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(54) Title: METHOD AND SYSTEM FOR FEDERATED LEARNING

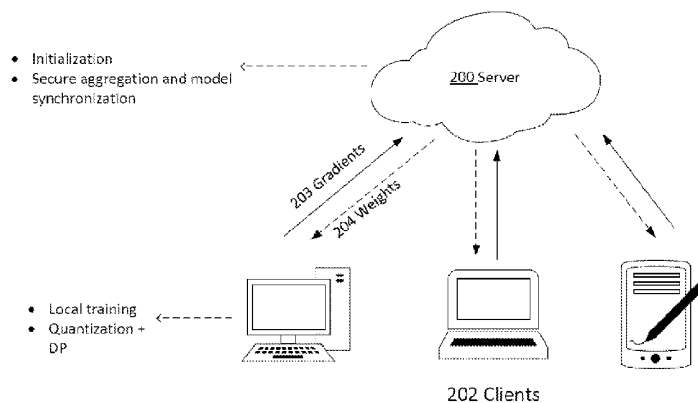


FIG. 2

(57) Abstract: Methods, systems, and apparatuses, including computer programs encoded on computer storage media, for federal learning with differentially private (DP) intrinsic quantization are disclosed. One exemplary method may include obtaining a parameter vector of a local model; updating the parameter vector of the local model by adding a plurality of noise vectors to the parameter vector of the local model; performing quantization to the updated parameter vector to obtain a quantized parameter vector, wherein the quantization maps coordinates in the updated parameter vector to a set of discrete finite values; and transmitting, to a server, the quantized parameter vector and at least one of the plurality of noise vectors for the server to update a global model.

[Continued on next page]

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