

Text Analysis for Employee Appraisal Report

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ABSTRACT

- We combine Attention and CNN to do text analysis.
- Matching Matrix bridges the gap between text matching and image recognition.
- Hierarchical Convolution captures rich matching patterns, while attention could catch the fatal message.

INTRODUCTION

Employee appraisal (EA) is a crucial HR process that enables an organization to periodically measure and evaluate every employee's performance and also to drive performance improvements. Instead of manually reviewing tedious personal evaluation document, automatically generating statistical profile by algorithm is more favorable. Benefit from the rapid development of natural language processing (NLP), semantic analysis can obtain a high accuracy satisfied human's demand.

An effective way is to extract meaningful matching patterns from words, phrases, and sentences to produce the matching score. Inspired by the success of convolutional neural network in image recognition, where neurons can capture many complicated patterns based on the extracted elementary visual patterns such as oriented edges and corners, we propose to model text matching as the problem of image recognition.

REFERENCES

- [1] Bert: Pre-training of deep bidirectional transformers for language understanding. arXiv preprint, 2018.
- [2] Convolutional neural network architectures for matching natural language sentences. Advances in neural information processing systems, 2014.
- [3] Text matching as image recognition. in Proceedings of the AAAI Conference on Artificial Intelligence. 2016.

METHOD

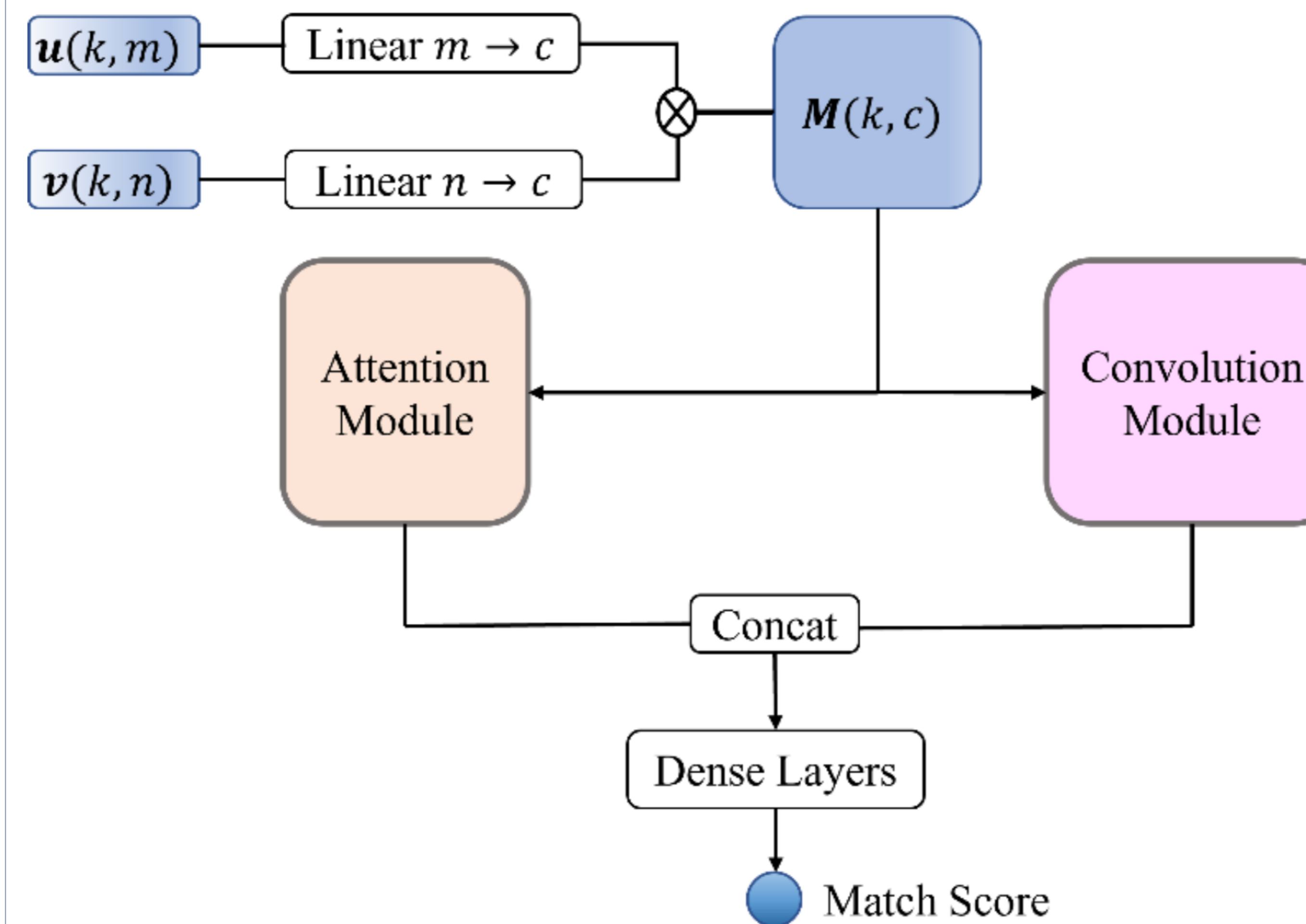


Fig.1 Architecture of Match Model

- Attention module could help catch important information[1].
- Convolution module could help retain position information[2][3].

RESULT

Result on data_eval_label		
Model	Accuracy (%)	F1 Score (%)
MatchPyramid	75.26	80.02
Attention	62.13	67.27
MatchPyramid+Attention	77.89	82.15

Model using attention only performs worst, while model combining convolution and attention performs best.

CONCLUSIONS

With attention block, the semantic matching model performs better than MatchPyramid. More details should be discussed and explored in linkage of convolution and attention.