(Not) Understanding LATIN POETIC STYLE with DEEP LEARNING

paper + code

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https://github.com/bnagy/fail-paper

Dissimilem. quippe ille deis auctoribus ultor
Patris erat caesi media inter pocula, sed nec
Electrae iugulo se polluit aut Spartani

Juvenal, Satires 8.216–8

⇩ Transform

dis+A+L si+S mi lem+A+L+SC kwip+L+S+SY pil+A+L+S le+WC de+S is+A+L+SC
auk+L to+A+L+S ri bus+DI ul+A+L+S tor+L EOL pa+A+L+S tris+WC e+S
rat+A+L+SC kae+L+S si+A+L+SC me+S di+SY in+A+L+S ter+L+DI po+A+L+S ku
la+DI sed+A+L+S+SC nek+L+S EOL e+A+L lek+L+S trae+A+L+SC ju+S gu lo+A+L+SC
se+L+S+DI pol+A+L+S lu it+DI aut+A+L+S+SC spar+L ta+A+L+S ni+L EOL

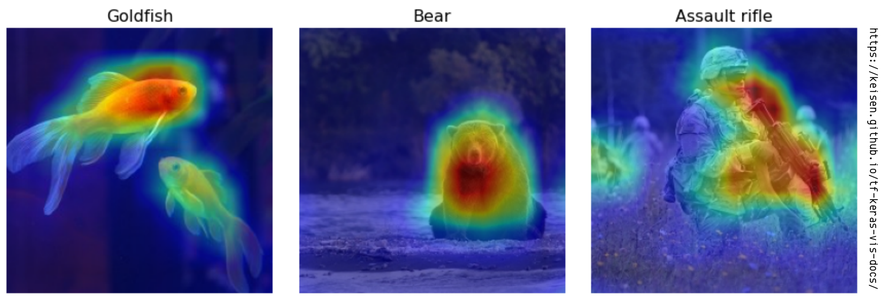
⇩ Encode

658 54 7 882 4499 1765 130 90 75 3831 185 11 16 388 575 2 400 3005 40
200 391 489 43 1020 41 765 272 34 154 301 2396 2 295 1659 2036 199 511
222 747 1423 276 168 283 1994 24 368 2 1

⇩ Embed $\mathbb{R}^{32}$

The **Big Idea**:

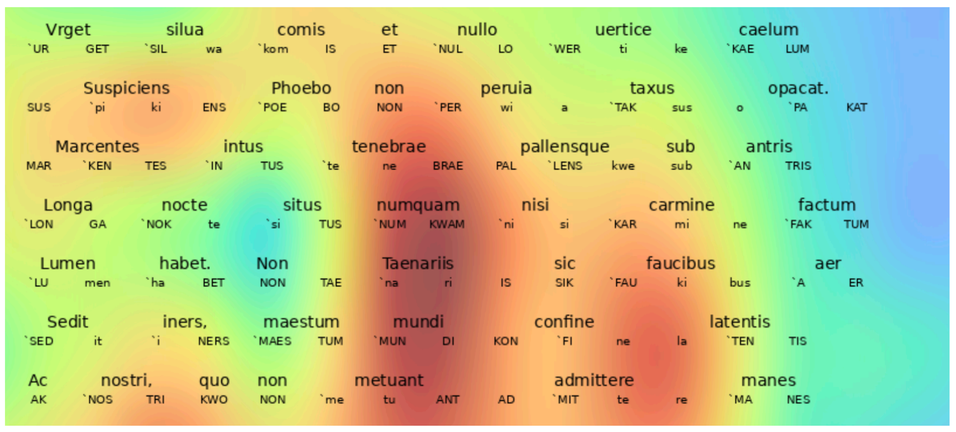
Can we do this...



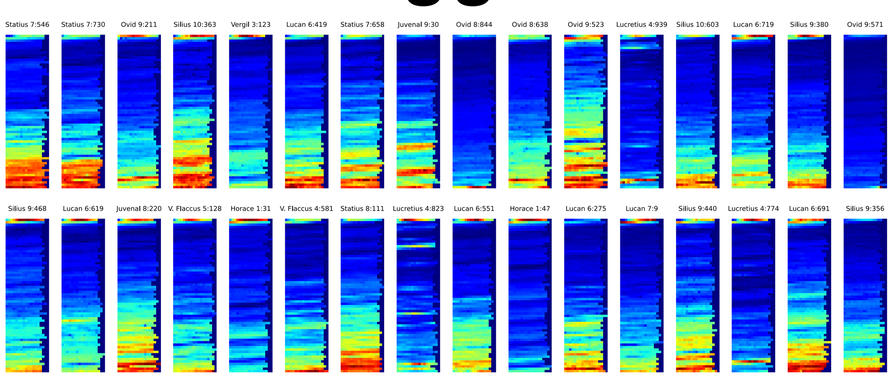
https://keisen.github.io/tf-keras-vis-docs/

...but for poetic style?

