

Punalogic: a pun analogy generator

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Project, 3rd Presentation

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Outline

Meme generation

Meme creation

Image generation current issues

Puns Generation

Word Composition

Current amelioration

Future integration

"Momer"

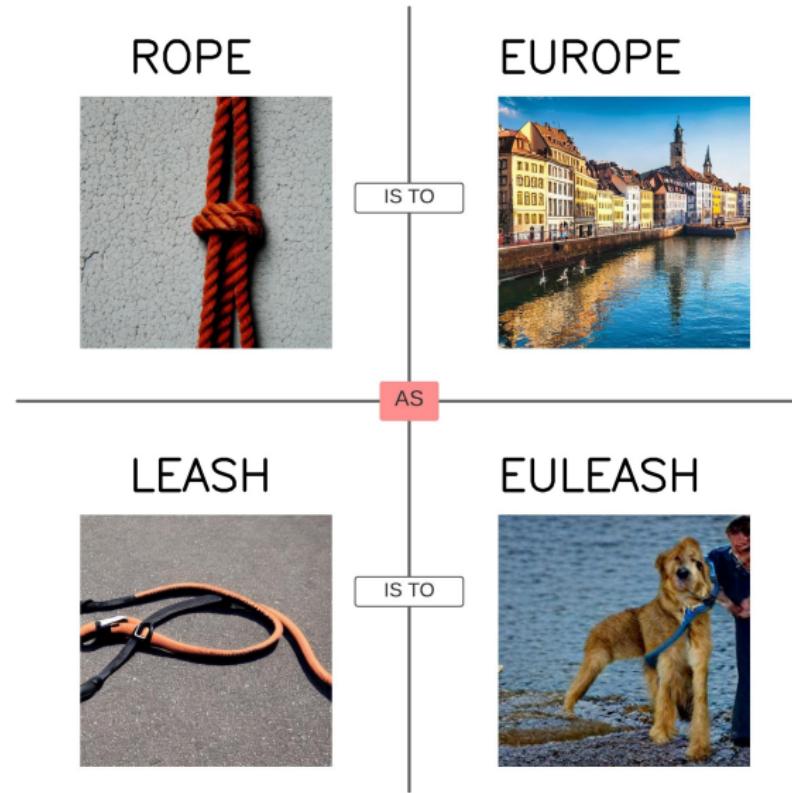
Evaluation

Human evaluation

Morphology metric

Next steps

Meme generated



Meme creation

Word : *europe*

Punology generated : *rope is to europe as leash is to euleash*

1. Use of Stable diffusion[1] for images a, b and c :

- ▶ Easy way to generate photo-like pictures
- ▶ via HuggingFace

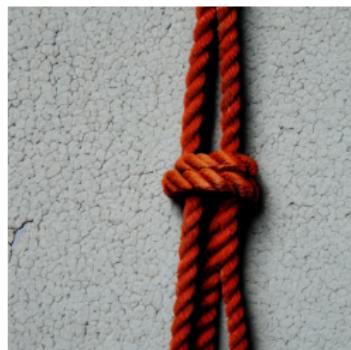


Figure – Images generated by stable diffusion

Meme creation

