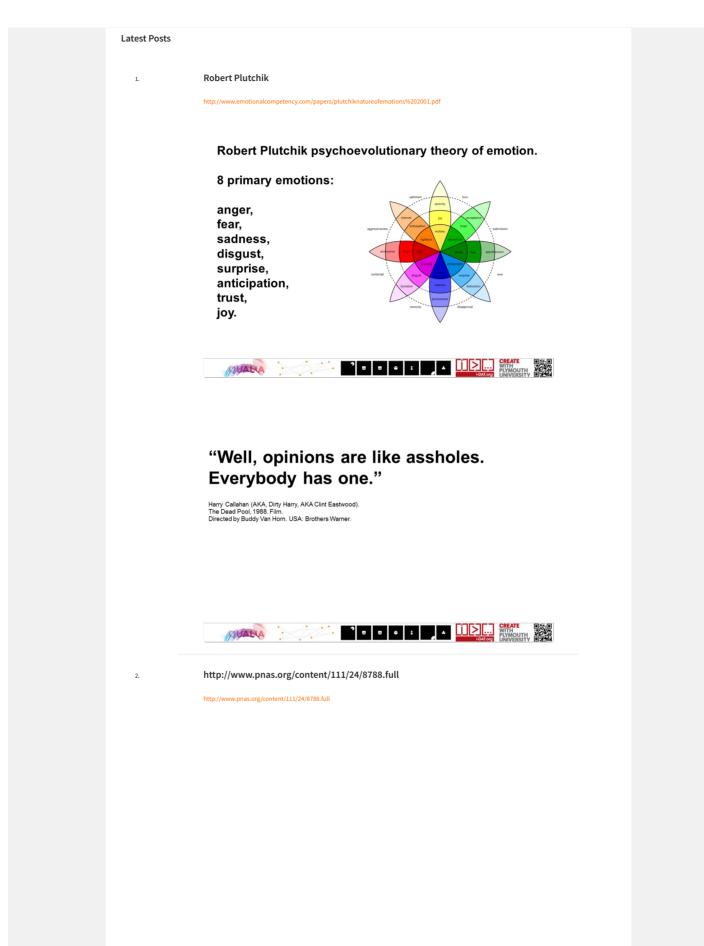
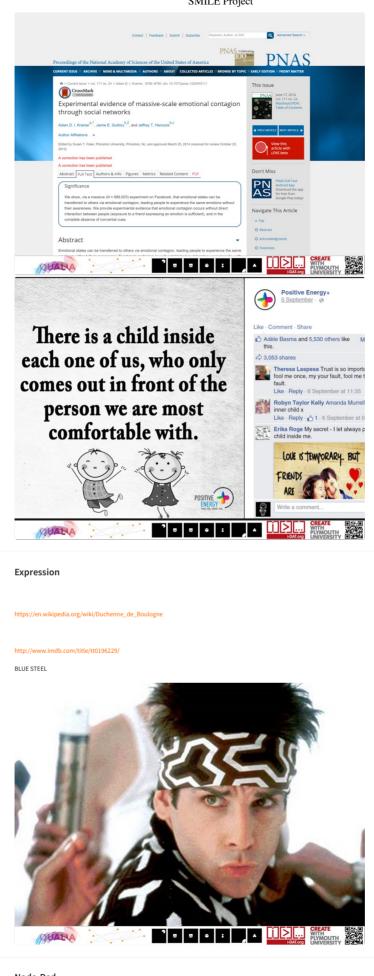
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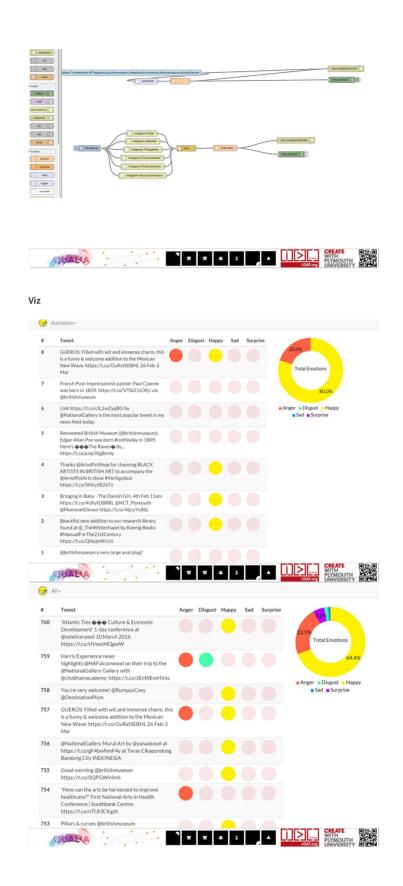
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