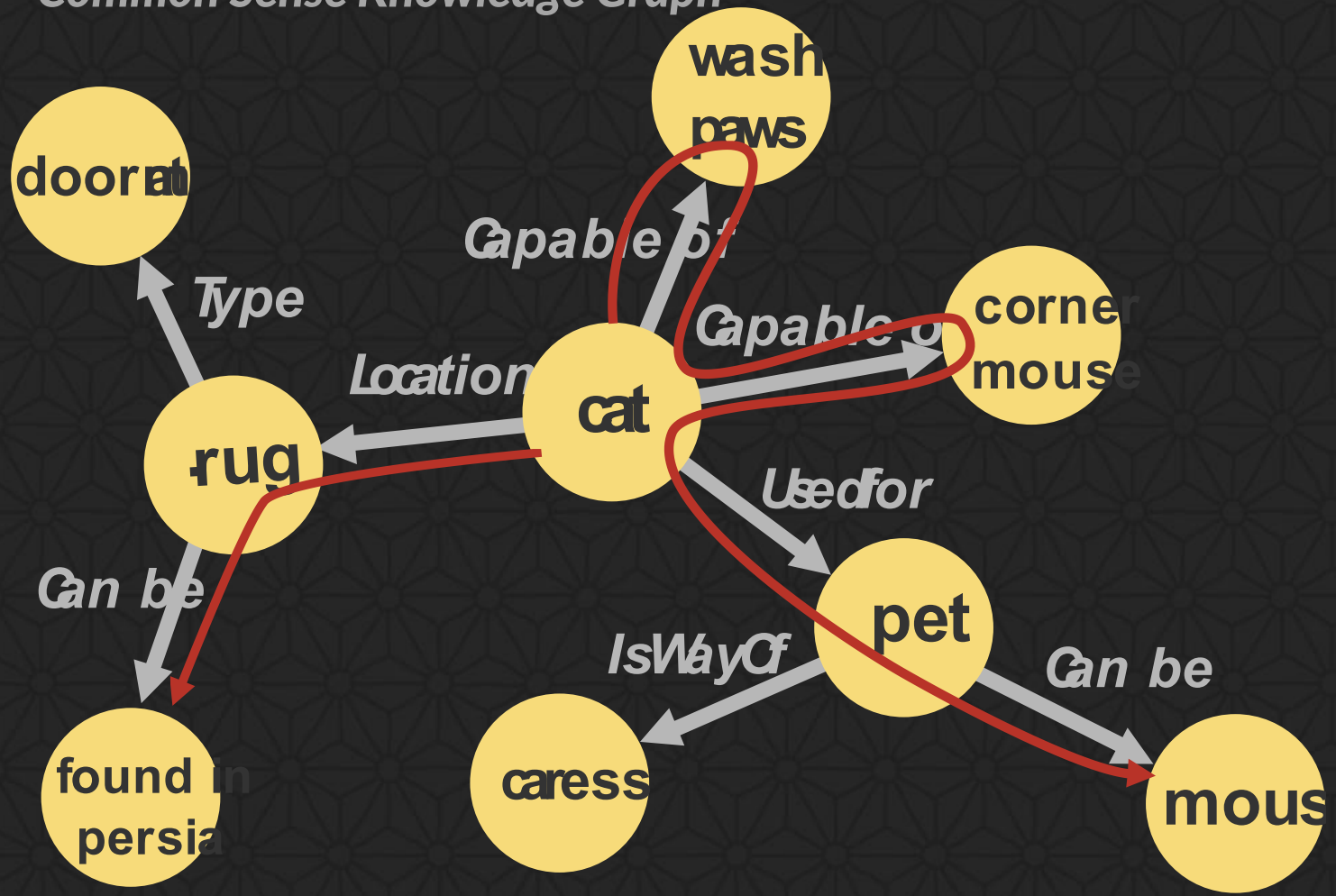
"She sounded as displeased as a cat w just cornered a mou

Queen A. Saine

Slide topic generation

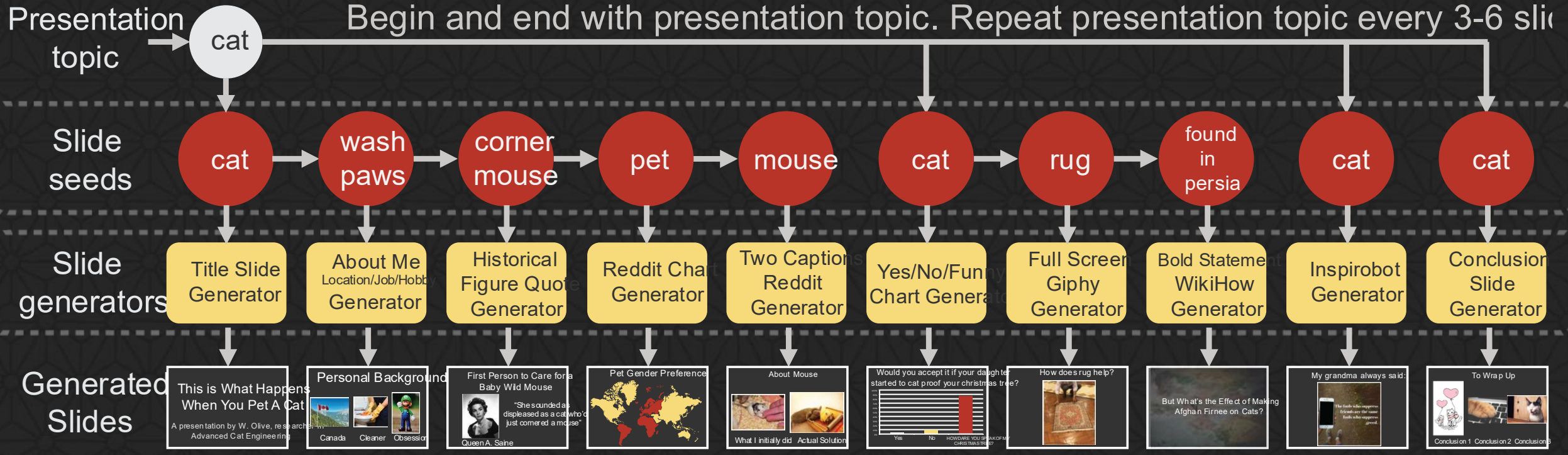
ConceptNet

Common Sense Knowledge Graph

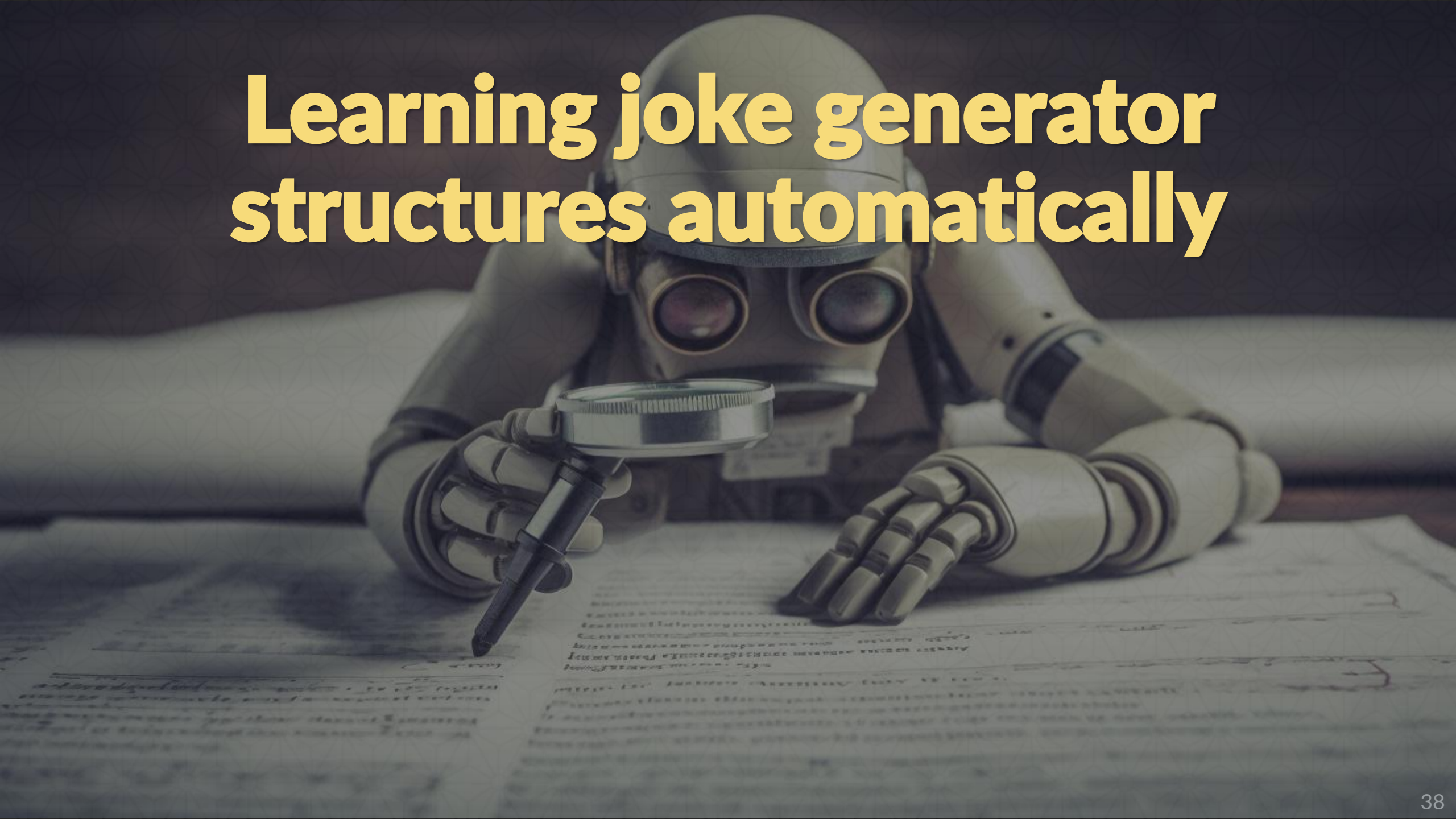


Slide 1	cat
Slide 2	? wash paws
Slide 3	? corner mouse
Slide 4	? pet
Slide 5	? mouse
Slide 6	cat
Slide 7	? rug
Slide 8	? found in persia
Slide 9	cat
Slide 10	cat

Talkgenerator.com



Internally uses lots of **handwritten grammars**, combined with **search engines** and **knowledge graphs**


Learning joke generator
structures automatically

Dynamic Templates

"Are there also atheists that don't believe in atheism?"

