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(54) Title: ADVERSARIAL SEMI-SUPERVISED ONE-SHOT LEARNING

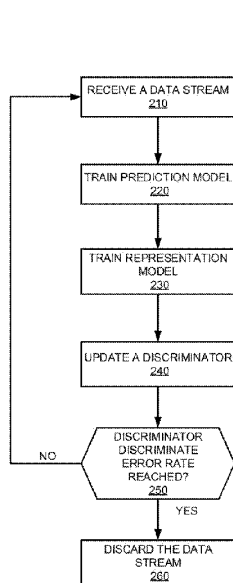


FIG. 2

(57) Abstract: A method, a computer program product, and a system of adversarial semi-supervised one-shot training using a data stream. The method includes receiving a data stream based on an observation, wherein the data stream includes unlabeled data and labeled data. The method also includes training a prediction model with the labeled data using stochastic gradient descent based on a classification loss and an adversarial term and training a representation model with the labeled data and the unlabeled data based on a reconstruction loss and the adversarial term. The adversarial term is a cross-entropy between the middle layer output data from the models. The classification loss is a cross-entropy between the labeled data and an output from the prediction model. The method further includes updating a discriminator with middle layer output data from the prediction model and the representation model and based on a discrimination loss, and discarding the data stream.

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