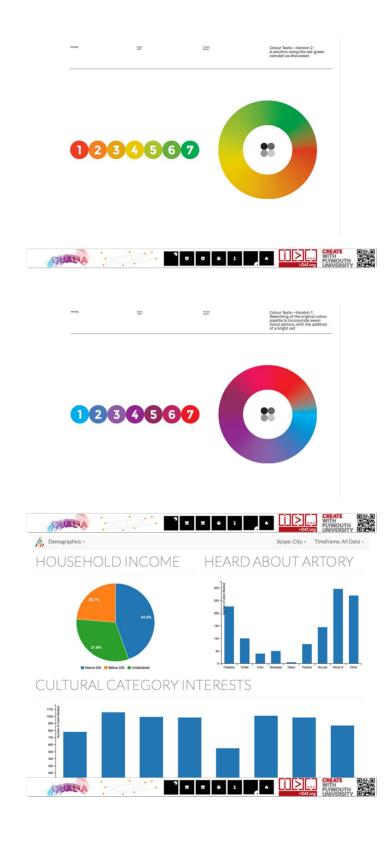
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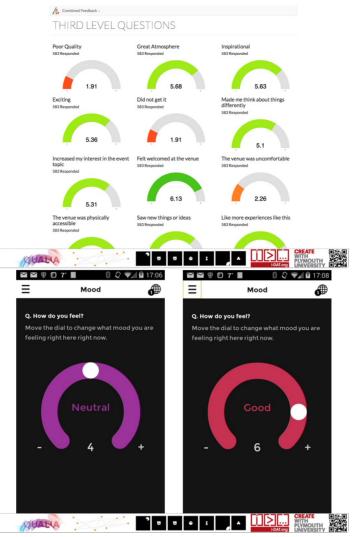
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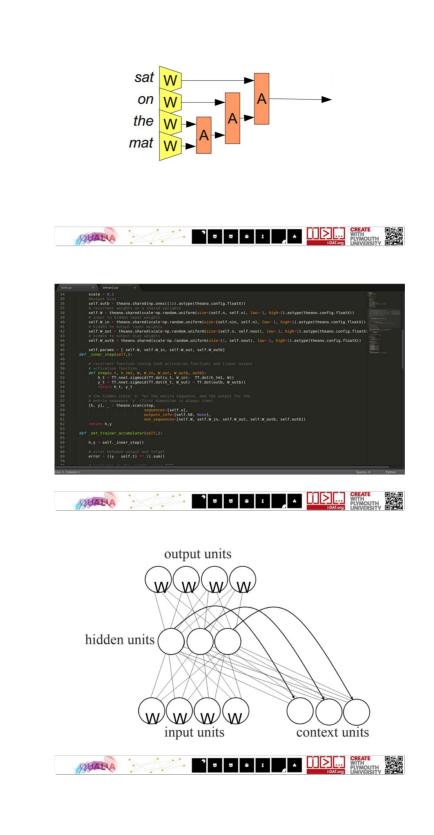