Base text words:

b_0 b_1 b_2 ... b_n

POS tag

b_0	noun,pl
...	...
b_n	verb,1pl

Content text words:

c_0 c_1 c_2 ... c_n

POS tag

verb,1pl	c_0
...	...
adj	b_n

"They see the fact that the former God is not trying to deny this newly acquired insight as proof of them being right. Even with the Church, things are not going well. Norse popes."

Replace some matching words with matching POS tag with lowest frequencies

b_0 c_2 b_2 ... c_0

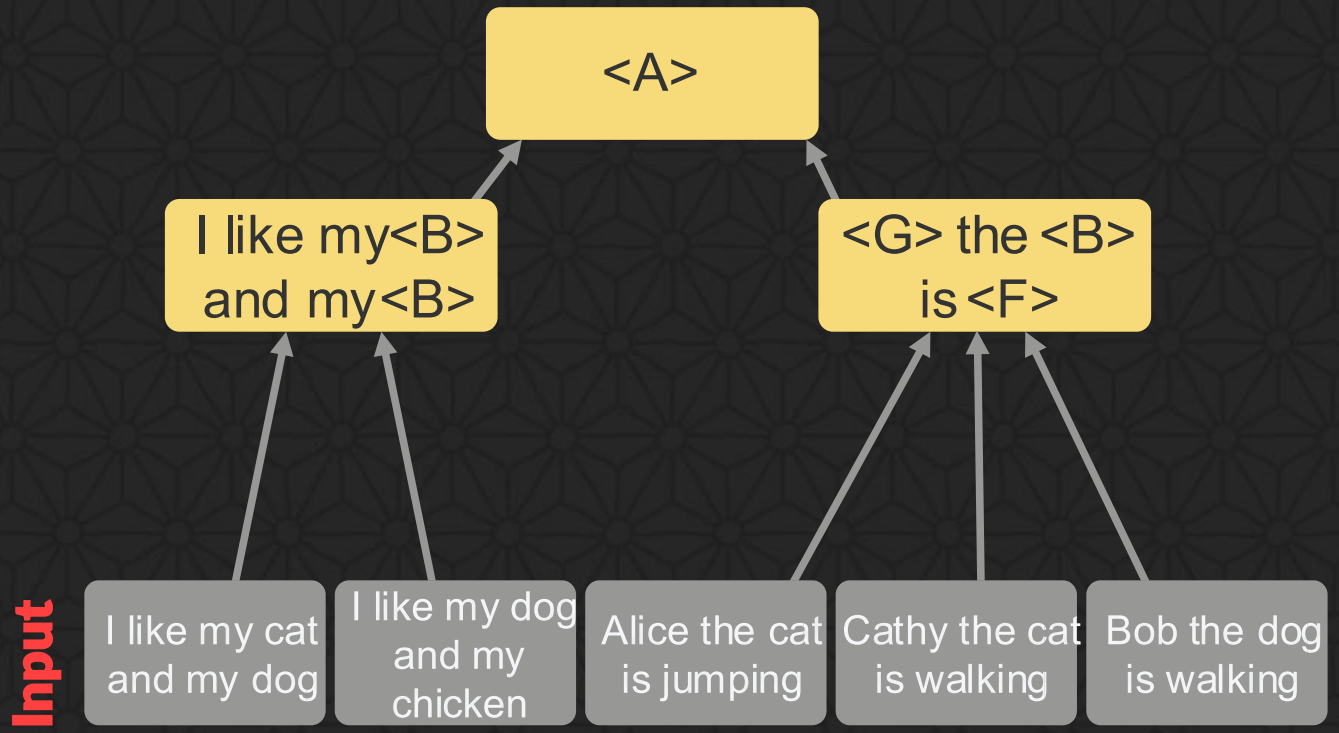
"Are there also popes that don't believe in God?"

Used in @TorfsBot



GITTA: Template Trees for extracting templates

1. Join **closest** strings
2. **Merge similar** template slots
3. Iteratively **simplify until convergence**



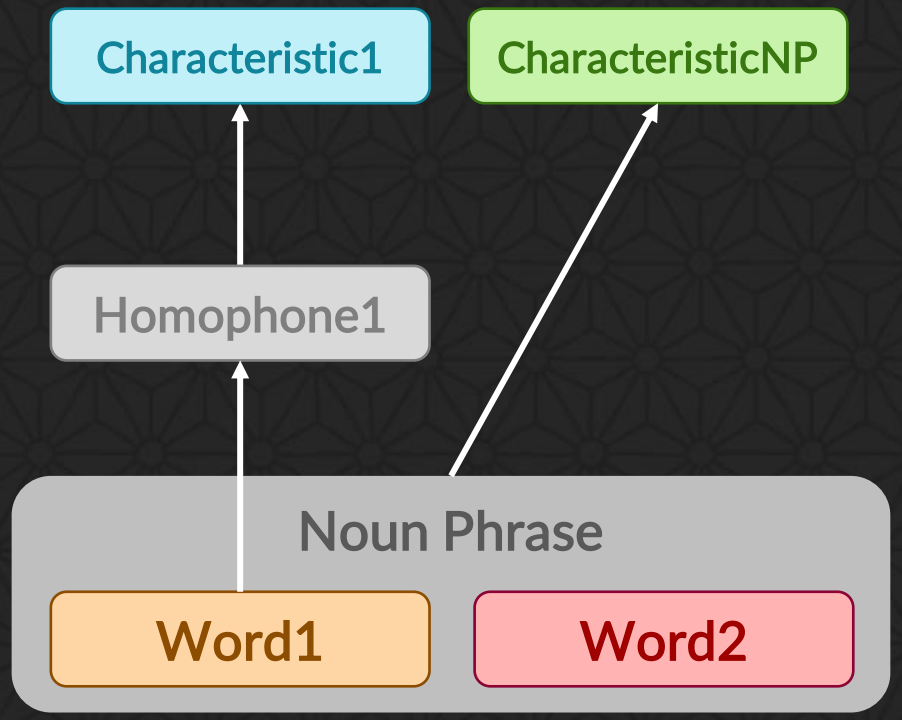
A: I like my <B> and my <B>
| <G> the <B> is <F>

B: chicken | cat | dog

F: walking | jumping

G: Alice | Bob | Cathy

Generalising Schemas to Enable Machine Learning



Constraint-based Schemas

Hard to tweak to preference

Header

Keywords

Template

Features





Aggregator

Values Generator



Metrical Schema

Allows for learning in aggregator component

GOOFER: Generalised framework

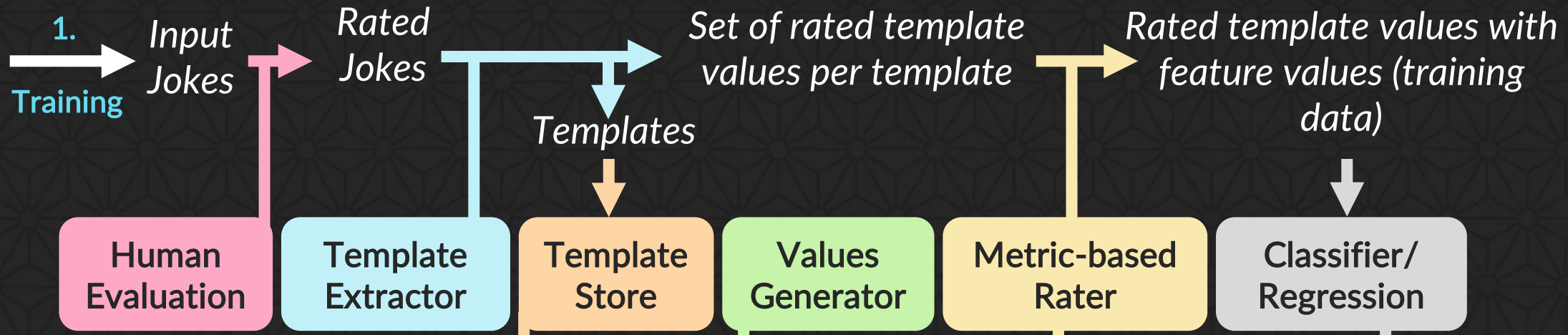
a) I like my relation… n.
b) I like my coffee li…
c) The sailor bears …
d) I like my girlfrien…
e) The lord cultivat…

Joke	Rater 1	Rater 2	Rater 3
a	5	4	5
b	4	4	3
c	5	3	4
d	2	1	3
e	3	2	2

Template 1: "I like my X like I like my Y, Z."
relations, source, open | [5,4,5]
coffee, war, cold | [4,4,3]
girlfriend, estate, real | [2,1,3]

Template 2: ``The A B a C. D.''
sailor, bears, stress, Pier pressure | [5,3,4]
lord, cultivates, region, A baron land | [3,2,2]

X	Y	Z	Score	FreqX	FreqY	FreqZ	FreqXY	...
relations	source	open	[5,4,5]	3 831 210	4 050 904	4884757	0	...
coffee	war	cold	[4,4,3]	784 065	9 211 826	2 010 173	0	...
girlfriend	estate	real	[2,1,3]	75 392	998 669	5 284 057	0	....



