Image2Vec: Learning image representation for reasoning

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Word2Vec

• Learning the meaning of words along with semantic relationships

• Vector representations encode linguistic regularities and patterns

• Sparse representations > Dense representations

• Learning enforces contextually similar words get encoded similarly

Want to play around with Word2Vec? : https://www.kaggle.com/c/word2vec-nlp-tutorial
So What?
So What?

Vector Arithmetic holds!

‘Rome’ ~ ‘Paris’ - ‘France’ + ‘Italy’

‘Queen’ ~ ‘King’ - ‘Man’ + ‘Woman’

‘Tiger Woods’ ~ ‘Michael Jordan’ - ‘basketball’ + ‘golf’

Check out more word arithmetic: http://www.thisplusthat.me http://nlp.stanford.edu/projects/glove/
Can we do this with images?
Can we do this?
Image2Vec

Learning a ‘Deep’ Dictionary of attributes
Image2Vec

Learning a ‘Deep’ Dictionary of attributes

CNNs to learn interpretable dictionary
Image2Vec

Learning a ‘Deep’ Dictionary of attributes

CNNs to learn interpretable dictionary

Can we supervise the learning of attributes?
How do we learn this?
How do we learn this?
How do we learn this?