Learning a Loss Function for Text Simplification

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problem

- training a neural network using gradient descent requires a differentiable loss function
- but: typical text simplicity features defined stepwise, not smooth

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- idea: create „helper" network to calculate difficulty score

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datasets

- British Council „LearnEnglish“, News in levels etc.
- but: only small number of difficulty levels

- hopefully: Newsela (quasi-continuous difficulty scale)

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defining difficulty score

- lexical features: average word length, ratio of basic english words, type-token ratio...

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defining difficulty score

- lexical features: average word length, ratio of basic english words, type-token ratio...
- syntactical features: number of subordinate clauses, prepositional phrases, passive voice...

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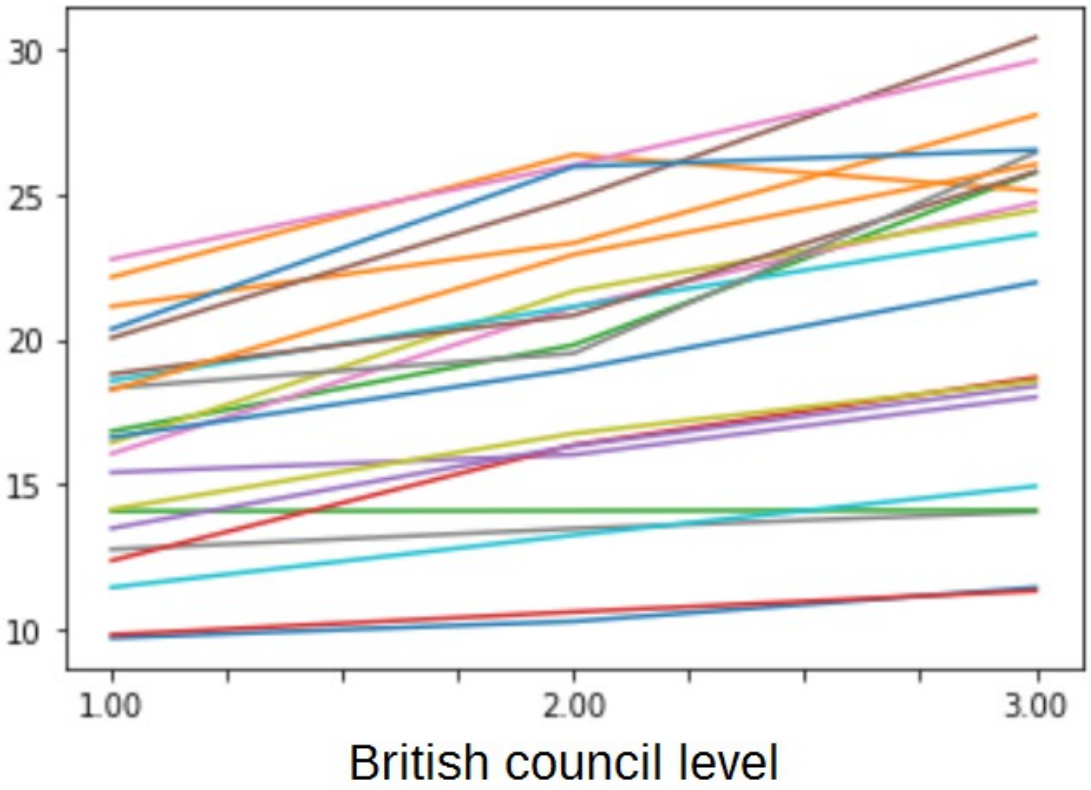
type-token ratio