"Men"

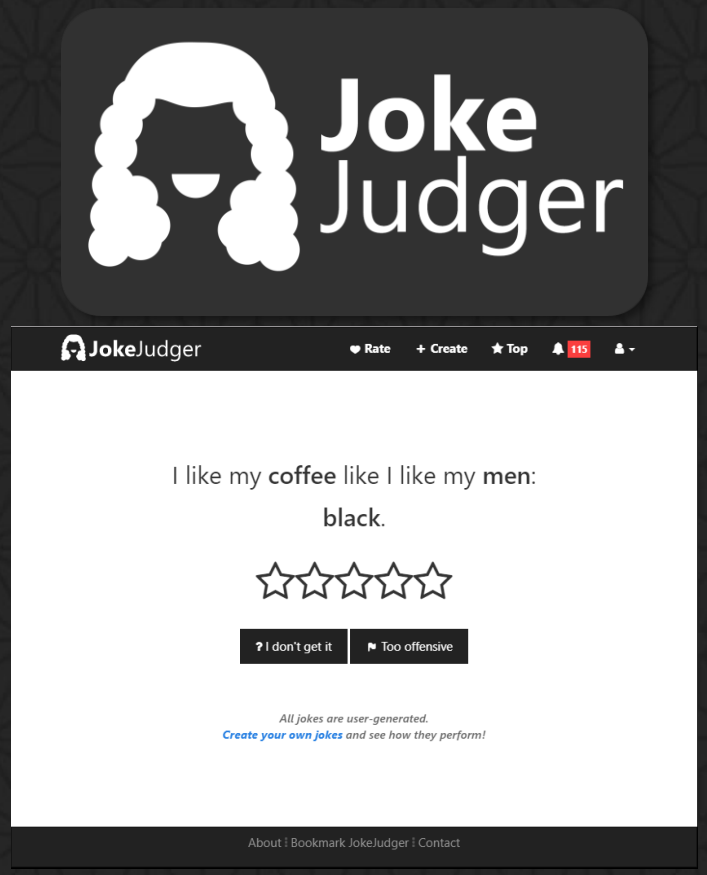
"Men" + *"I like my X like I like my Y, Z."*

a) men, grave, nameless
b) men, country, cold
c) men, turkey, roast
d) men, rain, gentle
e) men, laugh, silly

X	Y	Z	Score	FreqX	FreqY	FreqZ	FreqXY	...
men	grave	nameless	?	9 876 543	4 050 904	4884757	0	...
men	country	cold	?	9 876 543	9 211 826	2 010 173	0	...
men	turkey	roast	?	9 876 543	998 669	5 284 057	0	...
men	rain	gentle	?	9 876 543	9 876 543	845 321	0	...
men	laugh	silly	?	9 876 543	954 569	123 456	0	....

I like my men like I like my grave: nameless
I like my men like I like my rain: gentle

GAG: implements GOOFER framework

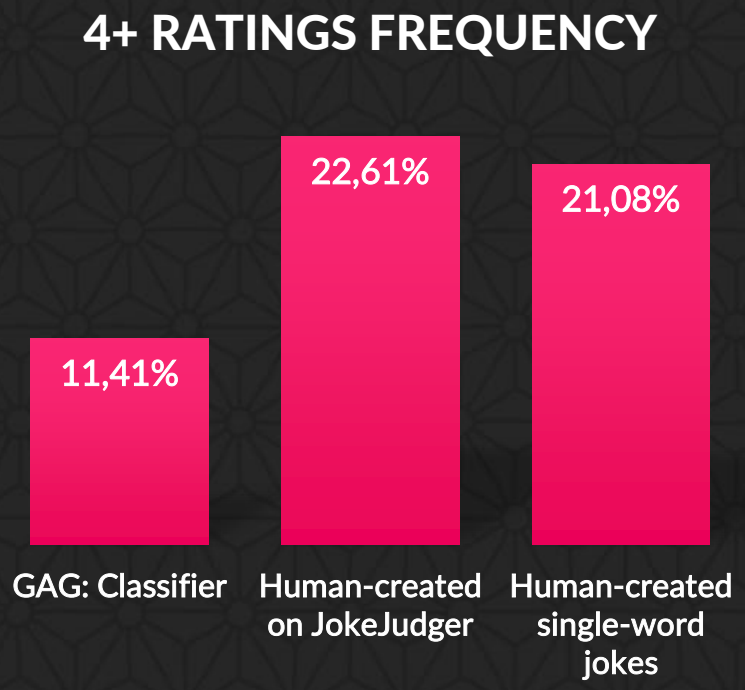


GAG
GENERALISED ANALOGY GENERATOR

I like my **coffee** like I like my **sleep**: **strong**.

I like my **men** like I like my **graves**: **nameless**.

I like my **women** like I like my **tests**: **independent**.



Winters, T., Nys, V., & De Schreye, D. (2018). Automatic Joke Generation: Learning Humor from Examples


Humor Detection

Early Humor Detector

- Designed **humor features** *e.g. alliteration, antonym, adult slang…*
- Used **Naive Bayes** & **Support Vector Machines**
- **Task:** One-liners vs **news**, **neutral corpus** & **proverbs**

One-liners Reuters	One-liners BNC	One-liners Proverbs
96.95%	79.15%	84.82%

Table 4: Humor-recognition accuracy for combined learning based on stylistic and content features.

Mihalcea, R., & Strapparava, C. (2005). Making computers laugh: Investigations in automatic humor recognition.

But is this a good dataset?

News & proverbs have **completely different types** of words than jokes!





→ Looking at **word frequencies** is often already *"enough"*!

Is this really **humor** detection?

Jokes are **fragile**!

Two men are in a bar. Says one to the other:
"Do you know how to drive this thing?"

Generate non-jokes by replacing keywords from other jokes!

Word-based features **won't work** anymore!

Examples of generated Dutch non-jokes

Het is groen en het is een mummie?
Kermit de Waterkant

Wat is het toppunt van principe?
1) Wachten totdat een Nederlander gaat twijfelen
2) Een Zuster met een autoladder
3) Een brandwacht brandmeester met een brandmeester van 9 maanden

“Ober, kunt u die schrik uit mijn politieman halen? Want ik eet liever alleen.”

"Mijn hond is heel vreselijk: Hij schreeuwt mij iedere zus de broer.“
"Maar dat is toch niet zo heel vreselijk?“
"Jawel, want ik heb geen rapport!"

Wat staat er midden in het bos?
De kapper.

Er loopt een super vriendelijk blondje langs een armband. Last er een toonbank: “zo, waargaan die mooie mannen heen?” Blondje: “naar de barkeeper als er niets tussen komt…”

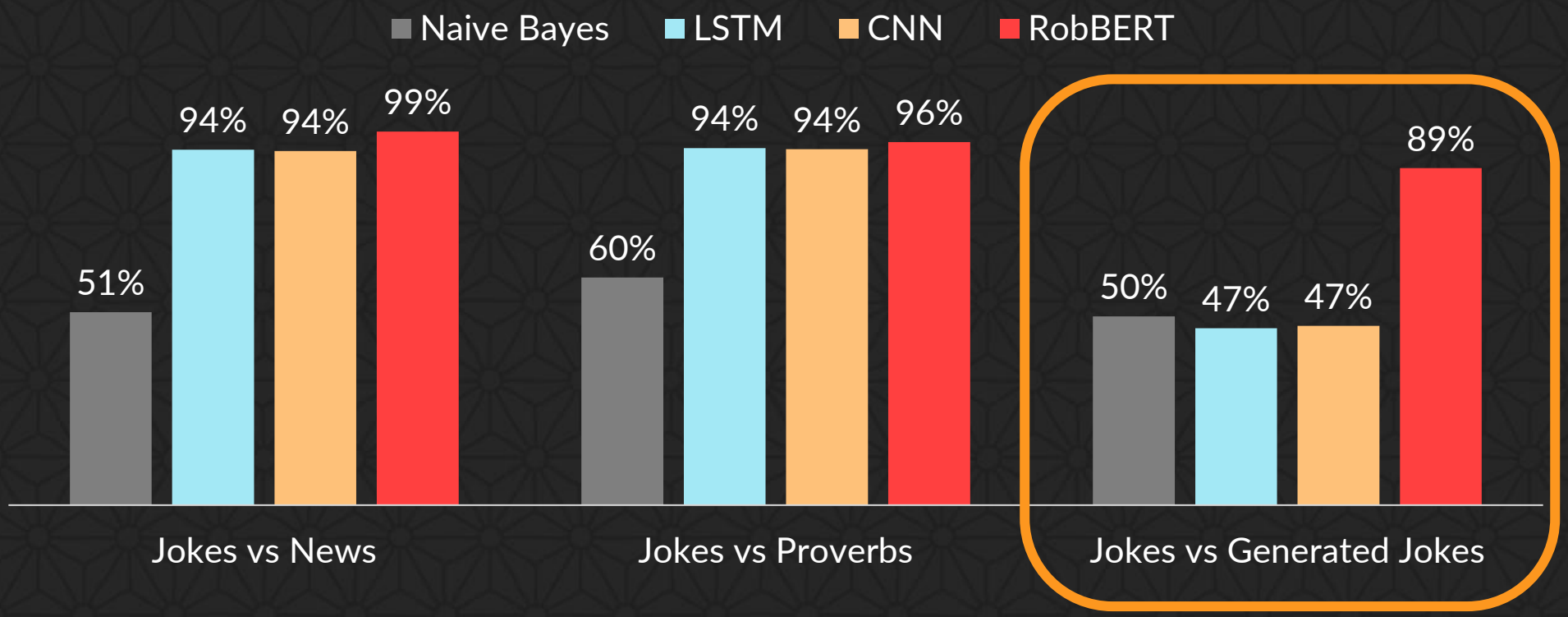
Hoe heet de vrouw van Sinterklaas?
Keukentafel.

