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(54) **Title:** APPLICATION OF REPRESENTATION LEARNING TO DISCRETE EVENT SEQUENCES ACROSS DISCRETE DOMAINS

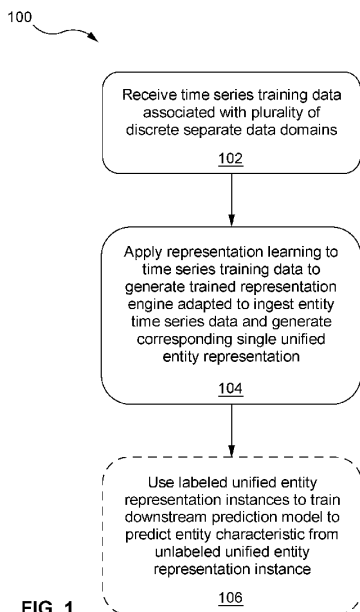


FIG. 1

(57) **Abstract:** A method for constructing an entity representation engine comprises receiving time series training data representing a plurality of discrete training event sequences. Each training event sequence is associated with one of a plurality of discrete separate data domains. The training event sequences are time-ordered sequences of sample interactions within the discrete separate data domains. Representation learning is applied to the time series training data to generate a trained representation engine that ingests entity time series data representing a plurality of discrete entity event sequences for a particular entity. Each entity event sequence is associated with one of the discrete separate data domains; the entity event sequences are time-ordered sequences of entity interactions for that entity within the respective discrete separate data domains. From the entity time series data, the representation engine generates a single unified entity representation characterizing a distribution of the entity interactions within the discrete separate data domains.

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