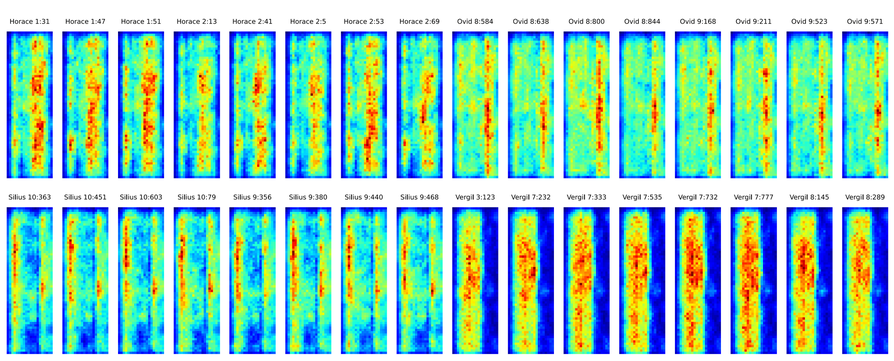
TL;DR yes, but not usefully 😭



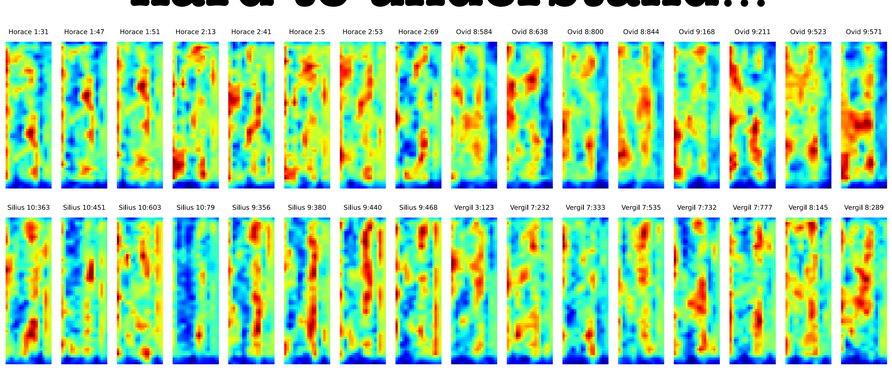
Attention for LSTMs has **vanishing gradients**



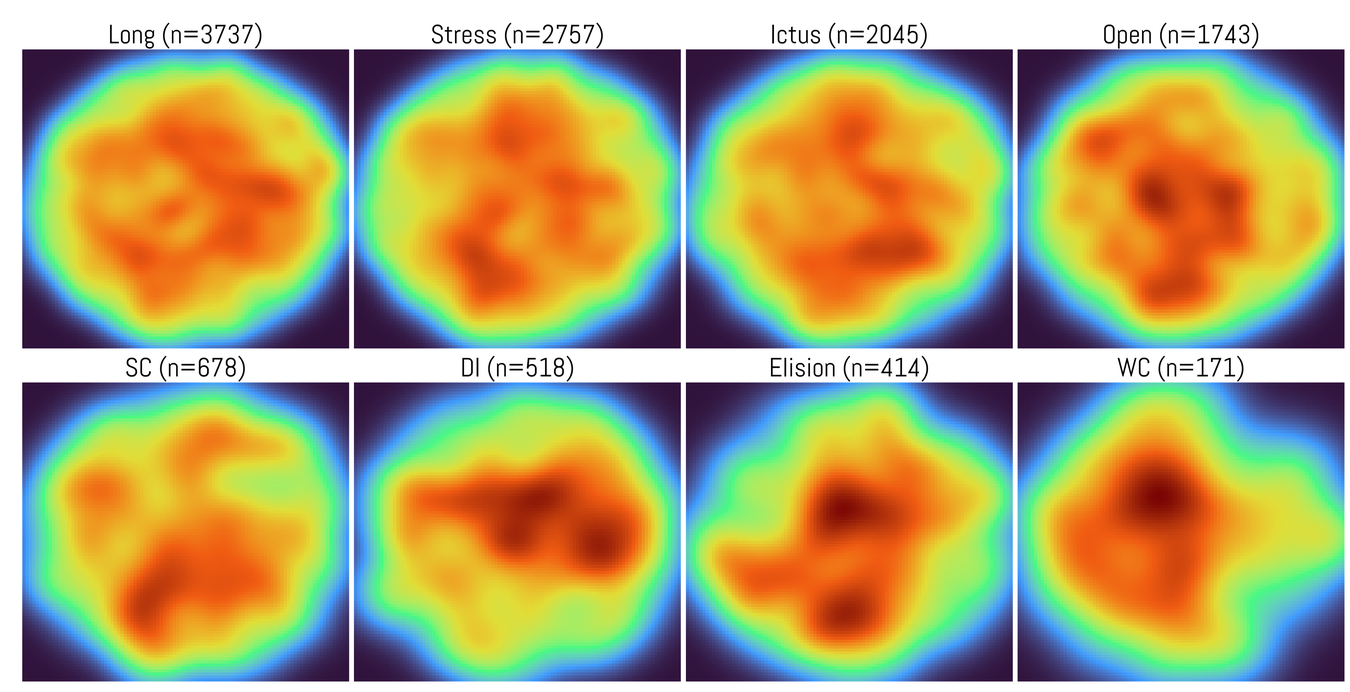
Attention at the softmax layer has **class bias**

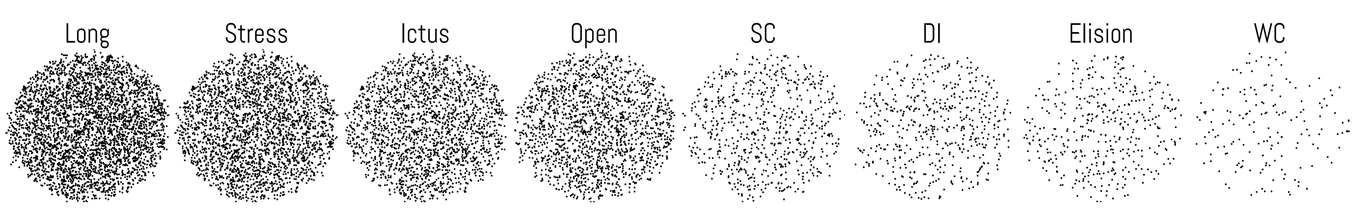


Convolutional layers are very **hard to understand**...



...but, the embedding space might have **emergent properties**





PAN IJP Institute of Polish Language Polish Academy of Sciences
10 Computational 01 01 Stylistics 0101000 11 Group 011010110