Confusion2Vec: ADDING A NEW DIMENSION TO IMPROVE HUMAN LANGUAGE DECODING IN ARTIFICIAL INTELLIGENCE

BACKGROUND

Humans associate words according to meaning (e.g. king -- man and queen -- woman) but also according to how similar they sound (write or right).

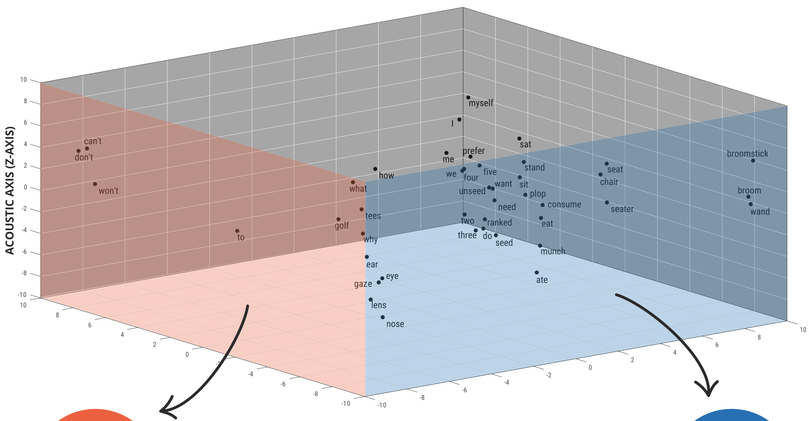
WORDS WITH SIMILAR MEANING

WORDS THAT SOUND SIMILAR

CONFUSION2VEC

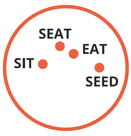
In existing work, the first relationship has been exploited to represent similar words, in the semantic and syntactic space, by similar numerical representations. **In this work we also include their acoustics in this representation.** Thus “no” is close in numerical representation to “not” but also close to “know” and “knot”.

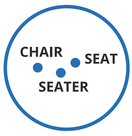
Confusion2Vec: adding the acoustic dimension
A 3D space showing the Confusion2Vec model



WORDS THAT SOUND SIMILAR

WORDS WITH SIMILAR MEANING





DISCUSSION

Confusion2Vec can be employed to **better represent language for artificial intelligent agents or machines to better handle human speech**.

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Confusion2Vec: Towards enriching vector space word representations with representational ambiguities
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