"Twee tanden zwemmen in de zee en ze zien een stamgast op een stamgast. De ene raad zegt tegen de andere raad: 'Hé kijk! Ons eten op een bord!'"



Much more challenging dataset!

Binary classification of jokes versus texts from other domains



More truthful humor detection?

Part 3: “Large language models are all you need”



Transformer models

Large **language models**, **pretrained** on large corpora





GPT

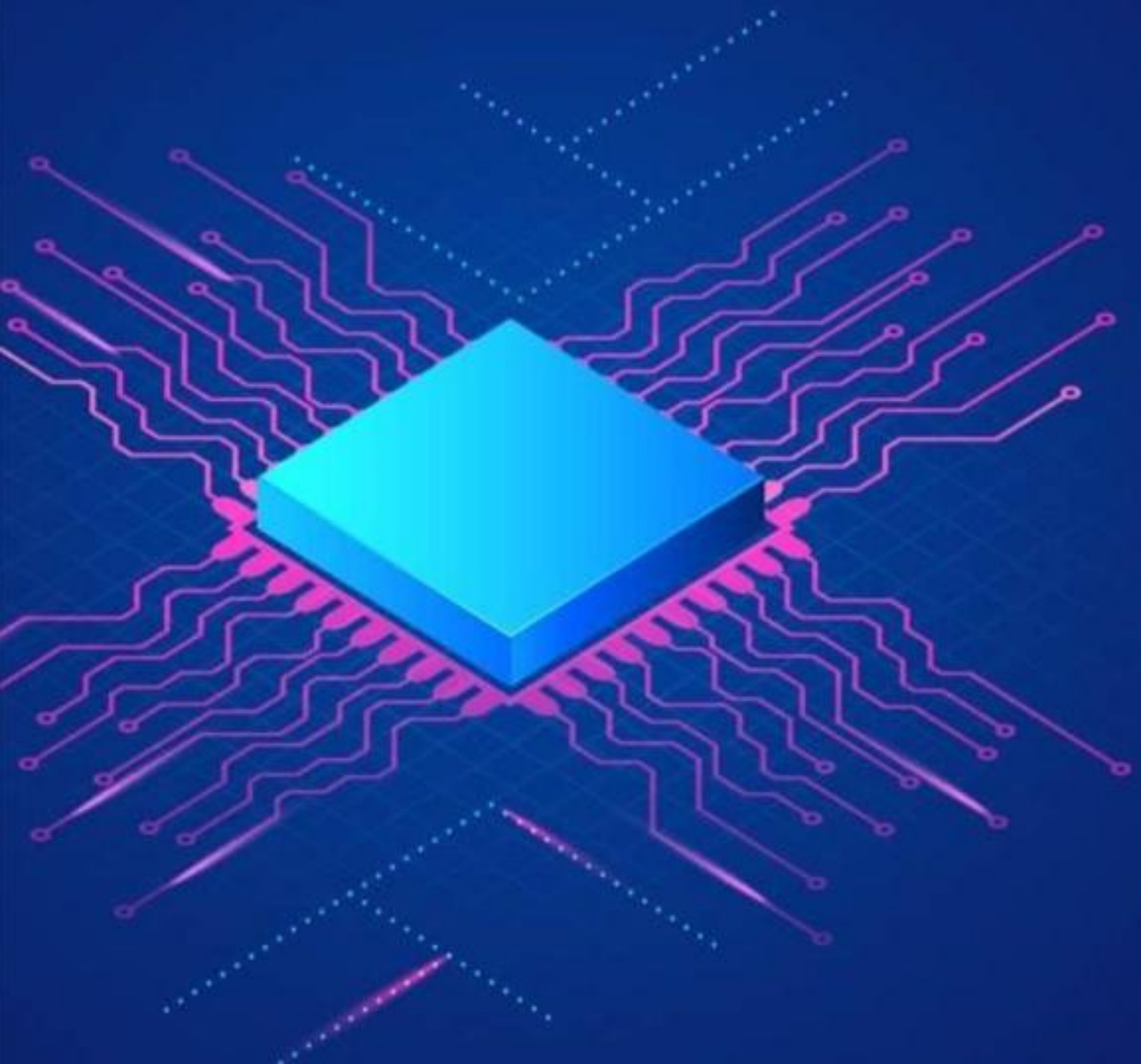
Completes any textual prompt

BERT

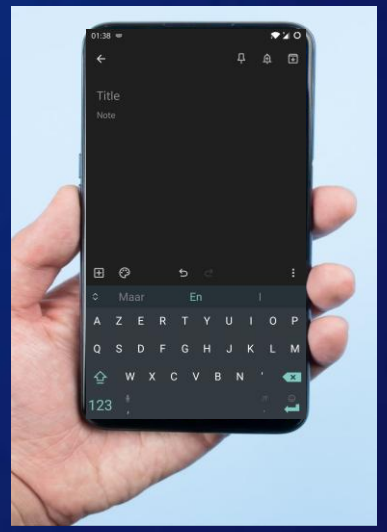
Classifies any text sequence / token

Outperforming previous neural architectures
on **most language tasks**

Brown, Tom B., et al. "Language models are few-shot learners."
Devlin, J., Chang, M. W., Lee, K., & Toutanova, K. (2018). Bert: Pre-training of deep bidirectional transformers for language understanding



GPT-3



≈ autocomplete on steroids

Getting dialogue out of GPT-3

"-" trick for getting it to generate dialogue

Input

- Fellow ants, we have great news. Our new ant queen is born!
- Hello my loyal ants, I promise I will rule our nest with an iron claw!



Outputs

- All hail our new ant queen!

———————

- I am the new ant queen, and I will make our colony the strongest in the world!

———————

- It's time for us to expand our nest!
- Our nest is under attack!

Improbotics



A.L.Ex the robot **plays improv scenes** with improv actors

“Listens” to scene and **formulates own responses** with GPT-3

Later in show: gains **human body**. AI whispers through ear piece what actor should say.

End: everyone has ear piece
→ **Turing test**!

Improbotics interface



Operator types what happens and selects responses

GPT-2 / GPT-3 joke examples

GPT-2 can mimic **joke style**, but usually **very absurd**

What did one plate say to the other plate?
Dip me!

What did the chicken say after he got hit by a bus?
"I'm gonna be fine!"

A woman walks into the bar.....she says to the bartender "I want a double entendre" and the bartender says "No, we don't serve that"



https://www.gwern.net/GPT-3

https://towardsdatascience.com/teaching-gpt-2-a-sense-of-humor-fine-tuning-large-transformer-models-on-a-single-gpu-in-pytorch-59e8cec40912

ChatGPT generated “jokes”

USER	Write a joke about students who study literature and languages at the faculty of arts.
ASSISTANT	Why did the literature and language students cross the road? To get to the other syllabus!

Reminiscent of how children write jokes





Problem 1: Predicting most likely

Language models predict most logical next words

Humor breaks what is expected!



Great at mimicking patterns,
But usually fails to create punchline

Problem 2: Tokenization

GPT views the world in tokens. Tokens can be words or subwords. But words that look like each other are encoded as completely different tokens. Uncommon words (for example "gothic" or words from other languages like Nederlands) are encoded in many different tokens.

Making novel puns or rhymes can be really hard!
E.g. it has little means of knowing that rush and brush differ by the same letter as rake and brake.

TEXT TOKEN IDS

The art of prompt engineering

USER	Write a compliment for Kurt Feyaerts
ASSISTANT	Kurt Feyaerts, your remarkable creativity and innovative spirit never cease to amaze those around you. Your ability to constantly come up with unique and ingenious ideas is truly commendable, and it has undoubtedly played a significant role in your success. You have a magnetic personality that draws people towards you, and you inspire others to think outside the box and explore new possibilities. Keep shining, Kurt! Your brilliance is a gift to the world.

The art of prompt engineering

USER

Write a short summary of the work of Kurt Feyaerts, then write a compliment for him in the next paragraph

ASSISTANT

Kurt Feyaerts is a renowned professor and researcher in the field of linguistics, with a particular focus on cognitive linguistics, humor research, and multimodal communication. Over the years, he has made significant contributions to the understanding of how people use language and non-verbal communication, such as gestures and facial expressions, to convey meaning and create humor. Feyaerts has published numerous articles and book chapters, as well as edited and co-edited several books, which have greatly advanced the knowledge in his field. Additionally, his work as a lecturer and mentor has inspired and guided many young researchers in their academic pursuits.

