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(54) Title: METHOD, SYSTEM, AND COMPUTER PROGRAM PRODUCT FOR PRETRAINED DUAL TRANSFORMERS FOR BIPARTITE GRAPHS

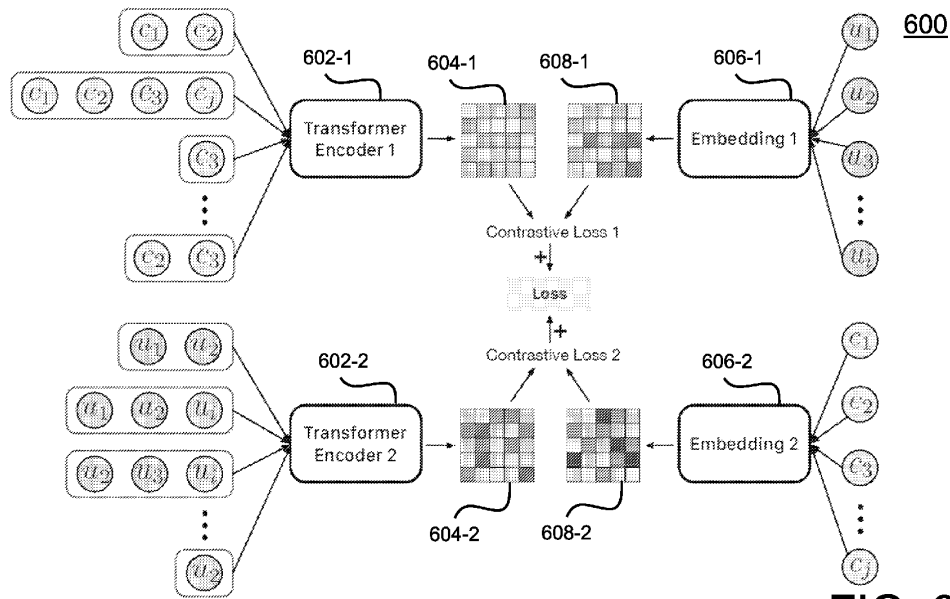


FIG. 6

(57) Abstract: Methods, systems, and computer program products are provided for pretrained dual transformers for bipartite graphs. Graph data of a bipartite graph including first nodes/entities, second nodes/entities, and edges is received. A first entity context of each first entity includes second entities connected thereto by the edge(s). A second entity context of each second entity/node comprises first entities connected thereto the edge(s). First embeddings for each first entity are generated. First encoded representations for each first entity are generated based on the first entity context and a first transformer encoder. Second embeddings for each second entity are generated. Second encoded representations for each second entity are generated based on the second entity context and a second transformer encoder. The first embeddings and the first transformer encoder are adjusted based on a first contrastive loss. The second embeddings and the second transformer encoder are adjusted based on a second contrastive loss.

[Continued on next page]

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