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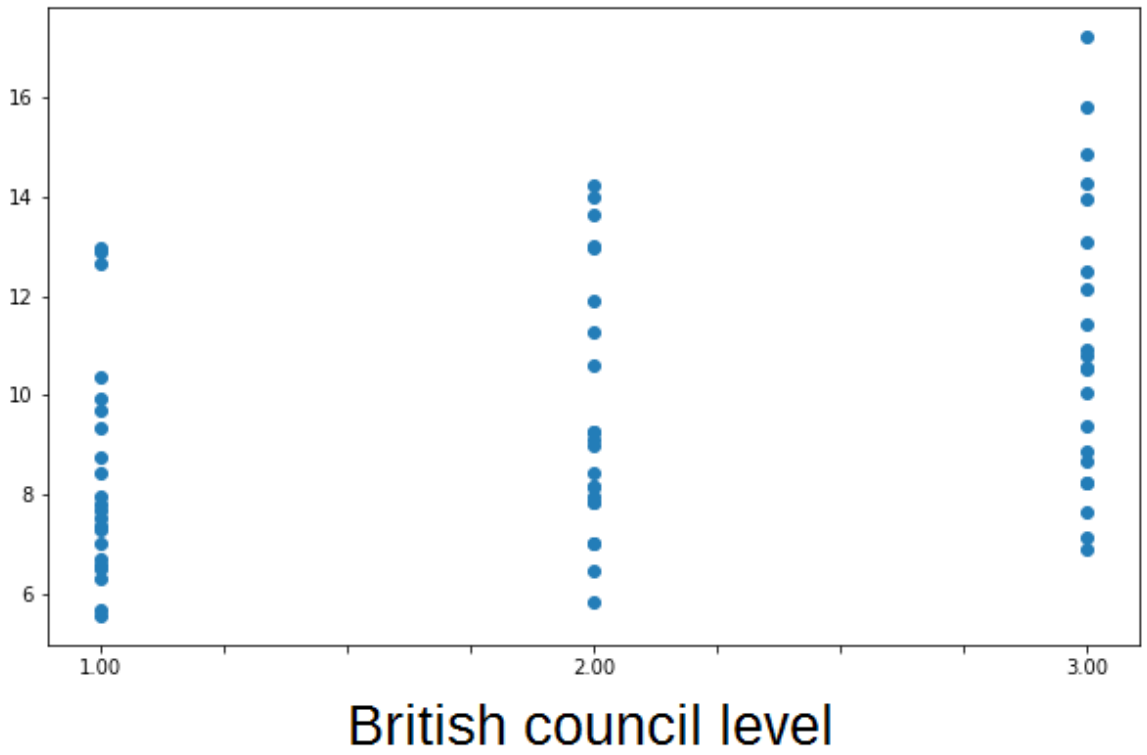
all features combined



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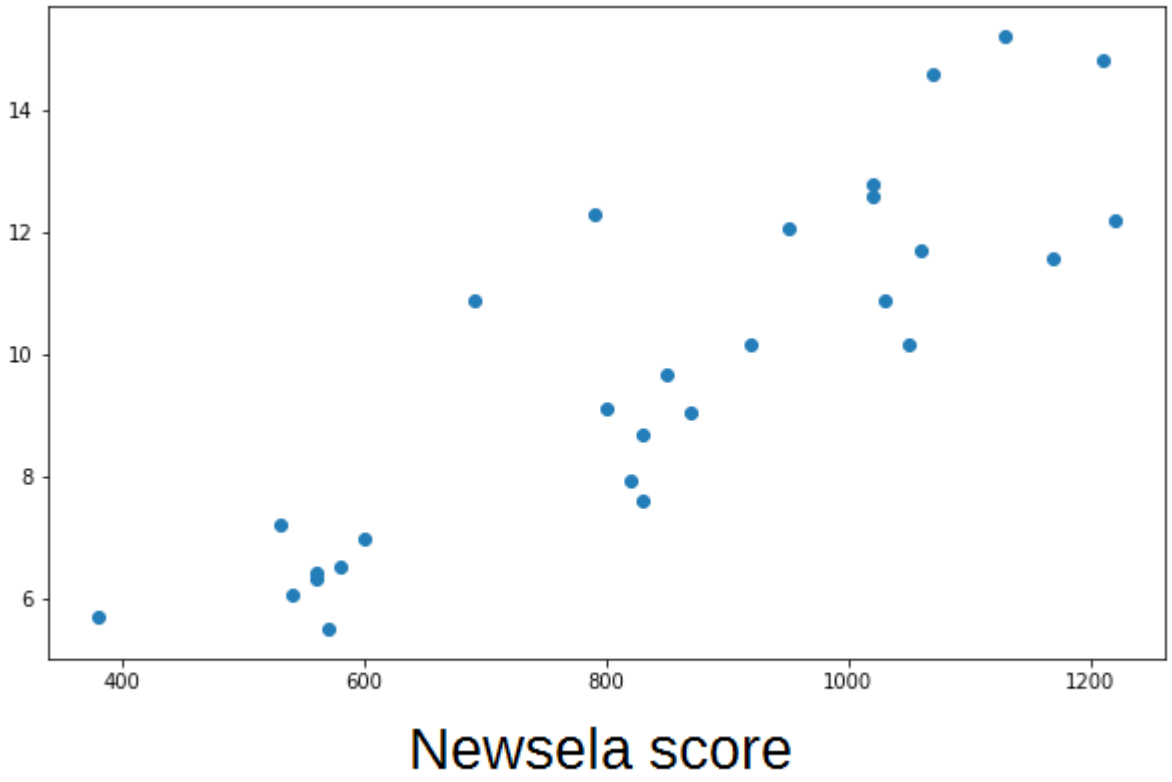

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next steps

- cross fingers about Newsela corpus
- train neural network on the difficulty scores