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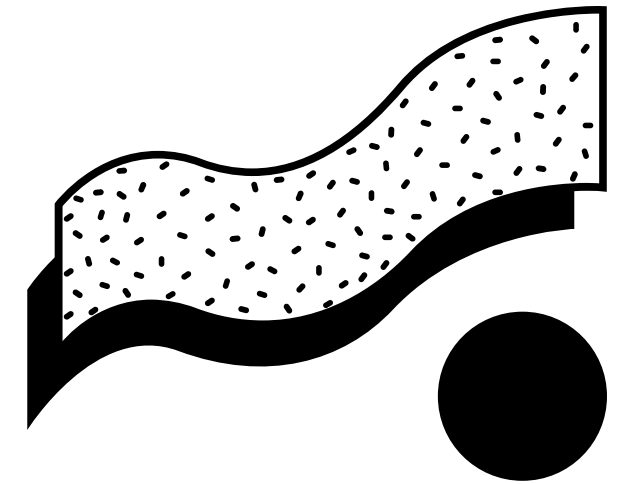
Streamlit

Why ?

**Given information is free online,
you could become an expert in any field.
Why is this not happening ?**

- **Research papers are really tough to read**
- **We make reading papers easier**

Plan



For one paper

**Explain every
keyword**

For many papers

**Connect all your
papers**

What's Next ?

Explain every keyword

Demo Time !



<https://adpt-lrn-phys.streamlit.app/>

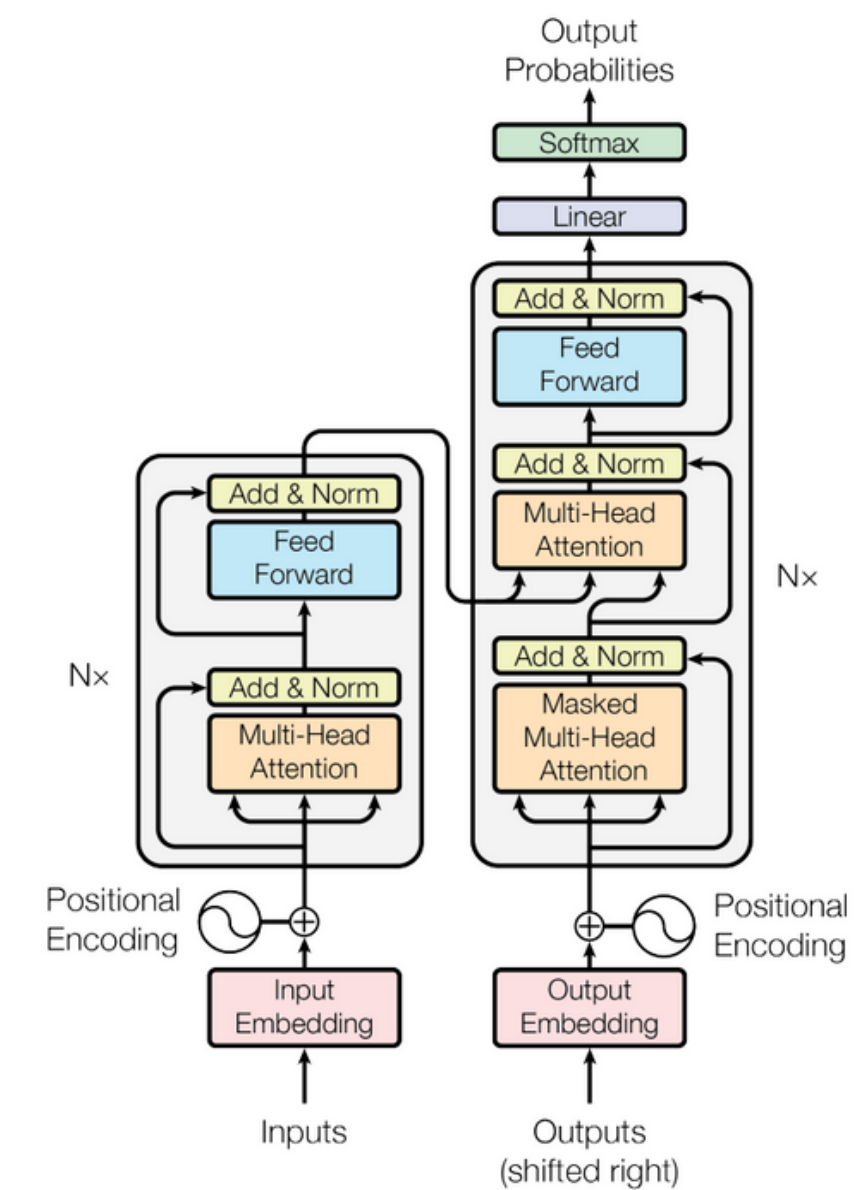


Figure 1: The Transformer - model architecture.

The Transformer follows this overall architecture using stacked self-attention and point-wise, fully connected layers for both the encoder and decoder, shown in the left and right halves of Figure 1, respectively.

3.1 Encoder and Decoder Stacks

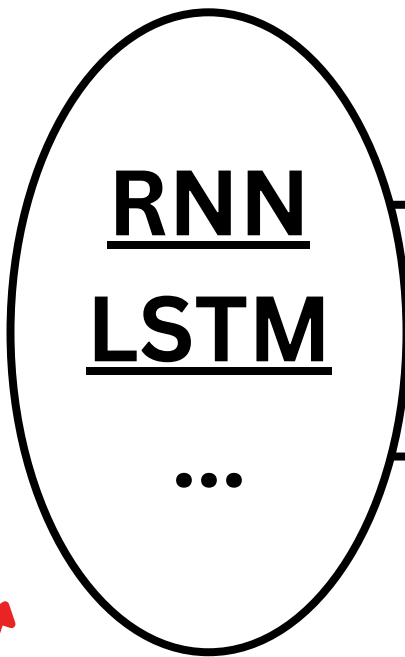
Encoder: The encoder is composed of a stack of $N = 6$ identical layers. Each layer has two sub-layers. The first is a multi-head self-attention mechanism, and the second is a simple, position-wise fully connected feed-forward network. We employ a residual connection [11] around each of the two sub-layers, followed by layer normalization [1]. That is, the output of each sub-layer is $\text{LayerNorm}(x + \text{Sublayer}(x))$, where $\text{Sublayer}(x)$ is the function implemented by the sub-layer itself. To facilitate these residual connections, all sub-layers in the model, as well as the embedding layers, produce outputs of dimension $d_{\text{model}} = 512$.

