LVC 3 - Glossary of Notations

Transfer Learning:

X = Input Vector

$f(x)$ = The part of the neural network that we don't want to train during Transfer Learning

Z = Encoding of the input vector X when it passes the function $f(x)$

$h_{pre}(z)$ = The classifier part of the neural network trained on the **pretext task.** We re-train this during Transfer Learning

$h(z)$ = The classifier part of the neural network trained on the **target task**

m = The size of the dataset for the pretext task

n = The size of the dataset for the target task

W = Output of the original architecture

Y = Output of the Transfer Learning architecture

x = Original image or anchor

x^+ = Positive sample: derived from the anchor image x

x^- = Negative sample: not derived from the anchor image x

$f(x^+)$ = Embedding function applied on positive sample

$f(x^-)$ = Embedding function applied on negative sample

p_x^+ = Probability that the sample is a positive sample

p_x^- = Probability that the sample is a negative sample

Graph Neural Networks:

h_u = The feature description / node embedding of node u

$h_u^{(k-1)}$ = The feature description / node embedding of node u in round $k-1$

$N(v)$ = Neighboring nodes of node v

$m_{N(v)}^{(k)}$ = Messages passed to node v from all it's neighbors, i.e., $N(v)$ in round k

$h_v^{(k)}$ = The feature description / node embedding of node v in round k

MLP = Multi Layer Perceptron to perform aggregation

MLP_Θ = MLP used to learn features of each embedding

MLP_ϕ = MLP used to learn features from the output of adding features of individual embeddings

W_{self} = Weight corresponding to the current node while updating the feature description

W_{neigh} = Weight corresponding to neighboring nodes while updating the feature description

b = The bias term