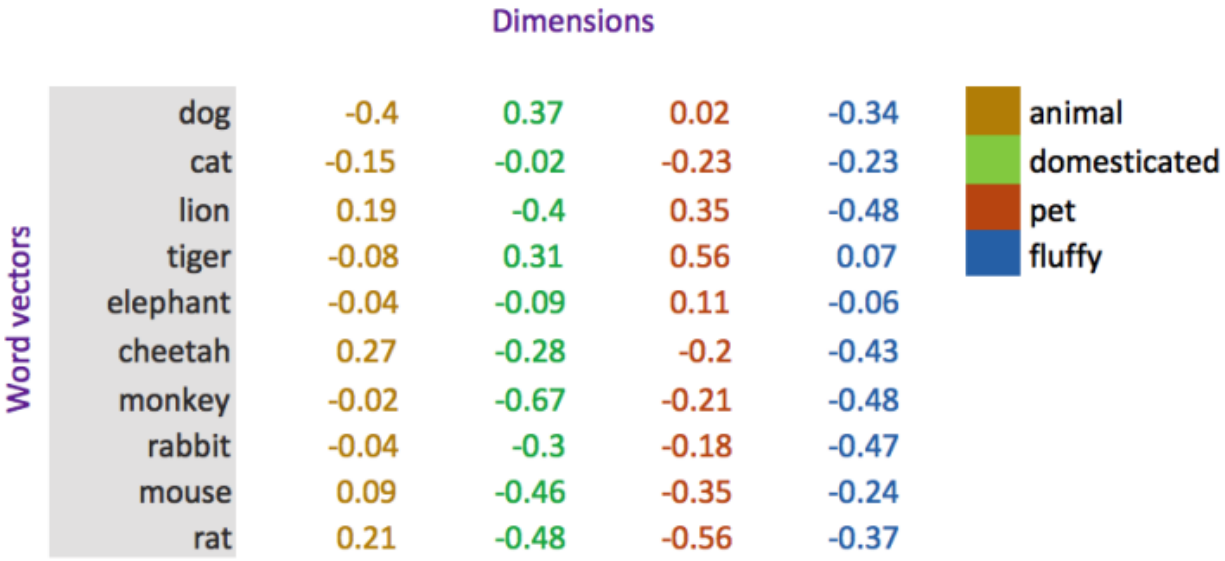
Word representation in machine learning problem

1. Localist representation: One-hot encoding vector, a vector of zeros, excepts the position where the target is in the word pool.

2. **Words vector**: word embeddings or word representations, which are distributed representation. Captures word meanings by a vector of real valued numbers (as opposed to dummy numbers) where each point captures a dimension of the word's meaning and where semantically similar words have similar vectors.



Advantage:

- Relatively smaller dimension
- similar words as similar word vectors, and can be measured mathematically.
- support mathematical operation e.g. King - Man + Women = Queen

How to construct world representation?

Word2vec

$ \int_a $