

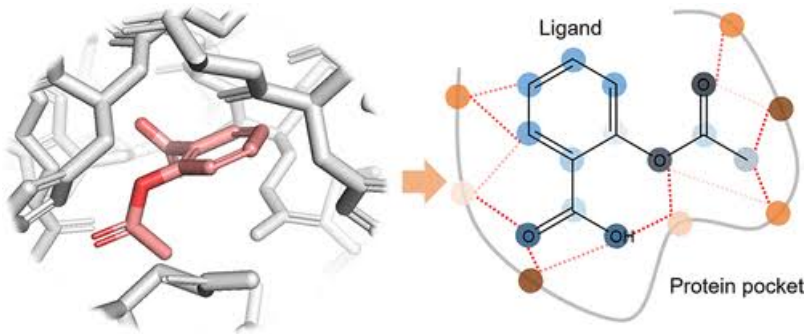
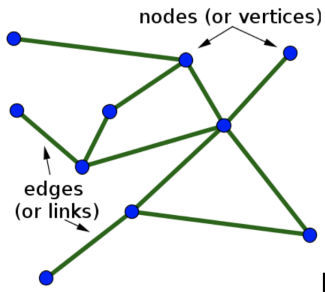
Generate the next few frames in a video using graph neural networks.

Shivam Raj
Shrishti Barethiya

22 October 2021

Goal

- To predict the next few frames of the video using a Graph Neural Network for spatio-temporal graphs.
- To know about the nodes a few frames later.



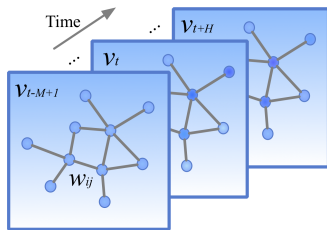
How to proceed?

- An image can represent as graphs by dividing the image into regions and the neighboring regions, which are interconnected.
- The video consists of multiple frames. Using the above methods, the frame can convert into a graph.
- The multiple frames add the temporal aspect to the graph. Hence, the graph generated from the number of frames is a Spatio-Temporal graph.

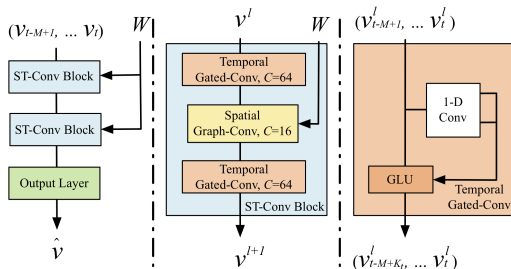
- Since there are a large amount of video data is available, so Video summarizing condenses the original video into a summary while preserving the main content.
- Lots of videos summarizing approaches have been propose but, fully convolution structure on time axis approach have gained significantly.
- Forecasting traffic speed, volume, or density of roads in traffic networks is fundamentally important in a smart transportation system. We can address the traffic prediction problem by using STGNNs.

- ① Bing Yu, Haoteng Yin, Zhanxing Zhu. Spatio -Temporal Graph Convolutional Networks: A Deep Learning Framework for Traffic Forecasting. 10.24963/ijcai.2018/505.
- ② Bin Zhao, Haopeng Li, Xiaoqiang Lu, Xuelong Li. Reconstructive Sequence-Graph Network for Video Summarization. 10.1109/TPAMI.2021.3072117.
- ③ Rucha Bhalchandra Joshi, Subhankar Mishra. Learning Graph Representations.

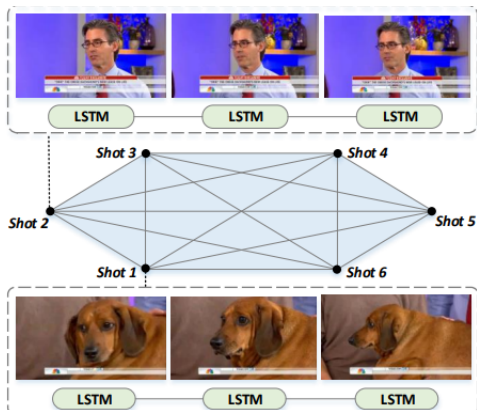
Spatio-Temporal Graph Convolutional Networks: A Deep Learning Framework for Traffic Forecasting¹.



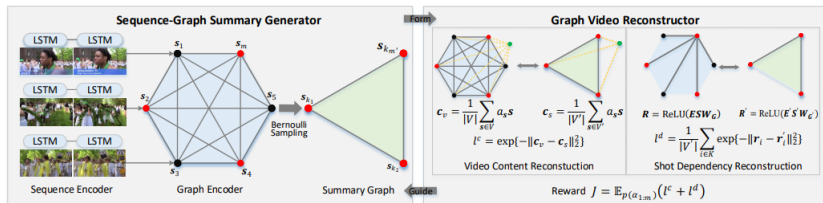
Spatio-Temporal Graph Convolutional Networks: A Deep Learning Framework for Traffic Forecasting¹.



Reconstructive Sequence-Graph Network for Video Summarization².



Reconstructive Sequence-Graph Network for Video Summarization².



Thank You.