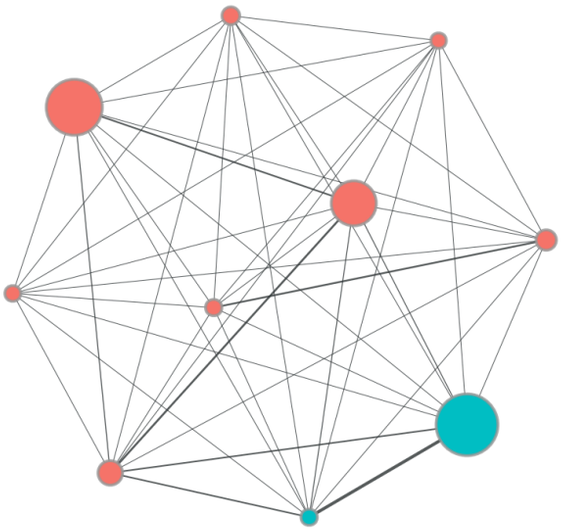
Non Euclidian



X(amt) y(is_fraud) Weigt matrix

$$\begin{bmatrix} X_1 \\ X_2 \\ X_3 \\ X_4 \\ X_5 \\ \vdots \\ X_n \end{bmatrix} \quad \begin{bmatrix} y_1 \\ y_2 \\ y_3 \\ y_4 \\ y_5 \\ \vdots \\ y_n \end{bmatrix} \quad \begin{bmatrix} \mathbf{W}_1 & 0 & 0 & \dots & 0 \\ 0 & \mathbf{W}_2 & 0 & \dots & 0 \\ 0 & 0 & \mathbf{W}_3 & \dots & 0 \\ \dots & \dots & \dots & \dots & \dots \\ 0 & 0 & 0 & \dots & \mathbf{W}_{|\mathcal{I}|} \end{bmatrix}$$

Convolution (1×16)

Dropout **Relu**

Convolution (16×8)

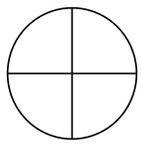
Relu

Linear (8×2)

Softmax

Euclidian

$$\begin{bmatrix} X_{11} & X_{12} & \cdots & X_{1p} \\ X_{21} & X_{12} & \cdots & X_{2p} \\ \vdots & & & \vdots \\ X_{n1} & X_{n2} & \cdots & X_{np} \end{bmatrix}$$



Concat

$$\begin{bmatrix} H_{10} & H_{11} & \cdots & H_{17} \\ H_{20} & H_{21} & \cdots & H_{27} \\ \vdots & & & \vdots \\ H_{n0} & H_{n1} & \cdots & H_{h7} \end{bmatrix}$$

- **NeuralNet**
- **RandomForest**
- **ExtraTree**
- **LightGBM**
- **CatBoost**
- **XGBoost**
- **Kneighbors**
- **...**