

BPE for Autoregressive Image Generation

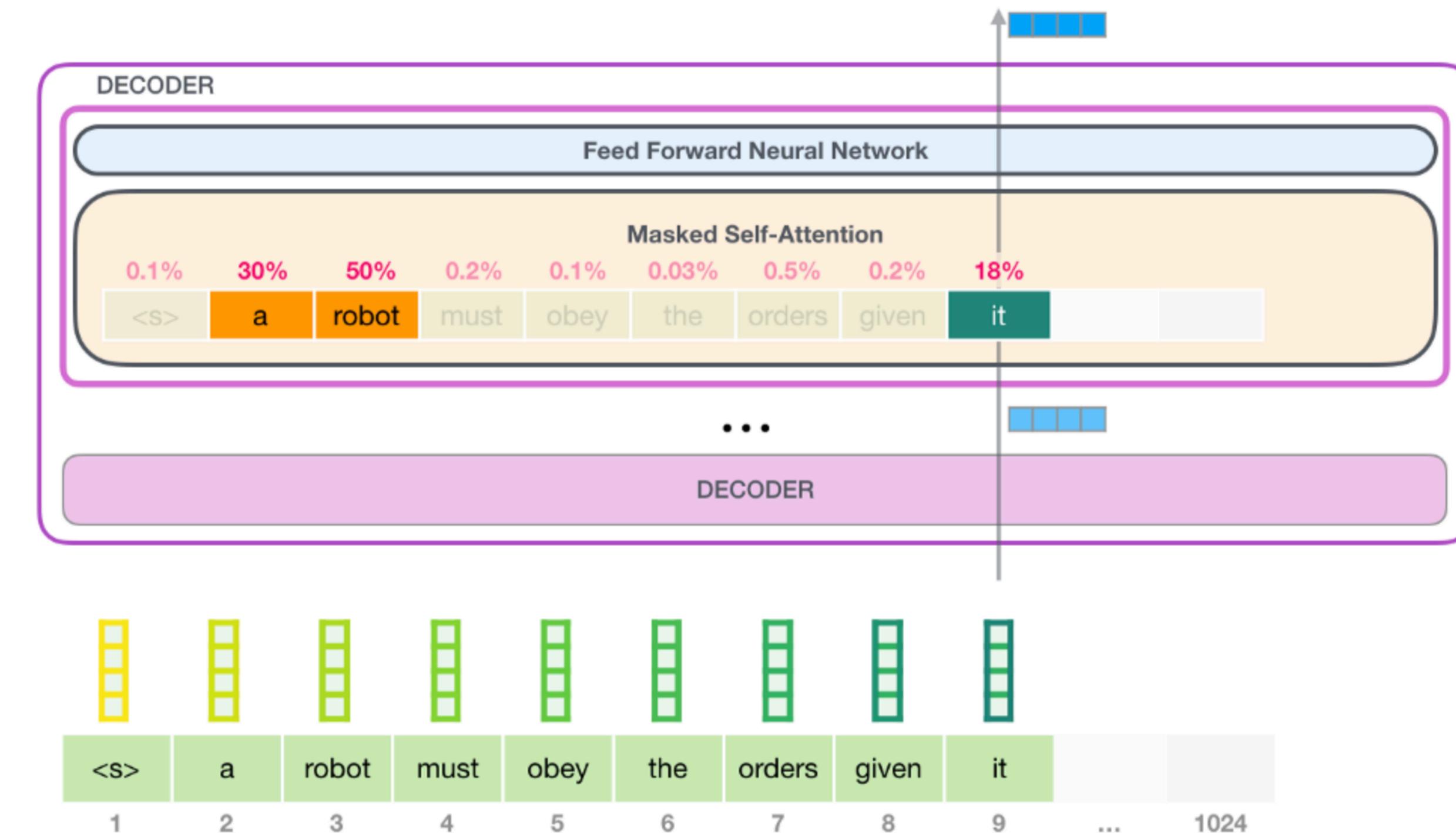


Anton Razzhigaev, PhD-2, Skoltech
May, 2022

Problem

There are several approaches to image generation:

- GANs
- AutoEncoders
- Energy models
- Optimal transport
- Diffusion models
- Autoregression