2. Use of Dall-e mini [2] for images d :

- ▶ "Funnier" picture,
- ▶ via HuggingFace



Figure – Image *euleash* generated by Dall-e mini

Meme creation

3. Use of a template [3]

4. Add of images generated and text on template with PIL library[4]

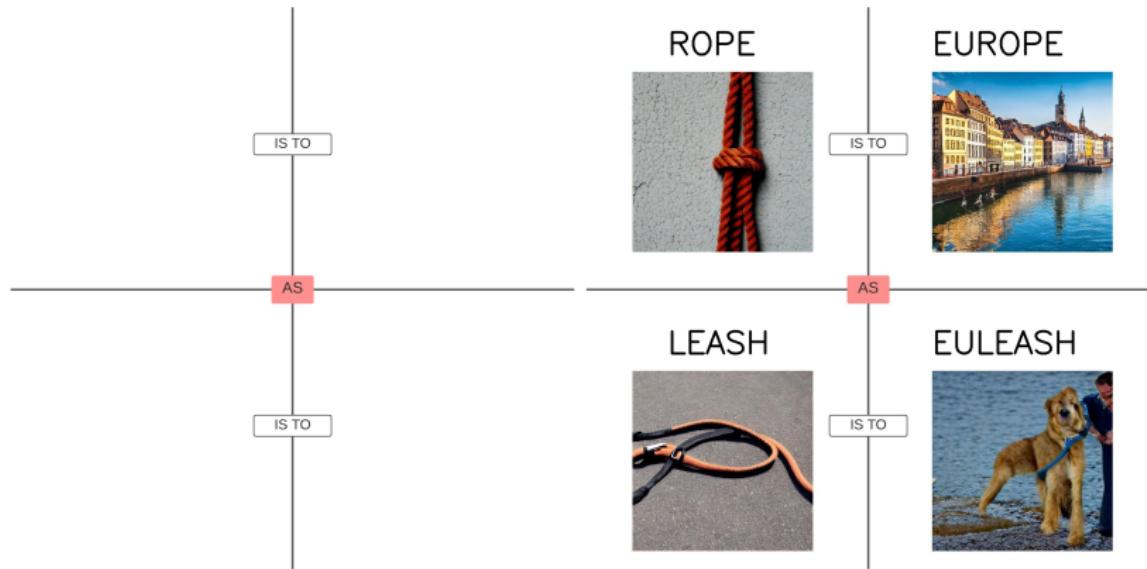


Image generation current issues

Stable Diffusion, Dall-e mini : Text-to-Image models.

Current issue : What text as input ?

Some difficulties observed :

- ▶ Abstract object nouns
- ▶ Ambiguous words (*various meaning*)
- ▶ Verbs, deverbal nouns



Figure – 3 images generated by stable diffusion for input "ban"

But... issues?

Non-intentional humor

- ▶ Polysemic words : *Rob* (*V*) vs. *Rob* (*PN*)

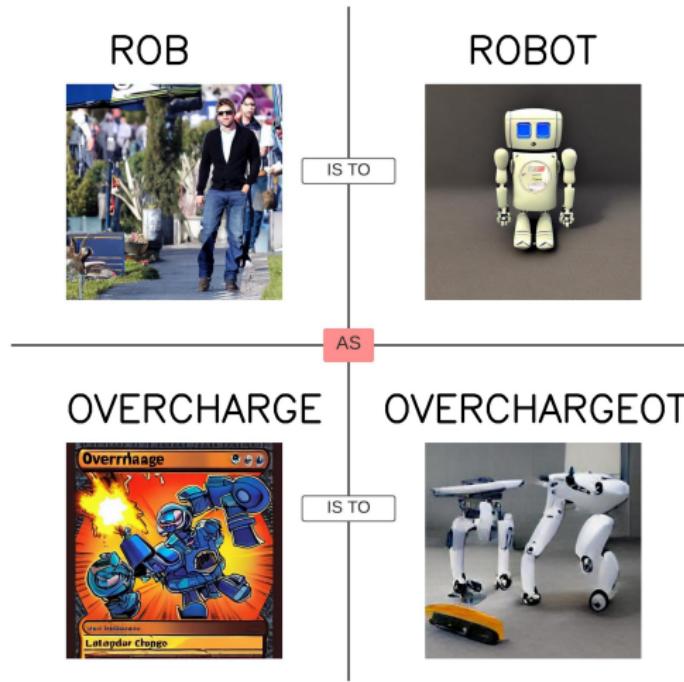
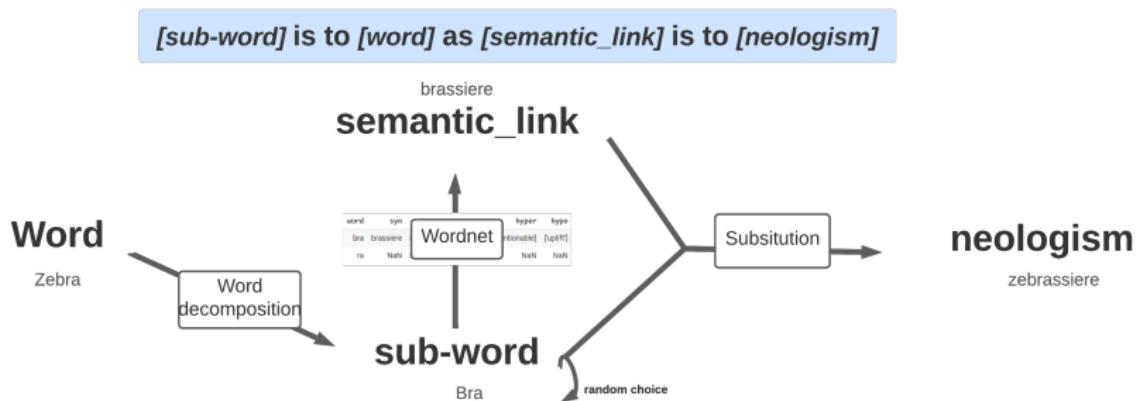