Decoder: The decoder is also composed of a stack of $N = 6$ identical layers. In addition to the two sub-layers in each encoder layer, the decoder inserts a third sub-layer, which performs multi-head attention over the output of the encoder stack. Similar to the encoder, we employ residual connections around each of the sub-layers, followed by layer normalization. We also modify the self-attention sub-layer in the decoder stack to prevent positions from attending to subsequent positions. This masking, combined with fact that the output embeddings are offset by one position, ensures that the



ChatGPT explains it

The introduction provides an overview of recurrent neural networks (RNNs), memory (LSTM), and gated recurrent neural networks. These architectures have been used in sequence modeling and transduction problems such as language modeling and machine translation. The introduction also mentions recent advancements in language models and encoder-decoder architectures.



Explain Keywords in parallel

RNNs, or recurrent neural networks, are a type of artificial neural network. LSTM stands for Long Short-Term Memory, which is a type of RNN.

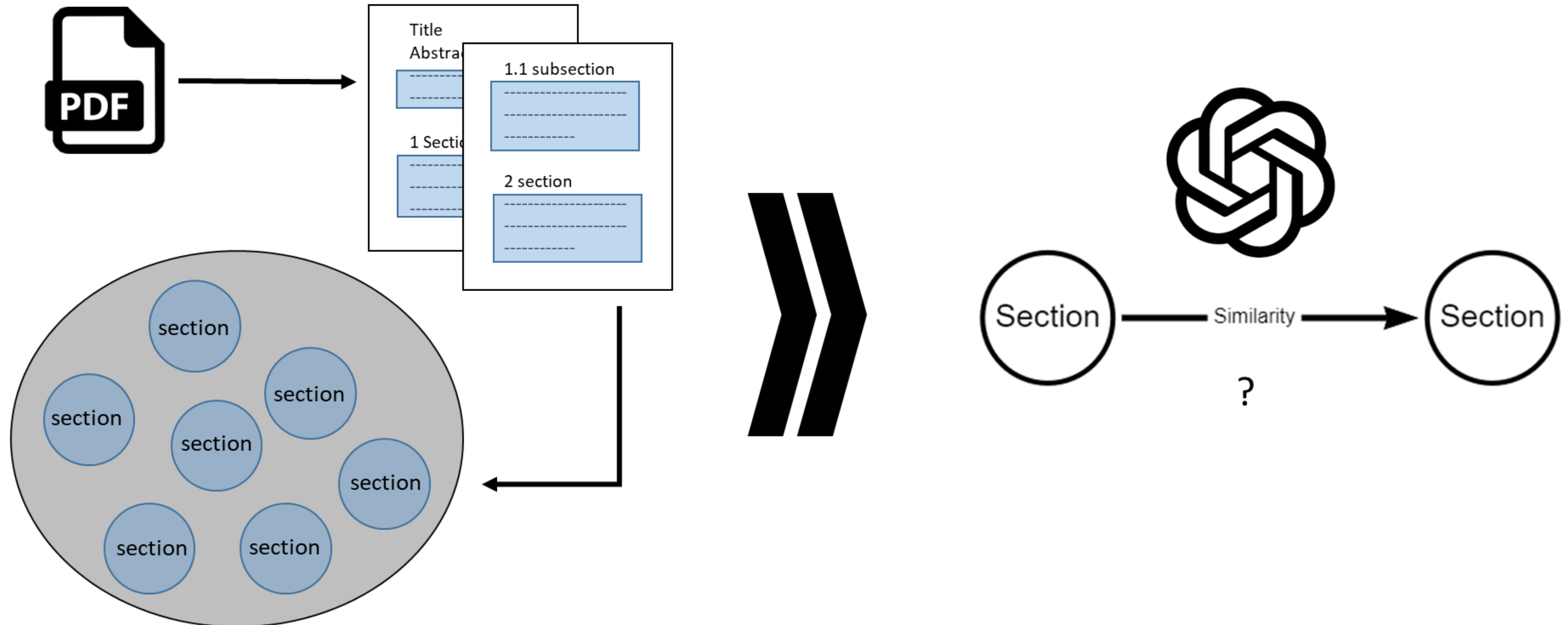
Keywords extraction

Inject it into the explanation

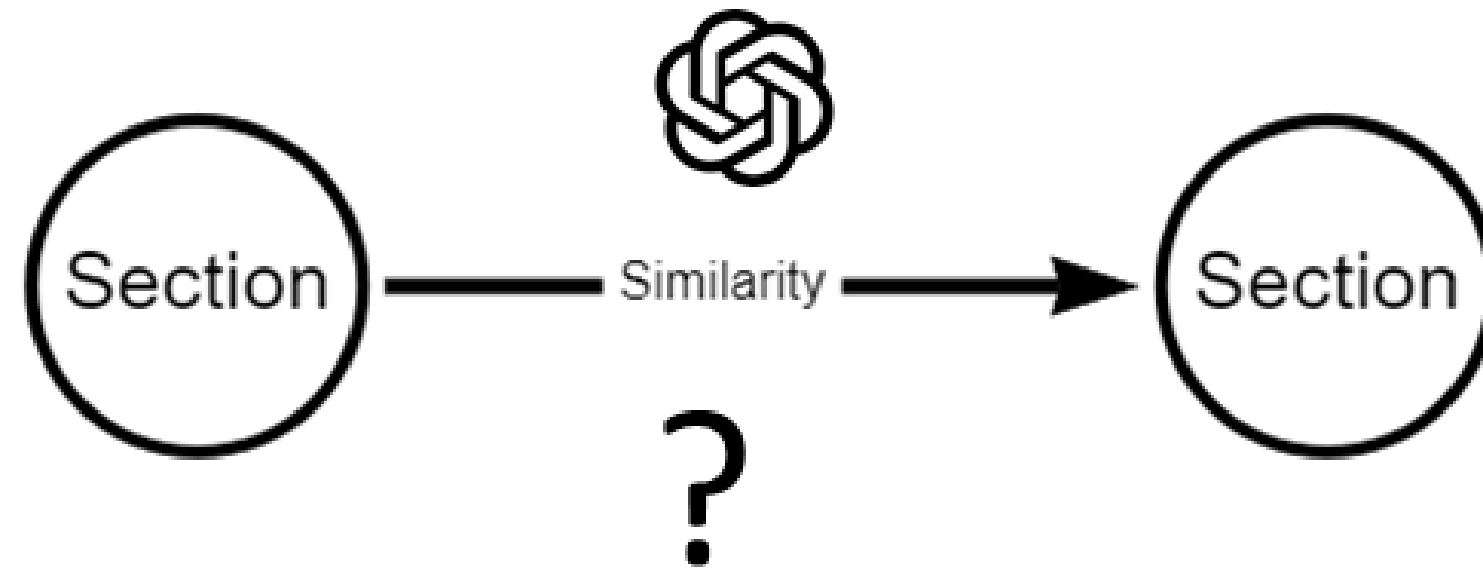
Generating Graph

Doc to Nodes

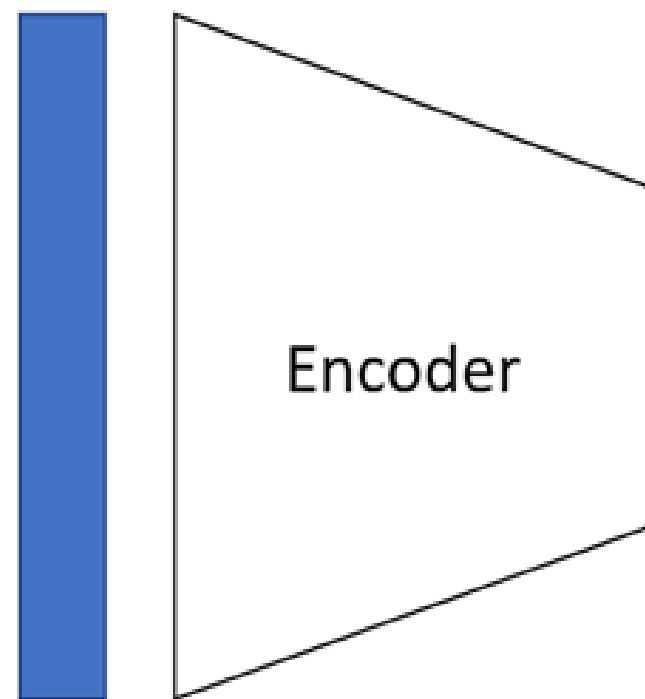
Define Edges



Similarity Measure



Original domain space



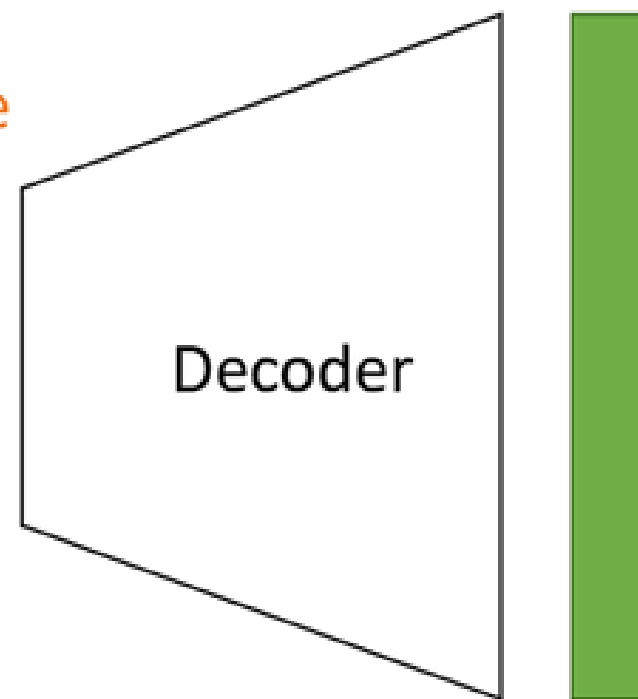
X

Latent Space



$Z = \text{encoder}(X)$

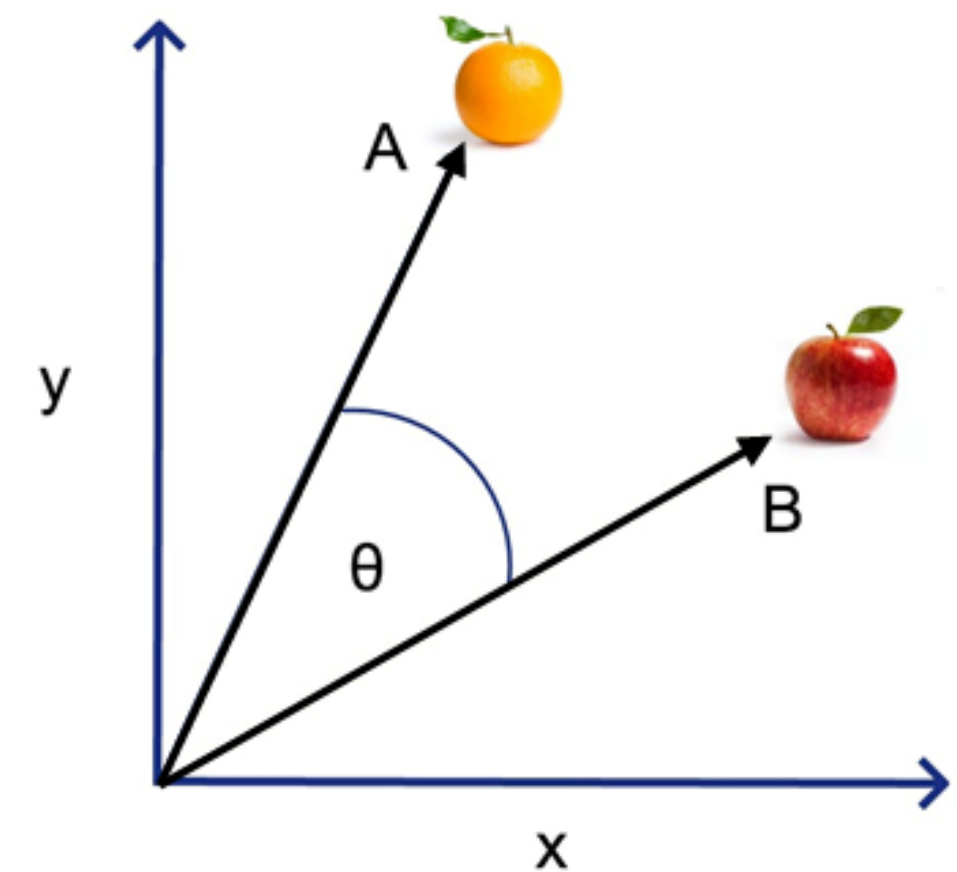
Original domain space



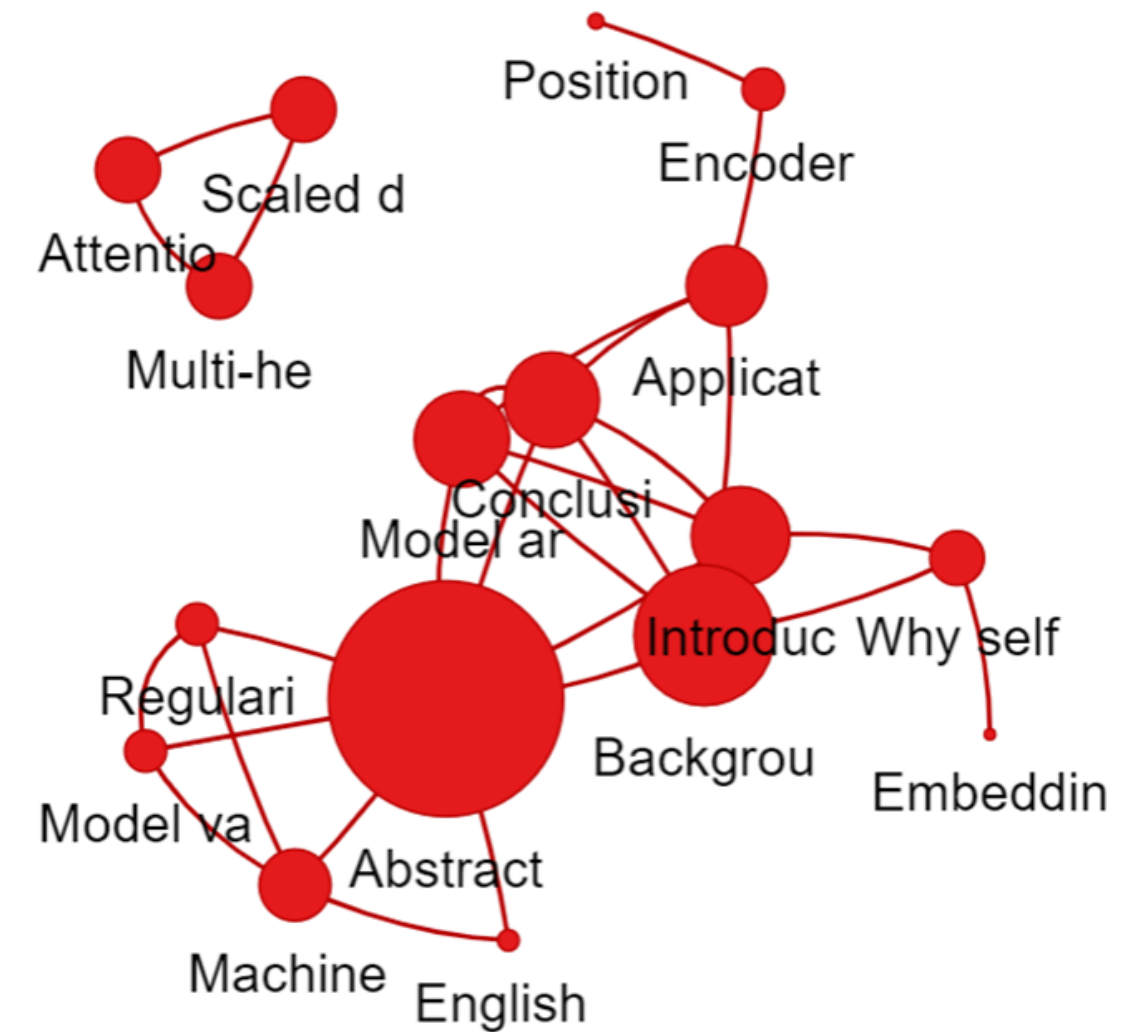
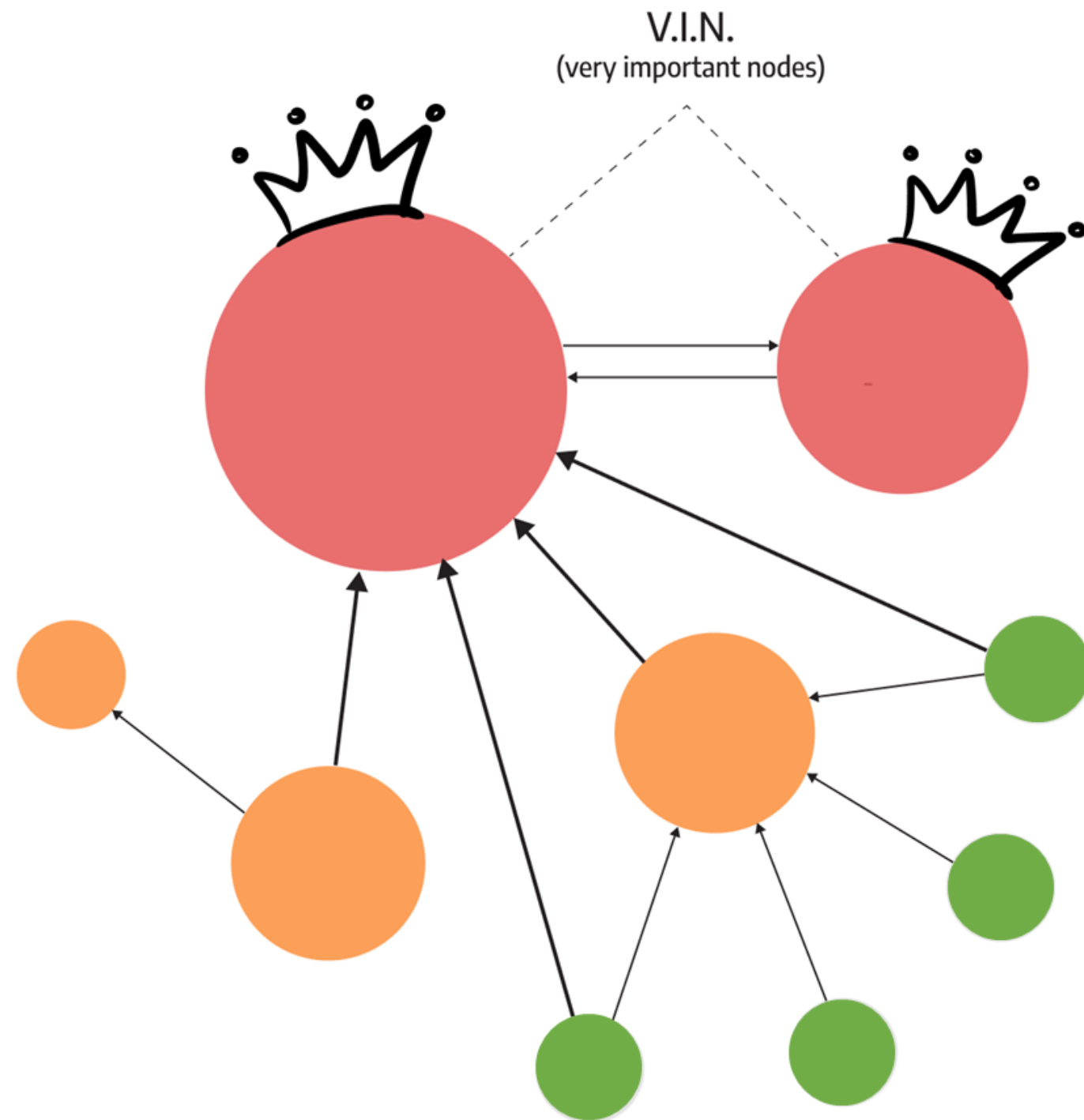
$\hat{X} = \text{decoder}(z)$

