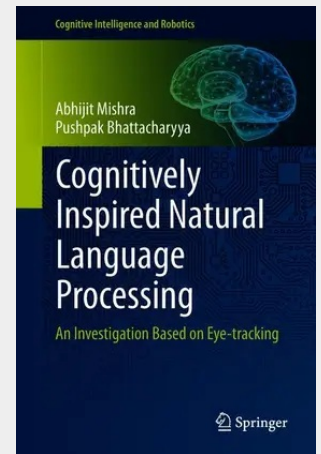


Cognitively Inspired Natural Language Processing

This book shows ways of augmenting the capabilities of Natural Language Processing (NLP) systems by means of cognitive-mode language processing. The authors employ eye-tracking technology to record and analyze shallow cognitive information in the form of gaze patterns of readers/annotators who perform language processing tasks. The insights gained from such measures are subsequently translated into systems that help us (1) assess the actual cognitive load in text annotation, with resulting increase in human text-annotation efficiency, and (2) extract cognitive features that, when added to traditional features, can improve the accuracy of text classifiers. In sum, the authors' work successfully demonstrates that cognitive information gleaned from human eye-movement data can benefit modern NLP.

Currently available Natural Language Processing (NLP) systems are weak AI systems: they seek to capture the functionality of human language processing, without worrying about how this processing is realized in human beings' hardware. In other words, these systems are oblivious to the actual cognitive processes involved in human language processing. This ignorance, however, is NOT bliss! The accuracy figures of all non-toy NLP systems saturate beyond a certain point, making it abundantly clear that "something different should be done."

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