Figure – *rob* is to *robot* as *overcharge* is to *overchargeot*

Reminder Correspondence Generation

1st prototype :



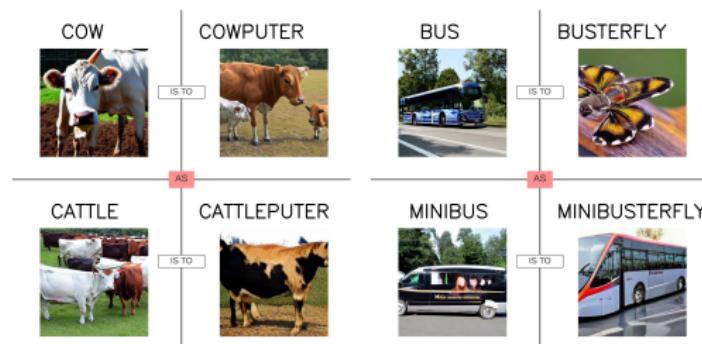
Puns Generation

MANGO	GO	WORD CORRESPONDANCE	"GO"		ANTONYME	STAY	ANALOGY	MANSTAY
	NGO							
	NG							
	ANG							
	AN	WORD COMPOSITION	"ANY"		ANTONYME	"ALL"	ANALOGY	MALLGO
	MA	WORD COMPOSITION	"MAP"		ANTONYME		ANALOGY	MAPNGO
	MANG	WORD COMPOSITION	"MANGE"		ANTONYME		ANALOGY	MANGEO
	MAN	WORD CORRESPONDANCE	"MAN"		ANTONYME	"WOMAN"	ANALOGY	WOMANGO
	ANGO							

Word Composition

Morphological Modifications :

- ▶ No more sub-words less than 3 letters when generating punanalogy
- ▶ 'ca' : syn 'California', 'mo' : syn 'Missouri'
- ▶ Create sub-words by adding a letter for each sub-words of a word
- ▶ 'avocado' : 'cat','car','dog'...



Current amelioration work

Semantic integration :

- ▶ use previous SPARQL queries based on humor
- ▶ find two sub-words with the same lexical field ('cat','dog') and create 2 neologisms
- ▶ 'sub-words' is to 'neologism' as 'sub-words' is to 'neologism'

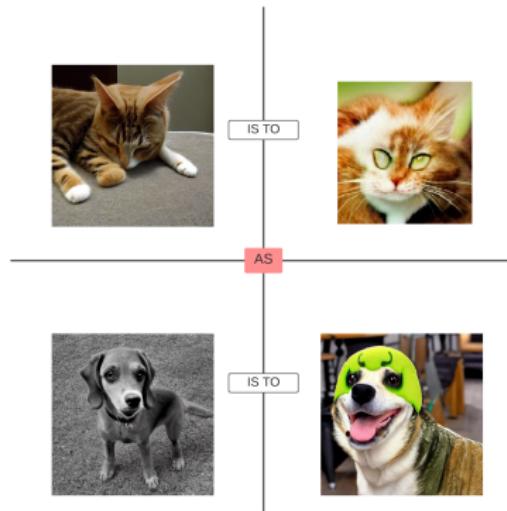


Figure – cat is to avocato as dog is to avocadog

Current amelioration work

Wikidataset integration :

- ▶ words frequency resolution
- ▶ optimize words selection

Future Integration

New idea of puns : "Mirror" words

- ▶ Mirror correspondence w/m, p/q , e/a, u/n
- ▶ *cow is to cowputer as mom is to momer*
- ▶ adding an urban aspect

"Momer"



Figure – Mower

Momer

A person that has either done moms, did moms, or will soon do moms. Basically a [milf enthusiast](#) as one word if you're lazy. hence the [prefix](#) being mom.