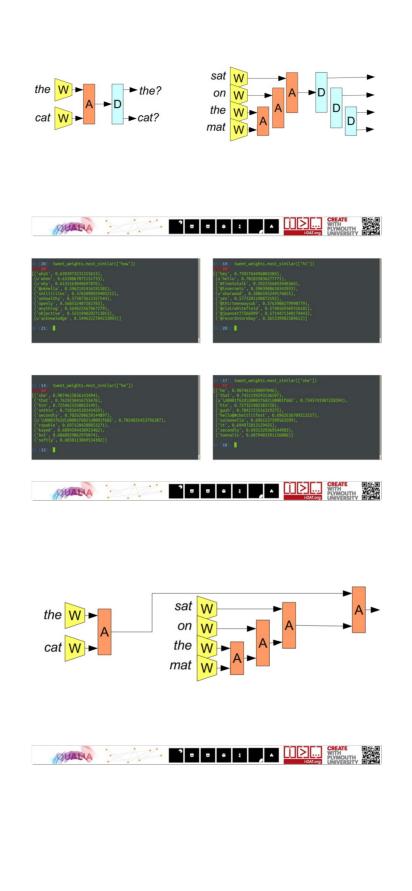
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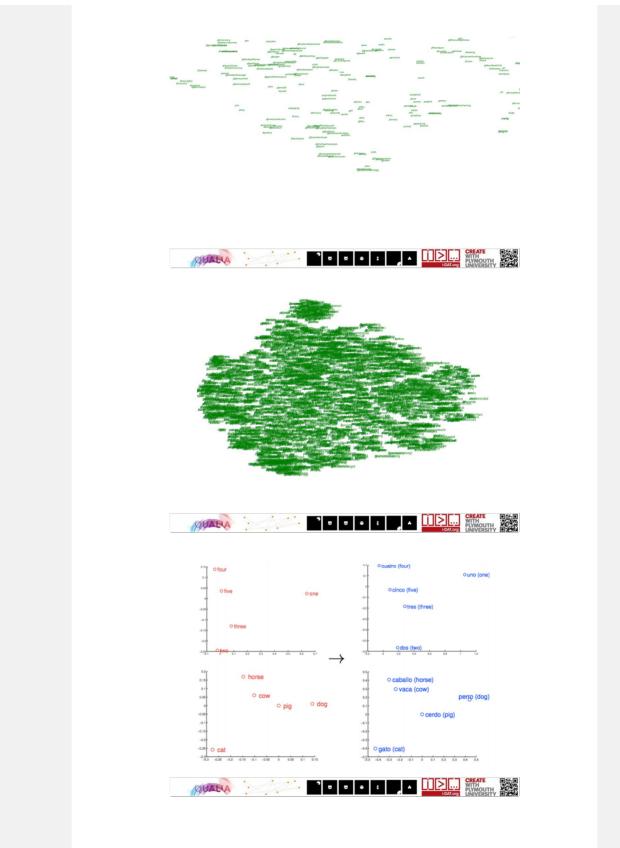
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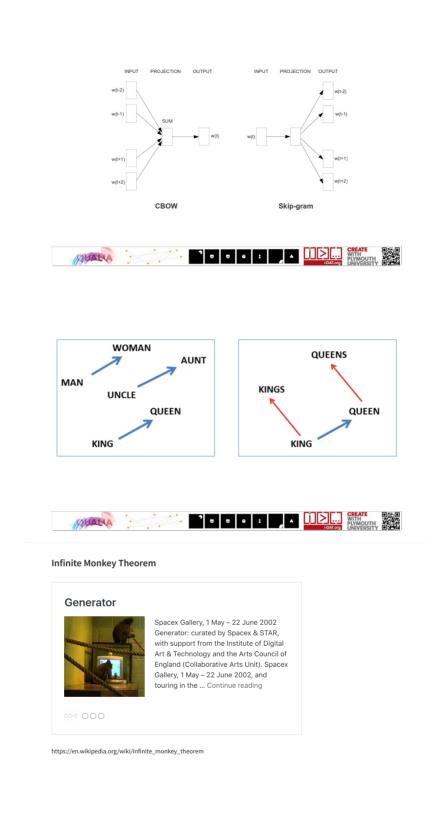
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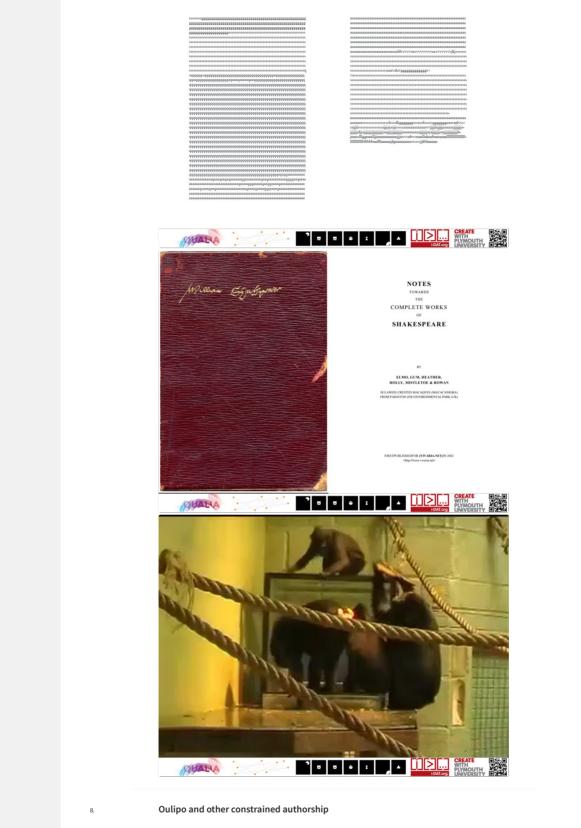