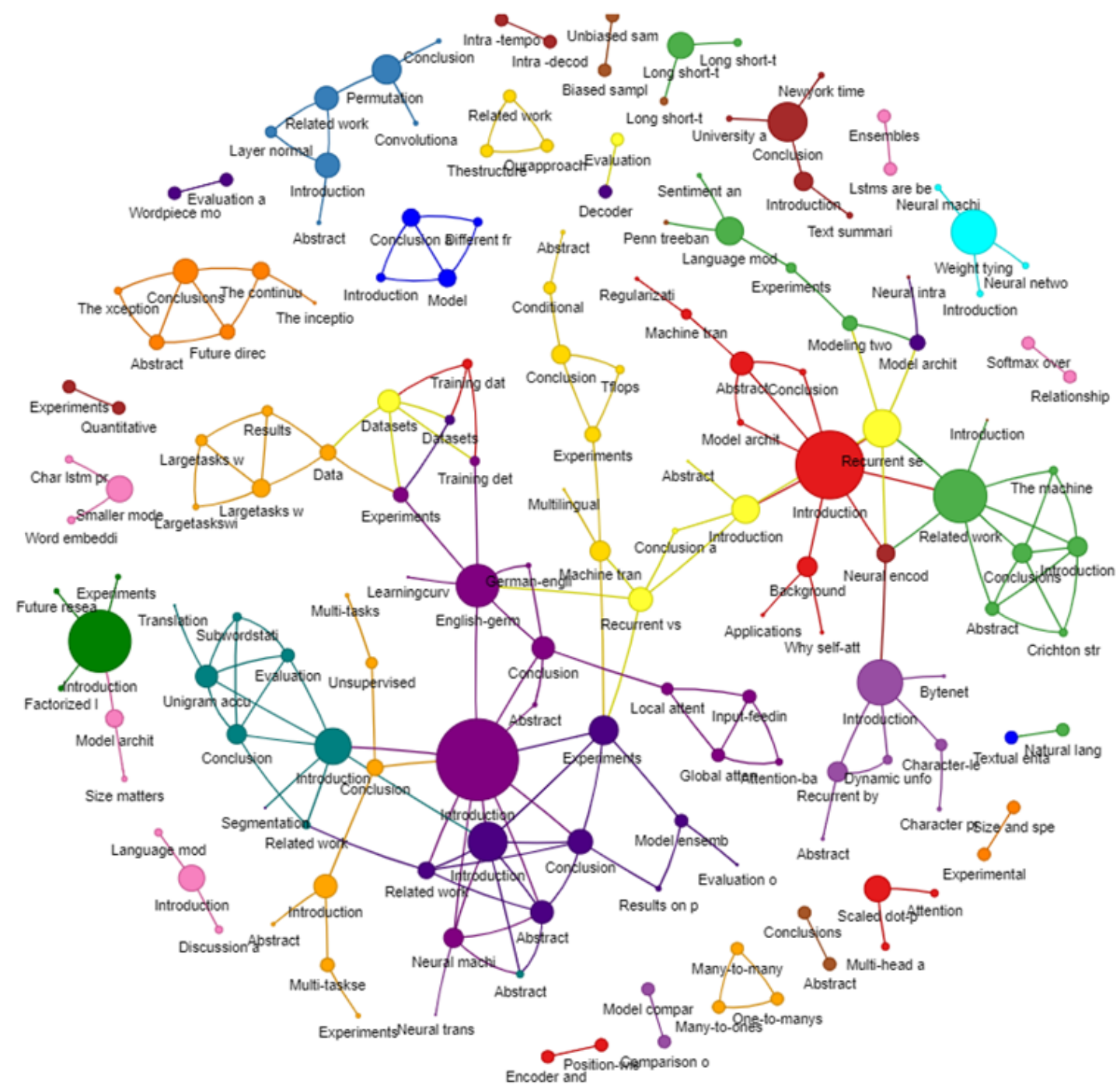
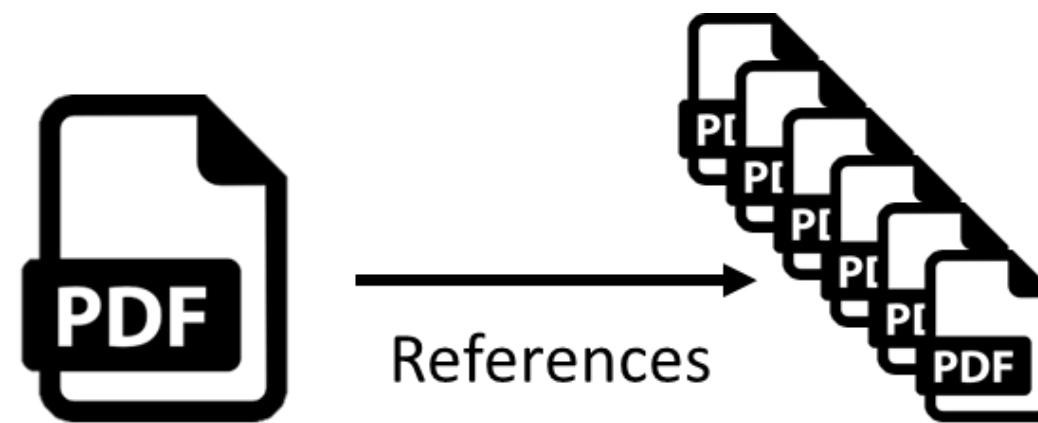