*person A: [that dude](#) over there is such a **momer**, keep him away from your wife and kids*

person B: WHY [MY KIDS](#)

by [juul or something](#) April 7, 2021

[1 like](#) | [0 dislikes](#) | [FLAG](#)

momer

its [moment](#), but [spelled wrong](#)

"omg he did all his [homework](#) in an hour"
"nerd momer"

by [saintcowboi](#) May 31, 2022

[1 like](#) | [0 dislikes](#) | [FLAG](#)

Get the [momer mug](#).

Figure – from Urban Definition [5]

Human evaluation

Analogies will be proposed to evaluators in order to "rate" humor

- ▶ Topics
 - ▶ Objects, animals, insults, work, person, celebrities and food
- ▶ Size of the word
 - ▶ $\text{word} < 6$ / $6 < \text{word} < 10$ / $\text{word} > 10$
- ▶ Size of the tokens
 - ▶ $\text{tokens} < \text{word}-1$ / $\text{tokens} < \text{word} * 0.75$ / $\text{tokens} < \text{word} * 0.5$

Morphology metric to evaluate neologism's blending

Main idea : Give a morphological score to the neologism to judge its morphological integration in English.

- ▶ Goals :
 - ▶ Score a word depending on its integration with English morphology
 - ▶ Used in **selection process**
 - ▶ Have an objective metric
- ▶ Ideas to implement it :
 - ▶ Rule based approach
 - Drawbacks :** Language dependant, complete ?
 - ▶ Classification task
 - ▶ Use of morphological embeddings
 - Current problem :** Morphological embedding precise enough to differentiate between quasi-similar words

Evaluation into punology selection process

Input word : Batman

46 punalogies generated :

bat is to batman as cream is to
creamman

bad is to badman as evil is to evilmam

mag is to batmag as press is to batpress

bat is to batman as carnivorous bat is to
carnivorous batman

man is to batman as adonis is to
batadonis

mane is to batmane as encolure is to
batencolure

- ▶ Create ranking between punalogies based on :
 - Morphology probability (*Morphology score*)
 - "Funny" relationship (*prioritize topics, lexical links [3]*)
 - "Funny" score (*Human evaluation*)
 - ...

Timeline

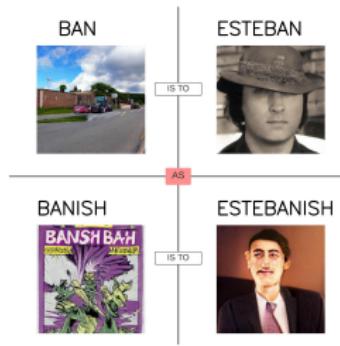
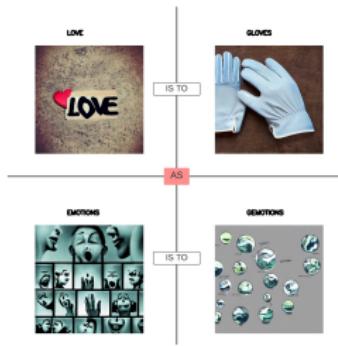
What was accomplished :

- ▶ Meme Generation
- ▶ New punalogies by word Composition
- ▶ Human evaluation protocol
- ▶ Omar loves our project

To do :

- ▶ Evaluation & selection process
 - ▶ Investigate morphology blending score
 - ▶ Create ranking protocol
 - ▶ Generalize human evaluation
- ▶ Create twitter Bot
- ▶ Pun Generation
 - ▶ Extend type of puns (phonetic)
 - ▶ Generate new puns (momer)
- ▶ Have a meeting on futures perspectives to develop the project

Thank you ! Questions ? Suggestions ?



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- [2] Boris Dayma, Suraj Patil, Pedro Cuenca, Khalid Saifullah, Tanishq Abraham, Phúc Lê Khc, Luke Melas, and Ritobrata Ghosh. Dall·e mini, 7 2021.
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- [8] Kim Binsted and Graeme D. Ritchie. Computational rules for generating punning riddles. 1997.
- [9] Pyenchant.