

METHOD AND SYSTEM FOR ENERGY MANAGEMENT BY ENERGY USAGE IDENTIFICATION AND VISUALIZATION

ABSTRACT

[0049] Systems and methods for identification and visualization of energy usage are provided. In accordance with one aspect, a method for training an energy usage identification system includes dividing a measurement log of aggregate energy usage data into a plurality of training samples, each of the plurality of training samples comprising energy data sequences. The method further includes constructing a set of multiple neural network models, extracting a mini-batch of samples and a test sample from the plurality of training samples, and simultaneously training each of the set of multiple neural network models with the mini-batch of samples to derive inferred load-based energy usage data of one or more of a plurality of loads. In addition, the method includes determining an accuracy of the inferred load-based energy usage data for each of the multiple neural network models in response to the test sample, and eliminating from the set of multiple neural network models ones of the set of multiple neural network models exhibiting one or more of a set of poor result criteria. Finally, the method includes repeating simultaneously training of remaining ones of the set of multiple neural network models until an optimal one of the set of multiple neural network models for inferred load-based energy management is identified in response to determining whether or not an accuracy target difference between actual load-based energy usage data and the inferred load-based energy usage data generated by one of the multiple neural networks using the test sample is met.

FIG. 7B