Graph Neural Networks on Amazon Dataset

- The final (product to product) graph dataset consists of Nodes: 17765, Edges: 136931.
- The graph data set contains two categories namely -> Industrial and Scientific, Software
- Some properties of the network are:
  - Density is -> 0.000433906
  - Average Degree is -> 15.4158176

Approaches finalised

1. HinSage - Easy to implement and also takes in account node features, no code available.

2. HetGNN (LSTM aggregator) - Takes in account the impacts of nodes on other node's embeddings, also considers heterogeneity among the node features. Code Available.

3. HERec - Has an algorithm specific for a rating predictor task. Uses embedding fusion to extract useful information from HINs. Code Available.

Limitations & Doubts

Irregularity of Amazon Dataset

Confusion on the node features to be kept

80/20 Nodes arrangement for HinSAGE.

Papers Analysed

HetGNN

HIN Embeddings

HinSAGE

GraphSAGE

Metapath-to-vec

Metapath-to-vec ++