Meme learning

Michał Bieroński *Michał Jóźwiak* *Piotr Bielak*

Politechnika Wrocławska

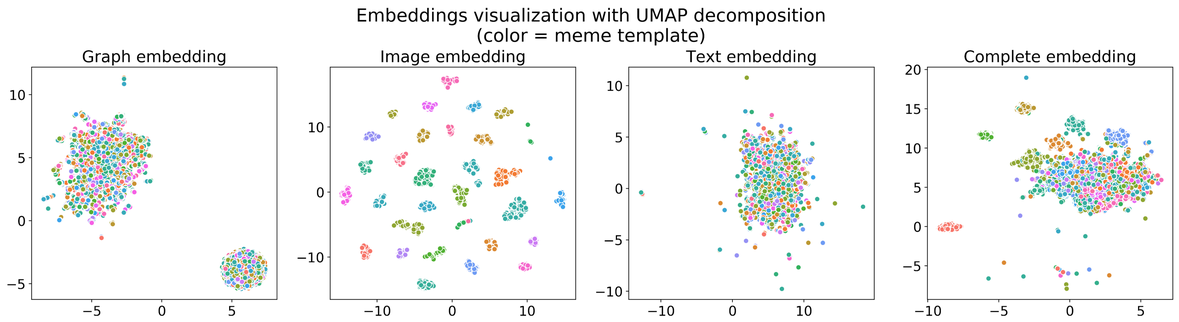
Introduction

Meme (*noun*) - An image, video, piece of text, etc., typically humorous in nature, that is copied and spread rapidly by Internet users, often with slight variations.

~ Oxford dictionary

In our work, we acquired and structured image memes from various sources, effectively creating a first ever (to the best of our knowledge) meme network. Having done that, we performed analyses and created a generative model.

Embeddings



Meme generation

We created a classification model, which selects the best matching image template for a given text. On top of this model, we built a meme generator, whose sample output is presented below.

82.5% 66.5%
accuracy

Meme recommendation

Our simple recommendation system delivers the most similar memes to the one provided. It is based on cosine similarity and takes into cosideration multiple aspects of memes: image, text and users' social interactions.

