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(54) Title: STRUCTURED GRAPH CONVOLUTIONAL NETWORKS WITH STOCHASTIC MASKS FOR NETWORK EMBEDDINGS

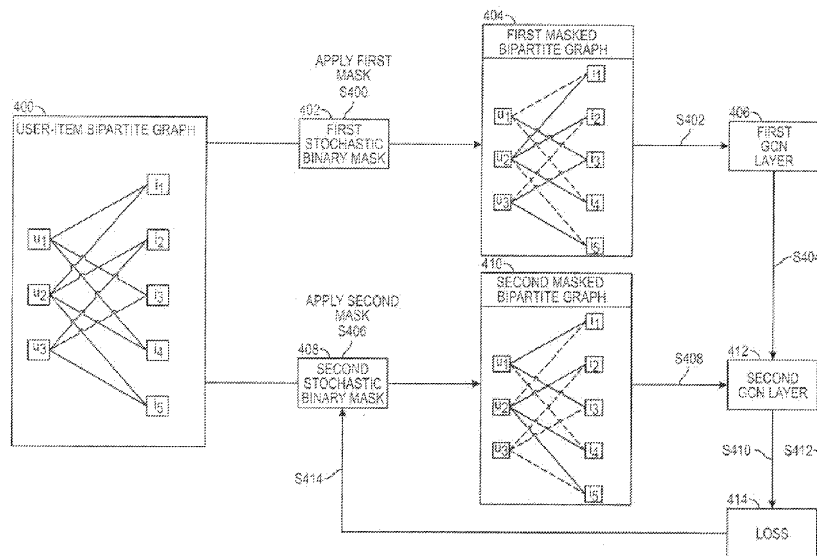


FIG.4

(57) Abstract: A method includes receiving a first data set comprising embeddings of first and second types, generating a fixed adjacency matrix from the first dataset, and applying a first stochastic binary mask to the fixed adjacency matrix to obtain a first subgraph of the fixed adjacency matrix. The method also includes processing the first subgraph through a first layer of a graph convolutional network (GCN) to obtain a first embedding matrix, and applying a second stochastic binary mask to the fixed adjacency matrix to obtain a second subgraph of the fixed adjacency matrix. The method includes processing the first embedding matrix and the second subgraph through a second layer of the GCN to obtain a second embedding matrix, and then determining a plurality of gradients of a loss function, and modifying the first stochastic binary mask and the second stochastic binary mask using at least one of the plurality of gradients.

[Continued on next page]

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