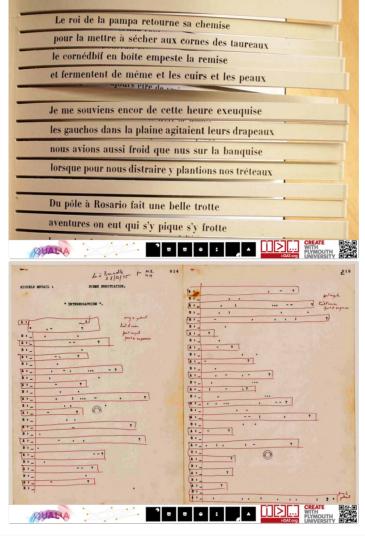




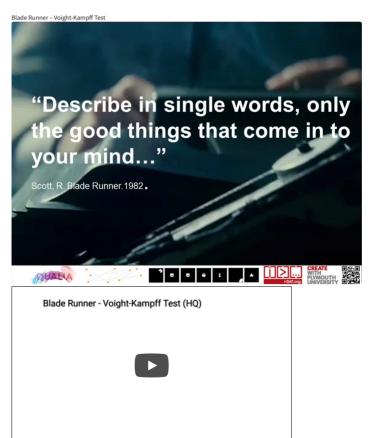
7.



https://en.wikipedia.org/wiki/Oulipo



Describe in single words, only the good things that come into your mind...



9

10.

SMILE Project

A short introduction on Deep and Recurrent methods for Neural Networks

Conventional machine learning techniques have limitations in their ability to process raw data. The implementation of such methods often requires domain expertise and delicate engineering. On the other hand Deep Learning algorithms have shown another way forward. Representation learning allows for the discovery of suitable representations from the raw data.

By passing the data through multiple non-linear layers, each layer transforms the data to a different representation, having as by passing the data intrough intrupper intrimet agers, each ager data to a universe transformed and the approximation for the set of the second secon in speech and image recognition.

By pre-training layers like these, of gradually more complicated feature extractors, the weights of the network can be initialised in "good" values. By adding an extra layer of the whole system can then be trained and fine tuned with standard backpropagation. The hidden layers of a multilayer neural network are learning to represent the network's inputs in a way that makes it easier to predict the target outputs. This is nicely demonstrated by training a multilayer neural network to predict the next word in a sequence from a local context of local words.

When trained to predict the next word in a news story, for example, the learned word vectors for Tuesday and Wednesday are very similar, as are the word vectors for Sweden and Norway. Such representations are called distributed representations because their elements (the features) are not mutually exclusive and their many configurations correspond to the variations seen in the observed data. These word vectors are composed of learned features that were not determined ahead of time by experts, but automatically discovered by the neural network. Vector representations of words learned from text are now very widely used in natural language applications.

Another type of networks that have shown interesting results are Recurrent Neural Networks (RNN). RNNs try to capture the temporal aspects of the data fed to them, by considering multiple time steps of the data in their processing. Thanks to advances in their architecture [1, 2] and ways of training them [3, 4], RNNs have been found to be very good at predicting the next character in the text [5] or the next word in a sequence [6], but they can also be used for more complex tasks. For example, after reading an English sentence one word at a time, an English 'encoder' network can be trained so that the final state vector of its hidden units is a good representation of the thought expressed by the sentence.

Despite their flexibility and power, DNNs can only be applied to problems whose inputs and targets can be sensibly encoded with vectors of fixed dimensionality. It is a significant limitation, since many important problems are best expressed with seque whose lengths are not known a priori. For example, speech recognition and machine translation.

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