Processing pipeline

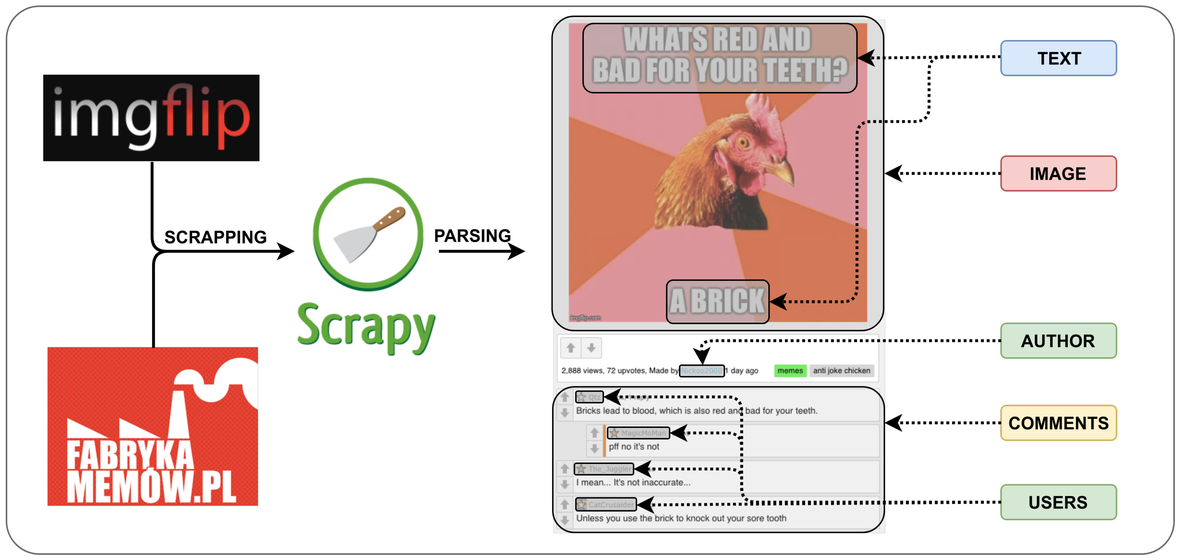


Fig 1. Meme as complex data source

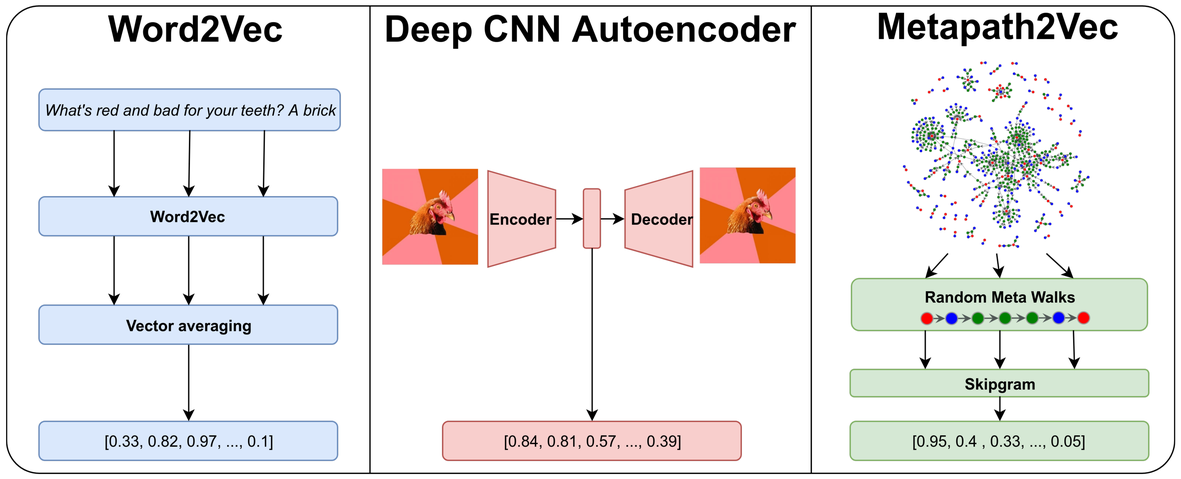


Fig 2. Multimodal processing

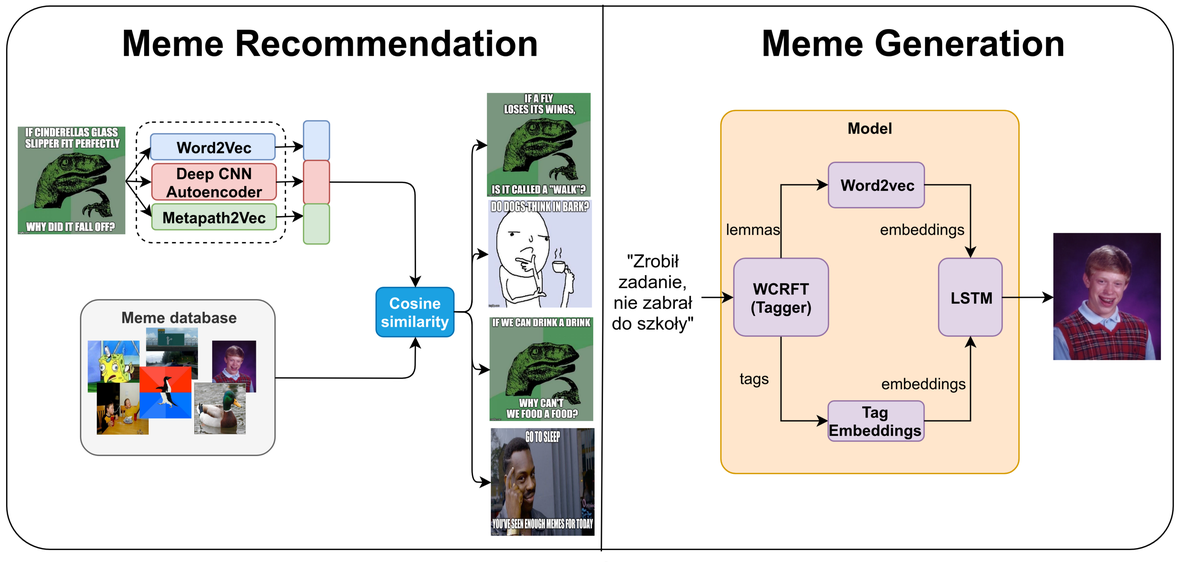


Fig 3. Applications

Final thoughts

- Memes' short texts were enough to perform pretty interesting tasks.
- Based on embedding clustering, well defined communities do not seem to emerge from Imgflip's user base.
- Generative model works much better for Polish memes - higher number of parts of speech seems to help.