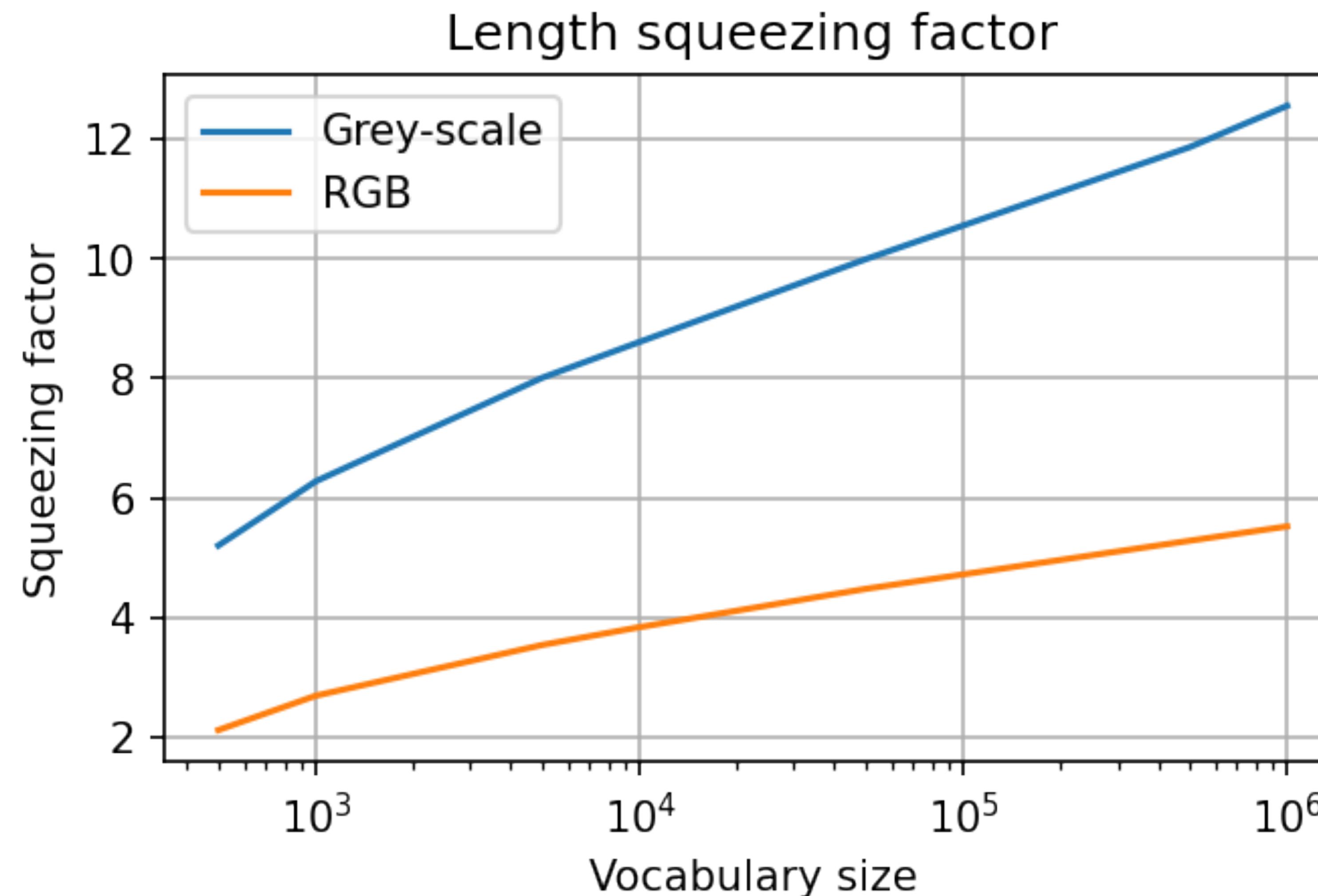
Pixel-level autoregression methods are understudied, as the pixel-sequence length is infeasibly large

Solution

We suggest to use BPE-encoding inspired by NLP sequence squeezing techniques

un-related
un related
un rel-at-ed
un re-l-at-ed
un re-l-at-ed
un re-l-ated
un rel-ated
un-related
unrelated

Results



Results



Conclusion

BPE effectively squeezes the sequence length and reduces the required memory and power for training of image generation model