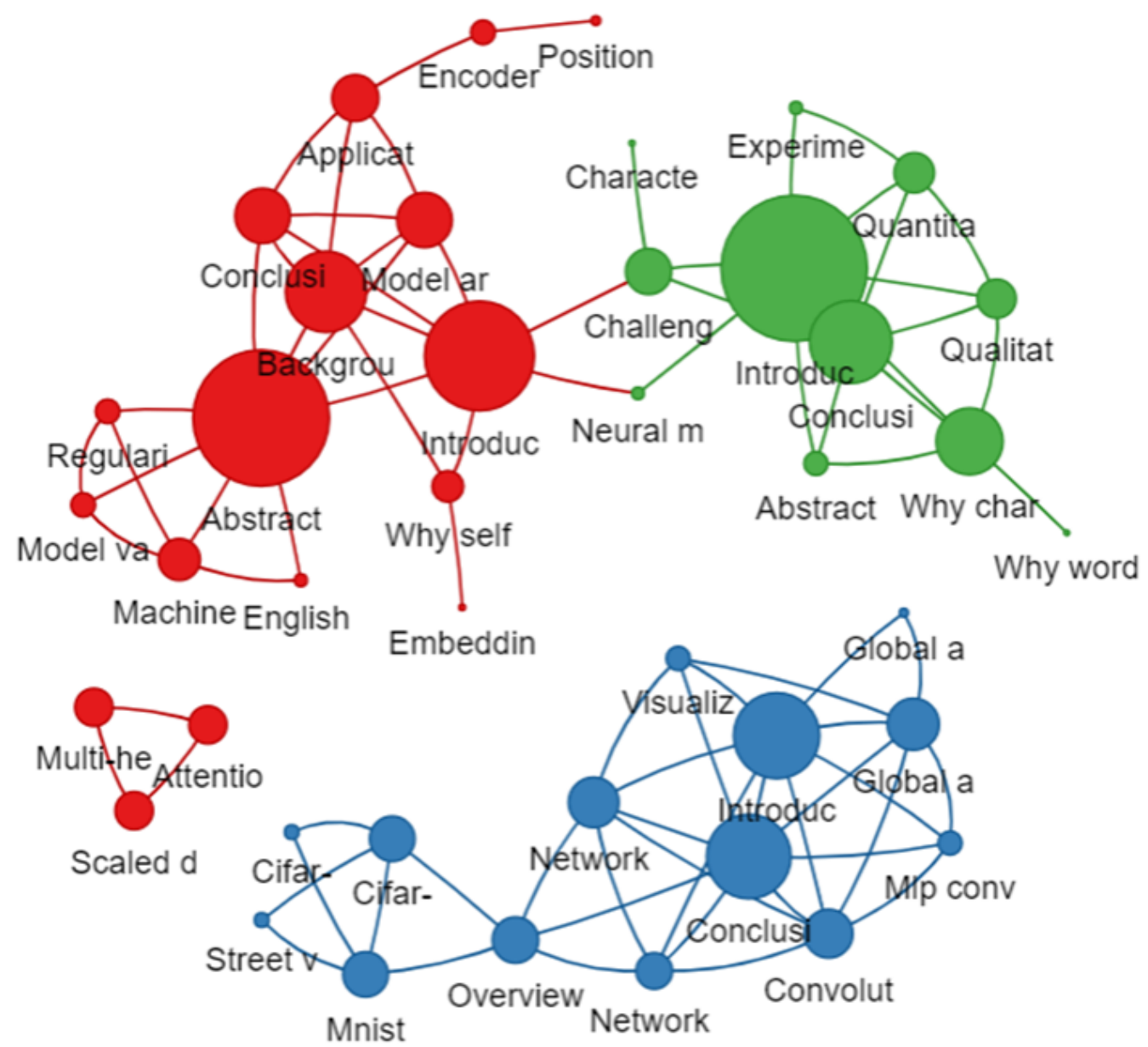
Cosine similarity