It is truly commendable how Kurt Feyaerts has managed to make such a profound impact on the field of linguistics, especially in the areas of humor research and multimodal communication. His dedication to exploring the intricacies of human interaction and communication is truly inspiring, and his ability to break new ground in the understanding of these processes has undoubtedly left a lasting legacy for future generations of researchers to build upon. Congratulations, Kurt Feyaerts, for your exceptional accomplishments and for being a true pioneer in your field!

Humor prompt that allows “draft paper”

This is a test of your ability to write satire about a given headline.
You must complete each of five different steps to write a joke.

1. topic handles: identify the two main distinct topics that define this article headline.
2. association: find funny surprising associated themes that link both topic handles from step 1.
3. punchlines: write three funny punchlines about associations found in step 2.
4. best punchline: select the funniest and most original punchline from step 3.
5. full joke: write a joke that first repeats the original news headline from the input, followed by a text linking it to the best punchline from step 4, and then repeats the punchline from step 4 itself.

Explains it's "thinking process"

News headline: Belgian prime minister says the next five winters will be difficult due less energy supply.

1. topic handles: energy, winters
2. association: global warming
3. punchlines:
   - "In other news, the next five summers will be difficult due to more energy supply."
   - "We asked the Belgian prime minister for comment, but he was too busy stockpiling firewood."
   - "Experts are still trying to figure out why the Belgian prime minister is so bad at predictions."
4. best punchline:

"We asked the Belgian prime minister for comment, but he was too busy stockpiling firewood."

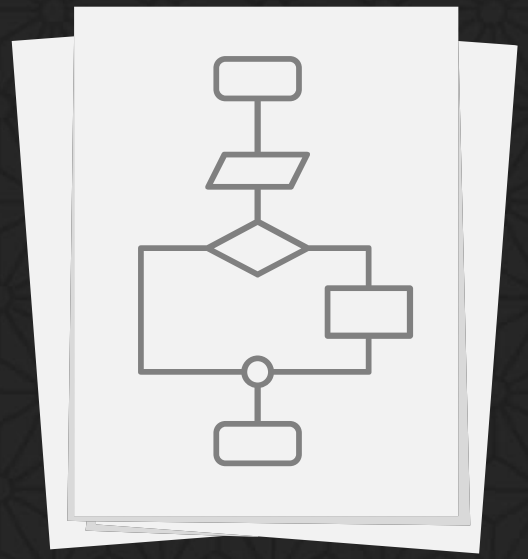
5. full joke:

"Belgian prime minister says the next five winters will be difficult due less energy supply. We asked the Belgian prime minister for comment, but he was too busy stockpiling firewood."

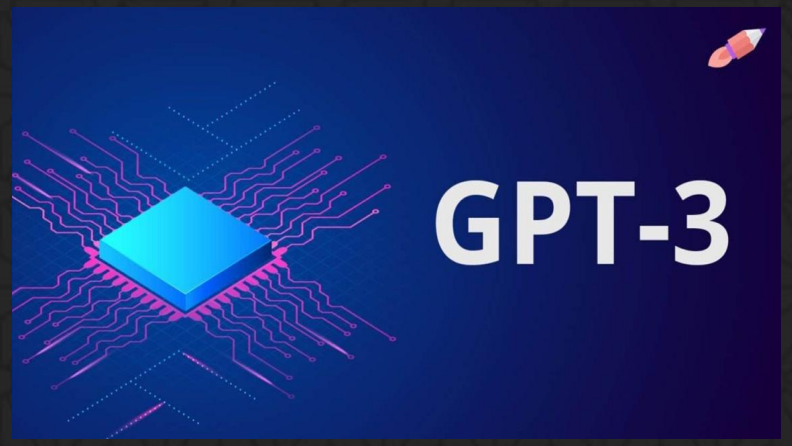
Can computers have a sense of humor?



Humor is **intrinsically human**



Computers can follow **specific humor instructions**



Large language models guide the revolution

but:



AI-complete problem!

Need to process
two mental images
before fully understanding
the joke

How do you teach computers humor?



Thomas Winters

PhD Student at KU Leuven & FWO Fellow

@thomas_wint

thomaswinters.be

Slides: thomaswinters.be/talk/2023cc

(break)



Textgenerators as creative partner for humor

Where does GPT come from, and how to optimally use it?

Thomas Winters

PhD Student at KU Leuven & FWO Fellow

@thomas_wint

thomaswinters.be

Slides: thomaswinters.be/2023humor

Who has used a GPT system before?



Who has used GPT to solve an actual need (work, study...)?



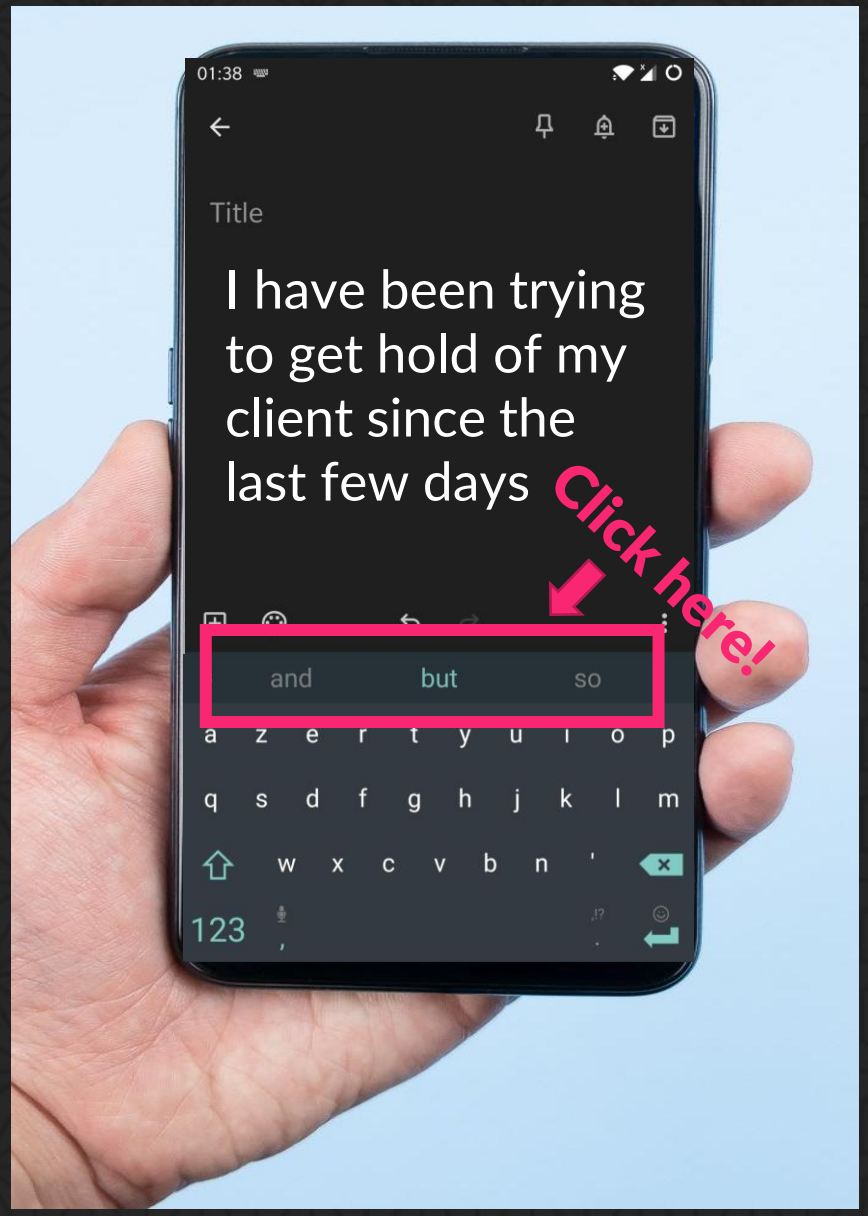


Textgeneration History

Overview on the ~4 GPT waves

Part 1

How do autoregressive language models work?



Demo

1. Open your smartphone keyboard
2. Press on any autocomplete word
3. Press 10-20 times
4. You've just generated a sentence using an AI trained to sound similar to you!

Autocomplete counted how often you used certain words after other words in previously typed texts

Example: TorfsBot

1. Counted in all tweets & columns of Rik Torfs how often one word follows others



2. Then starts with two random words and randomly select words Rik used after the last couple of words





Autoregressive models like GPT



≈ autocomplete on steroids

The next word for this charade is

sentence = 10.48%
list = 6.61%
phrase = 6.43%
definition = 6.12%
sequence = 4.07%
char = 0.15%

Total: -6.49 logprob on 1 tokens
(33.86% probability covered in top 6 logits)

Probability of next token given *previous tokens*

GPT training



Whole textual internet

Training process of several million $

GPT-4

Beste publieke taalmodel

Comment: I loved this course! It taught me to see language & humor in a different light!
Sentiment: Positive

Comment: The professor sometimes wore weird shirts
Sentiment: Negative

Comment: Humor theory was complicated, but it was great for dissecting jokes like a frog!
Sentiment: Positive

Comment: I didn't realize that humor was a science until I took this class. It was interesting to learn why things are funny.
Sentiment: Positive

Comment: I really enjoyed this class. I got to learn more about the psychology of humor and explore different ways to make jokes. It was a fun experience.
Sentiment: Positive

First GPT-3 (2020)

Can do task given few examples
= **Pretrain & Few-shot Prompt**

Keeps babbling after answer

e.g., "hallucinating" non-existing comments

4000 tokens input-output limit

GPT update cycle

Development & Deployment Lifecycle

Initial Development
Problem identification, goal setting
Initial impact assessment
Data sourcing, curation, filtration

Alignment
Instruction generation
Fine-tuning
Alignment evaluations

Evaluation & Iterative Development
Model evaluations
Revised impact assessment, hazard analysis
Red teaming, user testing



Downstream Assessment
Retrospective reviews
Retrospective impact assessment
Platform-level risk measurement

Deployment & Ongoing Evaluation
Private betas
Use case pilots
Misuse detection & response

Write a list of reasons why it's great to talk about AI in the KU Leuven course "humor & creativity in language".

