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(54) Title: SYSTEM, METHOD, AND COMPUTER PROGRAM PRODUCT FOR ACTIVE LEARNING IN GRAPH NEURAL NETWORKS THROUGH HYBRID UNCERTAINTY REDUCTION

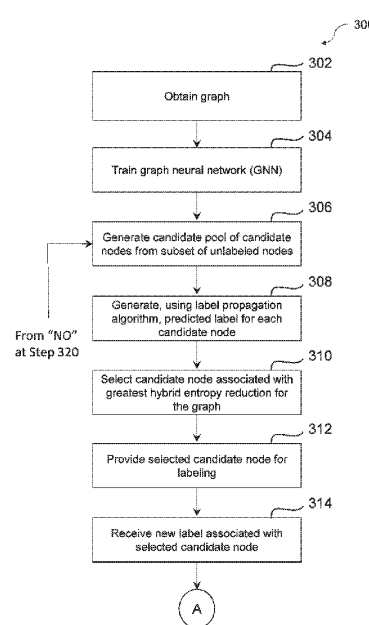


FIG. 3A

(57) Abstract: Systems, methods, and computer program products may (i) obtain a graph including a plurality of edges and a plurality of nodes for the plurality of edges, each labeled node of a subset of labeled nodes being associated with a label, and each unlabeled node of a subset of unlabeled nodes not being associated with a label; (ii) train, using the graph and the label for each labeled node, a graph neural network (GNN), wherein training the GNN generates a prediction for each node; (iii) generate, from the subset of unlabeled nodes, a candidate pool of candidate nodes; (iv) generate, using a label propagation algorithm, a predicted label for each candidate node; (v) select a candidate node of the candidate pool of candidate nodes that is associated with a greatest hybrid entropy reduction for the graph; and (vi) provide the selected candidate node for labeling.

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