$$\text{Sim}(A, B) = \cos(\theta) = \frac{A \cdot B}{\|A\| \|B\|}$$

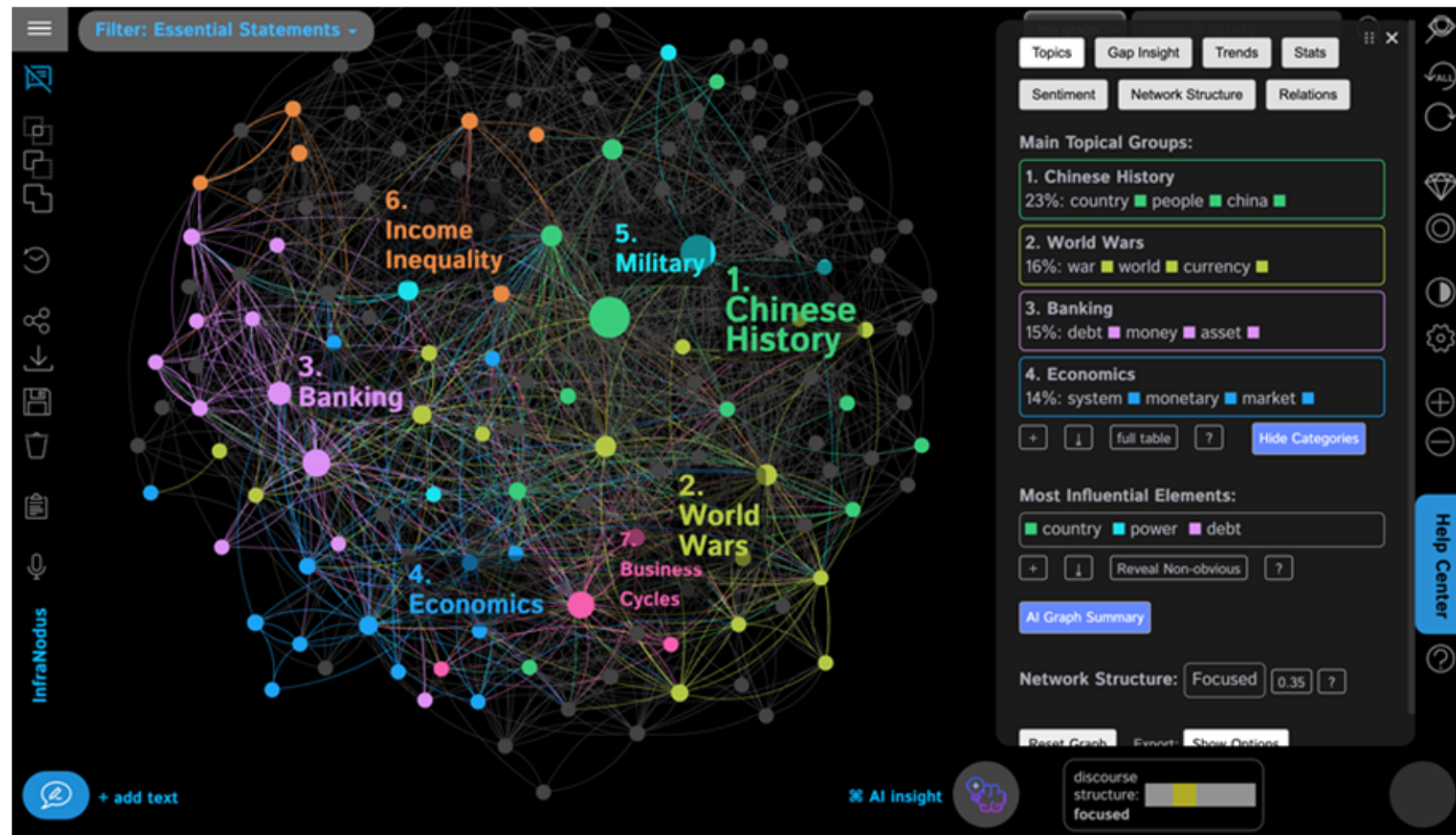
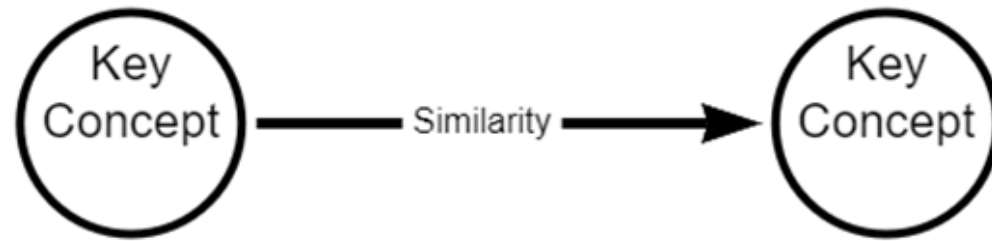