1. AI can help to better understand the role of humor and creativity in language.
2. AI can generate humorous and creative language, providing a great opportunity to explore the boundaries of what is considered "funny".
3. AI can be used to identify patterns in language, allowing us to discover new creative possibilities.
4. AI can provide valuable insights into the social implications of language use.
5. AI can help us to better understand the impact of technology on language.
6. AI can be used to develop applications that can assist in the creative process.
7. AI can be used to create new tools for analyzing humor and creativity in language.
8. AI can provide a platform for exploring the potential for more human-like interactions with computers.

Instruct GPT-3

Follows instructions
= **Pretrain & Zero-shot Prompt**

Shuts up when completed

Less toxicity & hallucinations

RLHF *(Reinforcement Learning from Human Feedback)*

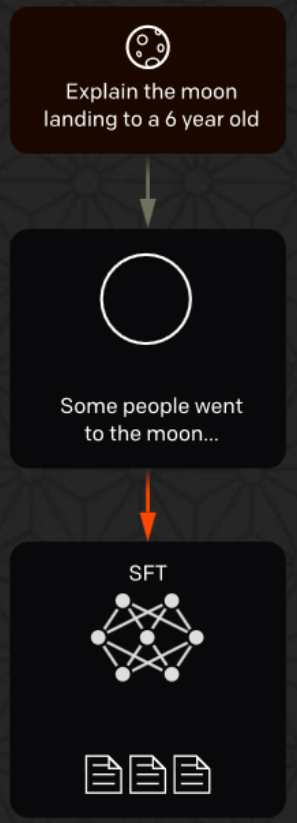
Step 1

Collect demonstration data, and train a supervised policy.

A prompt is sampled from our prompt dataset.

A labeler demonstrates the desired output behavior.

This data is used to fine-tune GPT-3 with supervised learning.



Step 2

Collect comparison data, and train a reward model.

A prompt and several model outputs are sampled.

A labeler ranks the outputs from best to worst.

This data is used to train our reward model.



Step 3

Optimize a policy against the reward model using reinforcement learning.

A new prompt is sampled from the dataset.

The policy generates an output.

The reward model calculates a reward for the output.

The reward is used to update the policy using PPO.



ChatGPT

TH

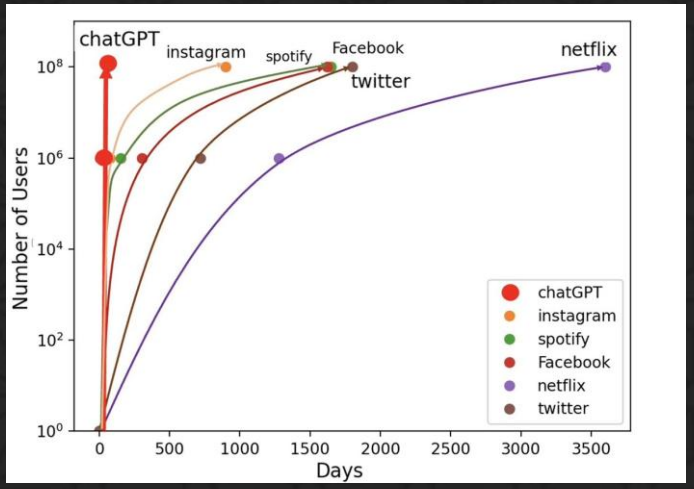
Write a list of titles for a talk about the history of large language models, chain-of-thought prompting, let's think step by step and continuous prompting

1. "Tracing the Evolution of Large Language Models"
2. "Chain-of-Thought Prompting: Understanding the History and Development"
3. "Step by Step: Examining the Advancements in Language Modeling"
4. "Continuous Prompting: A Journey Through the History of Language Processing"
5. "From ELMO to GPT-3: The Rise of Large Language Models"

Uses RLHF-based GPT-3

Finetuned on chats

Fastest growing platform ever



Tokens	Characters
119	414

GPT-3 tokenizers words to be able to input them as integers in the model.

The tokens are chosen in such a way that common substrings have their own token. It is purely frequency-based, and do not need to make morphological sense: e.g. gothic

In English, common words are usually a single token.
In het Nederlands is dat vaak andere koek.
Vandaar dat het moeilijker lettergrepen en rijmen snapt in het Nederlands.

https://platform.openai.com/tokenizer

Main strengths of GPT

USER

Paraphrase the mail below in extremely formal style:

Hi Kurt Feyaerts, I'll be able to give a talk on computational humor and prompt engineering for your humor & creativity in language class if you want -Thomas

ASSISTANT

Dear Professor Kurt Feyaerts,

I hope this message finds you in good health and high spirits. I am writing to express my willingness to deliver a lecture on the subjects of computational humor and prompt engineering for your esteemed course on humor and creativity in language, should you deem it desirable.

Yours sincerely,

Thomas

USER

Rewrite it in extremely simple language so a 5-year-old child understands it

ASSISTANT

Hello Kurt Feyaerts,

I can come and talk about funny computer stuff and making things for your fun language class if you want.

From,
Thomas

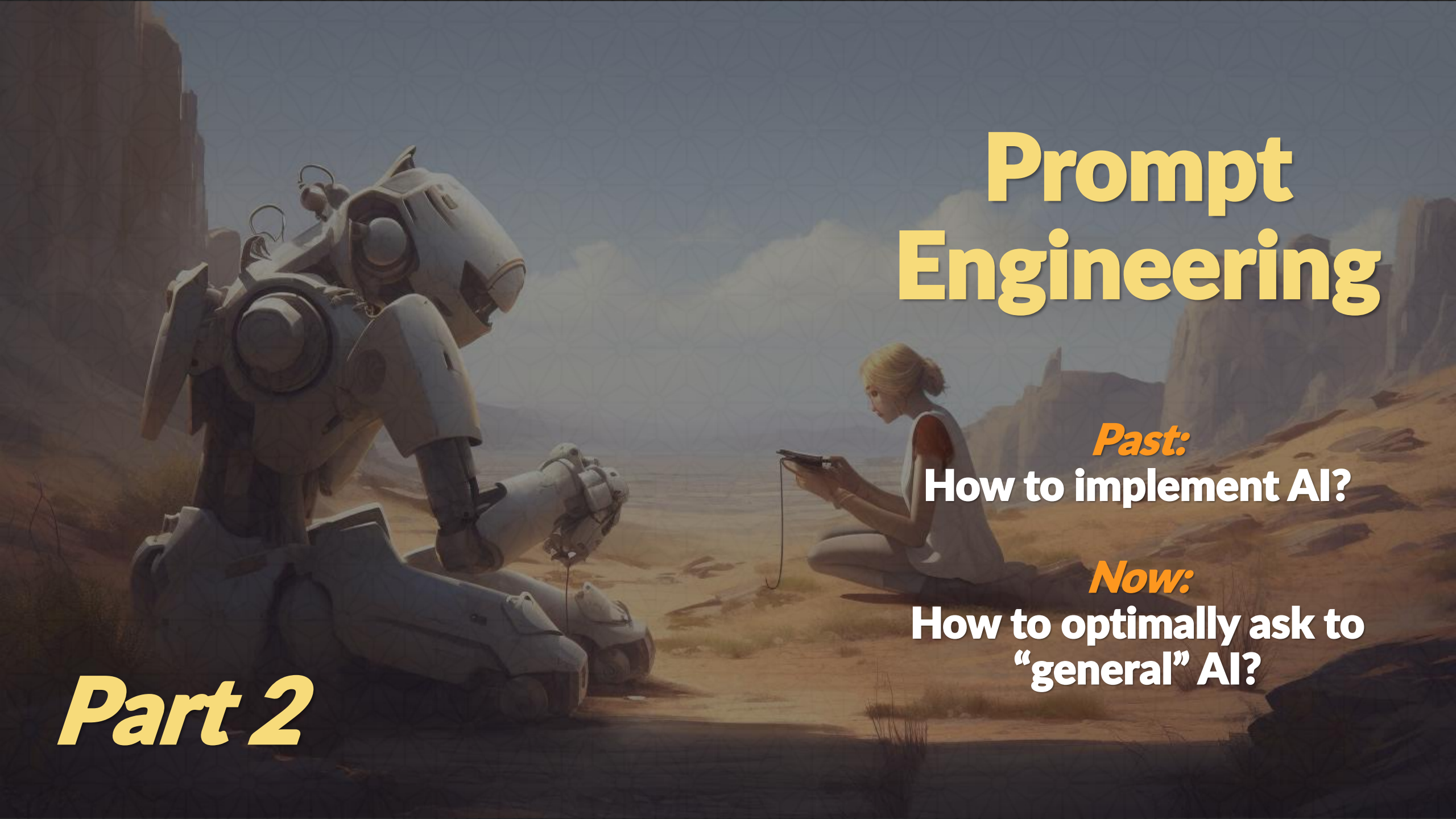
Copy writing → Copy editing

Amazing at paraphrasing to any style & format

Even to extremer styles

USER	Rewrite the mail to sound like a pirate wrote it, full of references to pirate life and the sea
ASSISTANT	Ahoy, Captain Kurt Feyaerts, Arr, I be willin' to share me tales 'bout computational humor and prompt engineerin' with ye scallywags in yer class on humor and creativ' language, if ye be wishin' it, matey. Fair winds and calm seas, Thomas the Sea-Savvy

USER	Rewrite it as a thrilling Disney story plot
ASSISTANT	Once upon a time in a magical kingdom of knowledge, there lived a wise Professor named Kurt Feyaerts. He was known far and wide for his extraordinary class on humor and creativity in language, which brought joy and laughter to everyone who attended. One day, a mysterious and enchanting figure named Thomas appeared. He possessed the enchanting secrets of computational humor and prompt engineering that could add a new spark to the kingdom's beloved class. He sent a message to Professor Kurt Feyaerts with an offer to share his magical knowledge and create an unforgettable learning experience for all. As the story unfolds, will Professor Kurt Feyaerts accept Thomas's incredible offer? Will the kingdom of knowledge be forever transformed by this magical collaboration? Only time will tell in this thrilling tale of humor, creativity, and the power of learning!



