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Thesis Abstract

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Thesis Abstract

Natural language is the human expression of thought. The representation of natural language, and thus thought, is fundamental to the field of artificial intelligence. This thesis explores that representation through weighted sums of embeddings. Embeddings are dense numerical vectors representing natural language components (e.g. words). Their sum is commonly overlooked as being too simple: in contrast to sequence or tree representations. However, we find that on numerous real-world problems it is actually superior. This thesis demonstrates this capacity, and explains why. The sum of embeddings is a particularly effective dimensionality-reduced representation of the crucial surface features of language.

Declaration

We, the undersigned, agree and certify that the wording of the above thesis abstract is approved and final:

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