Page rank

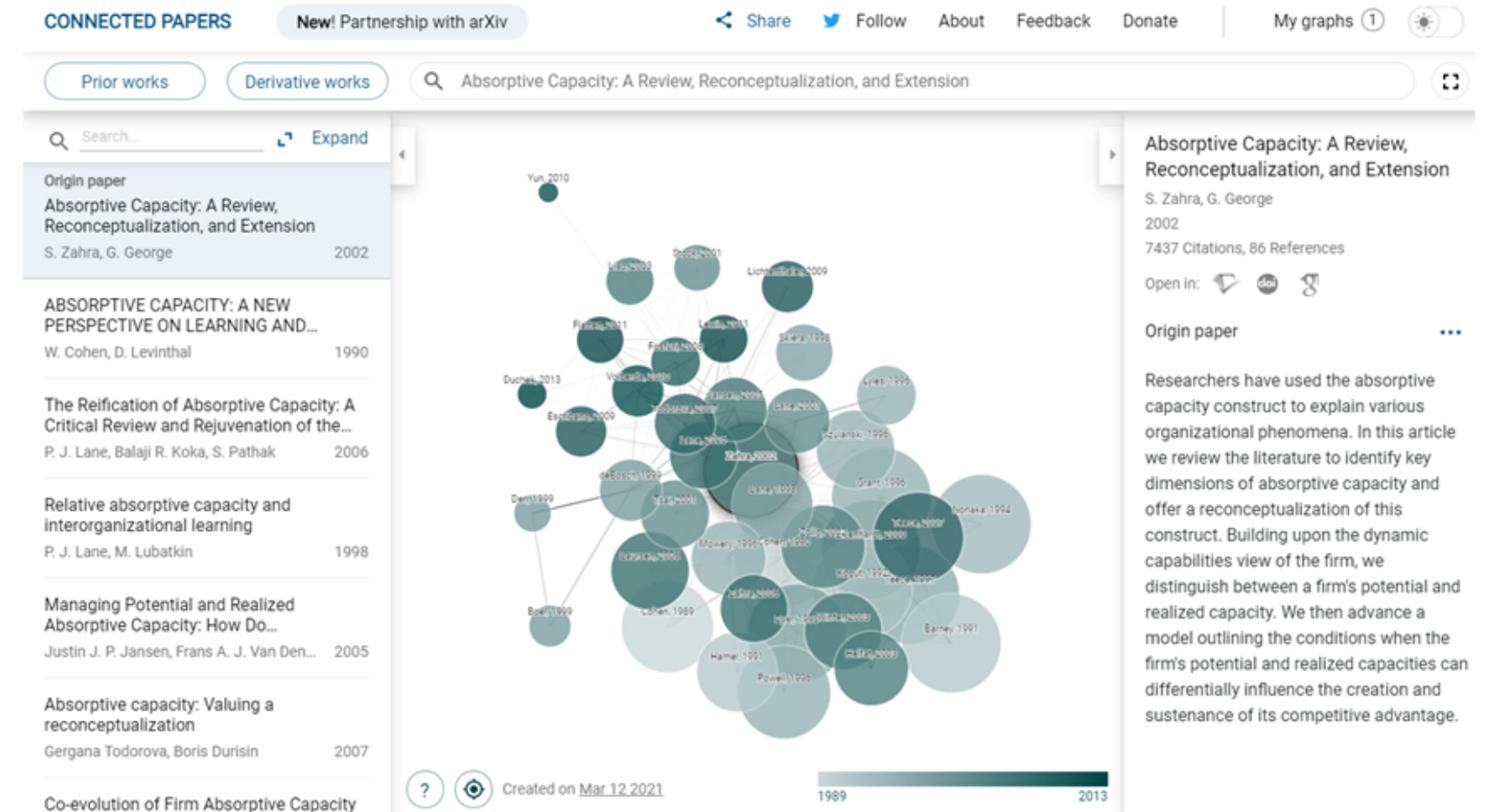
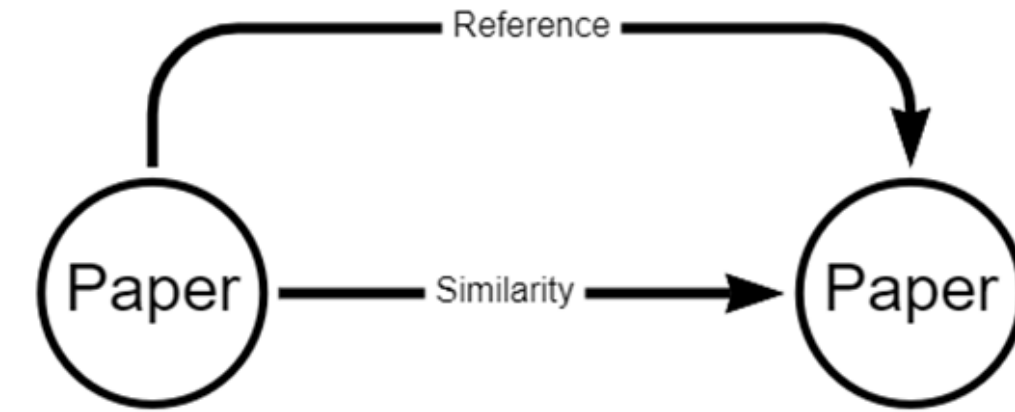




AI-Powered Visual Text Analysis



Connected Papers



What's next ?



- **More features (UI)**
 - **Learned keyword**
 - **Study-path recommendation**
 - **Scientific-writing recommendation**
- **Improve keyword explanation**
- **Scalability**
- **Robustness**
- **Extend Pdf extraction**
 - **images**
 - **tables**
- **Extend to more than arXiv papers and include book**

Contact Information

Anahita Pakiman



p.anahita@gmail.com

Jonathan Abadie



j.abadie.dev@gmail.com