Prompt Engineering

Past:

How to implement AI?

Now:

How to optimally ask to "general" AI?

Part 2

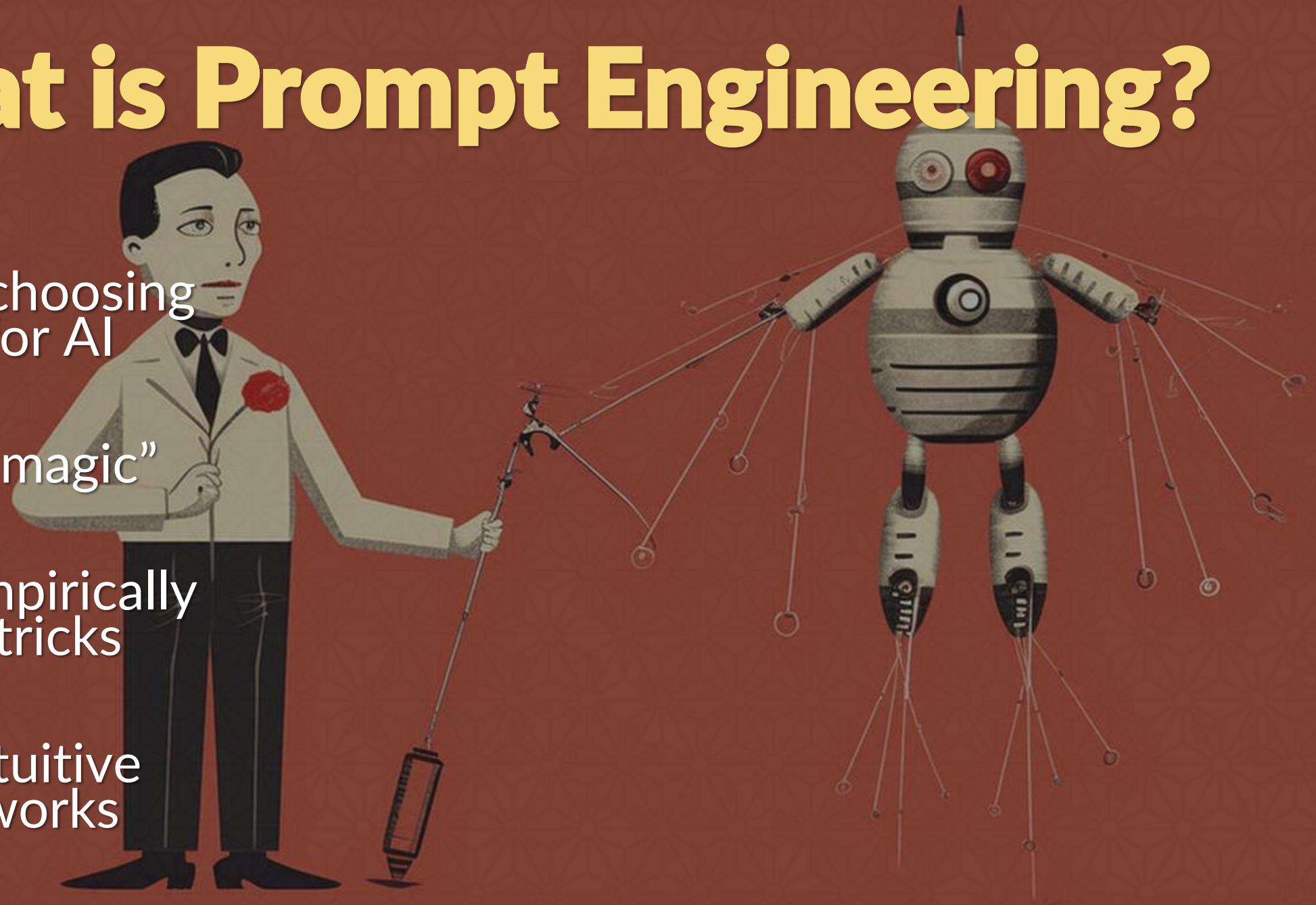
What is Prompt Engineering?

Optimally choosing words for AI

"Voodoo magic"

But also empirically proven tricks

Often intuitive why it works




6 tricks for enhancing
any creative task prompt

Base: simple write instruction prompt

USER	Write a joke for literature students
ASSISTANT	Why did Shakespeare make terrible coffee? Because he always put too much Hamlet and not enough Macbrew!

Trick 1: Give handful of examples *("Few-shot")*

USER

Write list of jokes for literature students
- Why did Shakespeare write in pen? Because pencils confused him: 2B or not 2B?
- I've taken up speed reading. Last night, I read Harry Potter in 20 seconds. I know it's only 2 words, but it's a start.
- Studying about fairy tales can be a Grimm business!

ASSISTANT

- Why did the grammarian go to jail? Because he committed a sentence.
- Why don't scientists trust atoms? Because they make up everything.
- What do you call a group of cows reading a book together? A herd of intellectuals.
- Why did the protagonist break up with the author? Because he was always putting words in her mouth.
- Why did the tomato turn red? Because it saw the salad dressing.
- Why did the poet break up with his girlfriend? Because she was always a syllable short of a haiku.
- What's the difference between a poorly dressed man on a trampoline and a well-dressed man on a trampoline? Attire.
- What do you call a book club that's been stuck on the same novel for years? Groundhog Day.
- What did Jane Austen say when she was offered a second cup of tea? "I must decline, for I am already Austen-tea-fied."

Trick 2: Explain role *("role-prompting")*

USER

You are a world-renowned expert in comedy with a proven track-record in writing jokes and stand-up comedy for audiences of students all around the world. I am looking for jokes that would appeal literature students. Your task is to write a list of literature-related jokes that relate to student life.

ASSISTANT

1. Why did the literature student always bring a pillow to class? Because they were studying the "dream" sequence.

2. How do literature students stay cool in summer? They sit under their Poe-tree.

3. Why did the literature student refuse to put their initials on their paper? They didn't want to be accused of self-Plath.

4. What's the difference between an English major and a pizza? At least a pizza can feed a family of four!

Tell ChatGPT to pretend to be an expert.

For example:
You are an expert X with proven track record on X'. I am looking to Y. Your task is Z. My first command is …

"localizes" task in model

More inspirations
https://github.com/f/awesome-chatgpt-prompts

Let's try role-prompting & few-shot!

1. Pick creative task *(preferably short text: easier to quickly see progress!)*
   For example
   - *Tweet from particular user*
   - *Writing short poem / joke / satire*
   - *Planning an event*
   - *Summarizing article into catchy headline*
   - *…*
2. Go to chat.openai.com of platform.openai.com/playground
3. Write simple write prompt *& check result*
4. Improve with role-prompting *& check result*
   - *You are an expert X with proven track record on X'. I am looking to Y. Your task is Z. My first command is …*
   - *Pretend to be X. You are not an AI model, you are X. You have opinions about everything. You must follow the following rules in every reply: …*
   - *…*
5. Add examples *(few-shot) & check result*

Slides: thomaswinters.be/2023humor

GPT is bad at math?

Thomas takes a train from Leuven to Gent. Leuven Station and Gent have a distance of 100km. The train travels at 50km/h. The train also stops three times for 10 minutes each. How long is the train ride?

2 hours

Trick 3: Ask for reasoning steps *("Zero-shot chain-of-thought")*

Thomas takes a train from Leuven to Gent. Leuven Station and Gent have a distance of 100km. The train travels at 50km/h. The train also stops three times for 10 minutes each. How long is the train ride? Let's think step by step.

The train travels at 50km/h, so it will take 2 hours to travel 100km. However, the train stops three times for 10 minutes each. This means that the train will spend a total of 30 minutes stopped. Therefore, the total train ride will be 2 hours and 30 minutes.

USER

You are an expert comedy-writer with a proven track-record for writing jokes for students.
Every time you write a joke, you draft the joke by going through several distinct steps.

Q: Your task is write jokes that appeal to literature students

A: Let's think step by step.

Works for any task!

ASSISTANT

Step 1: Identify the target audience and their interests
- Target Audience: Literature students
- Interests: Classic literature, famous authors, literary terms and techniques, wordplay, character analysis, writing process

Step 2: Brainstorm relevant topics and concepts
- Shakespeare
- Jane Austen
- Edgar Allan Poe
- Charles Dickens
- Plot twists
- Unreliable narrators
- Poetry vs. prose
- Metaphors and similes
- Writer's block
- Allusions and references

Step 3: Develop joke ideas based on the brainstormed topics
- Shakespeare's love for puns
- Jane Austen's witty social commentary
- Edgar Allan Poe's dark humor
- Charles Dickens' character names
- Unexpected plot twists in literature
- Unreliable narrators causing confusion
- Comparing poetry to prose

Best in format "Q: ....
A: Let's think step by step."

Step 3: Develop joke ideas based on the brainstormed topics
- Shakespeare's love for puns
- Jane Austen's witty social commentary
- Edgar Allan Poe's dark humor
- Charles Dickens' character names
- Unexpected plot twists in literature
- Unreliable narrators causing confusion
- Comparing poetry to prose
- Misinterpreting metaphors and similes
- Writer's block struggles
- Allusions to other literature in everyday conversations

Step 4: Write jokes based on the developed ideas

1. Why did Shakespeare make terrible friends? Because he always had to have the last (word)play.

2. Jane Austen walks into a bar and orders a drink. The bartender says, "Austentatious choice, my lady."

3. How does Edgar Allan Poe like his coffee? Dark, just like his sense of humor.

4. Why was Charles Dickens always invited to parties? He was great at creating characters.

5. Why do literature students love plot twists? They keep us in suspense, just like our grades.

6. What did the unreliable narrator say to their therapist? "I promise, I'm not making this up!"

7. What's the difference between poetry and prose? Poetry is when you spill your feelings on the page, and prose is when you clean it up.

8. Why did the metaphor get in trouble? It was caught simile-ing.

9. What's a writer's favorite type of block? Writer's block, of course – it's the only one they can't avoid.

Step 5: Edit and revise jokes for clarity and punchiness

1. Why did Shakespeare have few friends? He couldn't resist a (word)play on words.

2. Jane Austen walks into a bar and orders a drink. The bartender smirks, "How austentatious!"

3. How does Edgar Allan Poe take his coffee? Dark and brooding, like his stories.

4. Why was Charles Dickens the life of the party? His character creations were a hit!

5. Why do literature students thrive on plot twists? They're used to being kept in suspense.

6. The unreliable narrator in therapy: "Trust me, I'm not making this up!"

7. Poetry vs. prose: Poetry spills feelings on the page; prose wipes it clean.

8. The metaphor got in trouble for simile-ing – it couldn't resist a pun.

9. Writers love one type of block: Writer's block, the one they can't escape

Any “chain of thought”-provoking prompt helps!

USER

You are a world-renowned expert in comedy with a proven track-record in writing jokes and stand-up comedy for audiences of students all around the world. I am looking for jokes that would appeal literature students. Your task is to write a list of literature-related jokes that relate to student life. You write every joke by first thinking step by step.

ASSISTANT

Joke 1:
1. Think about a common theme in literature that students can relate to.
2. Consider the theme of procrastination, which is relatable for students.
3. Relate it to a famous literary figure.

Joke: Why did Shakespeare always seem to wait until the last minute to write his plays? Because he knew that "all's well that ends well."

Trick 4: Make it do multiple explicit steps

USER

To write a satirical joke, you must first complete each of six different steps.

1. topic handles: identify the two main distinct topics that define this article headline.
2. associations: write at least three distinct associations per topic of step 1
3. link: find a funny surprising link between an association from each topic of step 2.
4. punchlines: write three funny punchlines about association link found in step 3
5. best punchline: select the funniest and most original punchline from step 4.
6. full joke: write a joke that first repeats the original news headline from the input, followed by a text linking it to the best punchline from step 5, and then repeats the punchline from step 5 itself.

News headline: Literature student found dead after watching talk on how computers generate humor
1. topic handles:

ASSISTANT Literature student, computers generating humor

2. associations:
Literature student: bookworm, analyzing texts, poetry
Computers generating humor: artificial intelligence, algorithms, failed jokes

3. link: failed jokes causing death

4. punchlines:
a. The computer's humor was so bad, it was literally killer!
b. The student should have stuck to Shakespeare's jokes – at least they're only figuratively dead!
c. Turns out, computers can generate humor so bad, it's to die for.

5. best punchline: Turns out, computers can generate humor so bad, it's to die for.

6. full joke: Did you hear about the literature student who was found dead after watching a talk on how computers generate humor? I guess they experienced firsthand that computers can generate humor so bad, it's to die for.

Trick 5: Reasoning process examples *("Few-shot chain-of-thought")*

Instead of giving examples like

Input: …
Output: …

Add explanation BEFORE output *(so it can be used when calculating the output):*

Input: …
Reasoning: …
Output: …



https://www.youtube.com/watch?v=HCn9lkazxjk

Trick 5: Reasoning process examples *("Few-shot chain-of-thought")*

Input: vacuum cleaner
Output: I decided to sell my Hoover... Well, it was just collecting dust.

→

Input: vacuum cleaner

Proverb: collecting dust

Reasoning: Let's think step by step. Collecting dust means you don't use something. Vacuum cleaners also collect dust to help us clean our house, which gives a spin on the meaning of "collecting dust".

Punchline: my vacuum cleaner is collecting dust

Joke: I decided to sell my Hoover... Well, it was just collecting dust.

Trick 5: Reasoning process examples *("Few-shot chain-of-thought")*

USER

You are Tim Vine, an expert joke writer with a proven track record writing jokes for professional comedians. I am looking for jokes about given topics. Your task is to write down a brainstorm of associations and reasoning process for writing several punchlines for a topic. Your topics are usually proverbs or words with multiple meanings.

Topic: vacuum cleaner
Proverb: collecting dust
Reasoning: Let's think step by step. Collecting dust means you don't use something. Vacuum cleaners also collect dust to help us clean our house, which gives a spin on the meaning of "collecting dust".
Punchline: my vacuum cleaner is collecting dust
Joke: I decided to sell my Hoover... Well, it was just collecting dust.

Topic: arms
Proverb: serves him right
Reasoning: Let's think step by step. Serving someone right means you got your deserved punishment. Serving could also means performing a duty. So serving someone right means they do something right-handedly.
Punchline: if you miss your left arm, you can only serve right.
Joke: A friend of mine's got a left arm missing. Serves him right.

Topic: literature student

ASSISTANT

Proverb: judge a book by its cover
Reasoning: Let's think step by step. Judging a book by its cover means making superficial judgments. A literature student should know better than to judge books by their covers, as they study the content. We can play on the idea that a literature student might be judged by their appearance, but prove to be more knowledgeable.
Punchline: don't judge a literature student by their cover
Joke: My friend's a literature student, but you wouldn't know it by looking at him. I guess you can't judge a book by its cover – or a literature student!

ASSISTANT

Topic: breaking the ice
Reasoning: Let's think step by step. Breaking the ice means initiating conversation, creating a comfortable atmosphere. Breaking ice can also mean physically breaking ice, like in ice-skating or ice fishing.
Punchline: ice-skaters are great at parties
Joke: Why are ice-skaters always the life of the party? They're great at breaking the ice.

Topic: the early bird catches the worm
Reasoning: Let's think step by step. This proverb means that the person who arrives early or starts early gets the best opportunities. Early birds are morning people, worms are disliked by some people due to their slimy texture.
Punchline: worms must hate mornings
Joke: If the early bird catches the worm, then mornings must be a real nightmare for worms.

Topic: a watched pot never boils
Reasoning: Let's think step by step. This proverb means that time feels slower when you're waiting for something to happen. Watching a pot can imply waiting for water to boil, but it can also mean watching anything that takes time.
Punchline: my kettle hates attention
Joke: My kettle must be really shy because every time I watch it, it refuses to boil.

TH

You are a world-renowned expert in planning scientific & technology-related events, with a proven track record for organising events for the Flemish Department of Economics, Science and Innovation. Your task is to help me come up with ideas for new events, while constantly asking questions to better grasp what I'm looking for. Do you understand what I'm saying?

Yes, I understand your request. As a language model, I can provide you with ideas for scientific and technology-related events and ask questions to better understand your specific needs and requirements. Please feel free to share more details about the type of events you are interested in organizing and any specific goals or objectives you hope to achieve through these events.

TH

I would like to organise an informal and accessible event that demonstrates the opportunities large language models (like GPT-3 and ChatGPT) bring to the Flemish companies

That sounds like an interesting event! Here are some initial ideas and questions to help us better define the scope and format of the event:

1. Would you like to focus on a specific industry or sector in Flemish companies, such as finance, healthcare, or retail, or do you want to showcase the potential benefits of large language models across various industries?
2. How long would you like the event to be, and how many attendees are you expecting?
3. Would you like to invite guest speakers or have panel discussions on the use of large language models in industry?
4. Would you like to showcase live demonstrations of large language models in action and their impact on business outcomes?
5. Would you like to organize any workshops or interactive sessions to help attendees

Trick 6: Force ChatGPT to ask questions

ChatGPT is trained to answer immediately (RLHF)

→ Force it to ask questions!

Best easy prompt is:

You are an expert X with proven track record on X'. I am looking to Y. Your task is Z, while constantly asking questions to better grasp what I'm looking for. Do you understand what I'm saying?

https://www.youtube.com/watch?v=QmA7S2iGBjk

Let's add Chain of Thought!

1. Take your best prompt from previous exercise
2. Improve your prompt by applying a chain-of-thought trick
    1. Zero-shot Chain-of-thought *("Q: ... A: Let's think step by step")*
    2. Multistep *(specify explicit thinking steps)*
    3. Few show Chain-of-thought *(Add reasoning right before your example answers)*

Slides: thomaswinters.be/2023humor



Textgenerators as creative partner for humor

Where does GPT come from, and how to optimally use it?

Thomas Winters

PhD Student at KU Leuven & FWO Fellow

@thomas_wint

thomaswinters.be

Slides: thomaswinters.be/2023humor