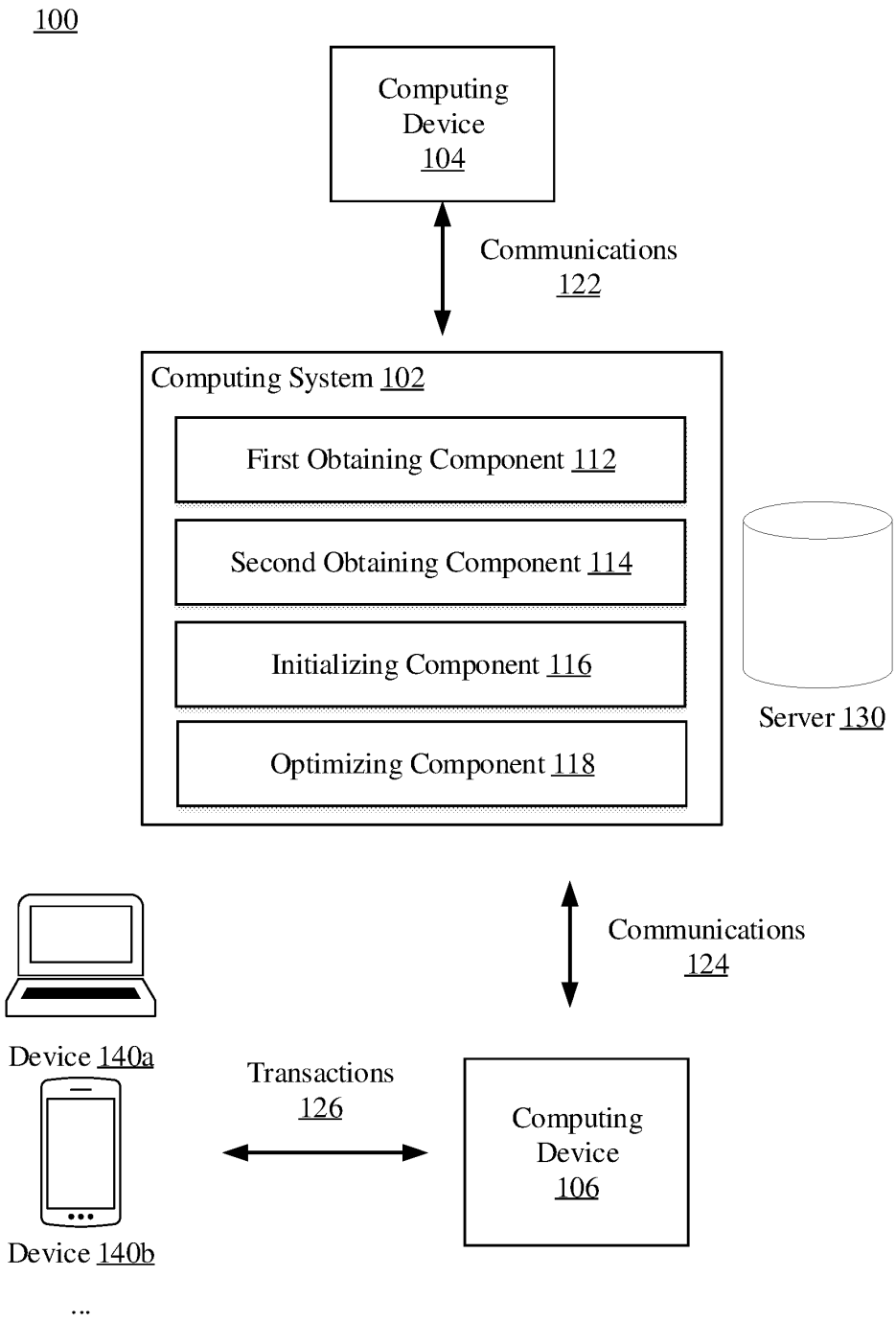
100
Computing Device 104
Communications 122
Computing System 102
First Obtaining Component 112
Second Obtaining Component 114
Initializing Component 116
Optimizing Component 118
Server 130
Communications 124
Device 140a
Transactions 126
Computing Device 106
Device 140b
...

FIG. 1

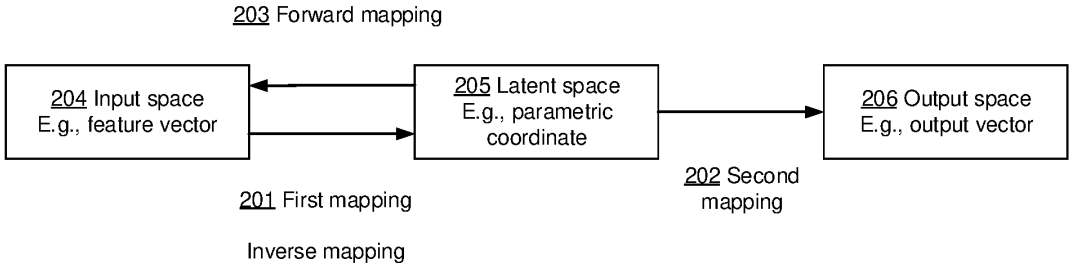
203 Forward mapping
204 Input space
E.g., feature vector
205 Latent space
E.g., parametric
coordinate
206 Output space
E.g., output vector
202 Second
mapping
201 First mapping
Inverse mapping

FIG. 2A

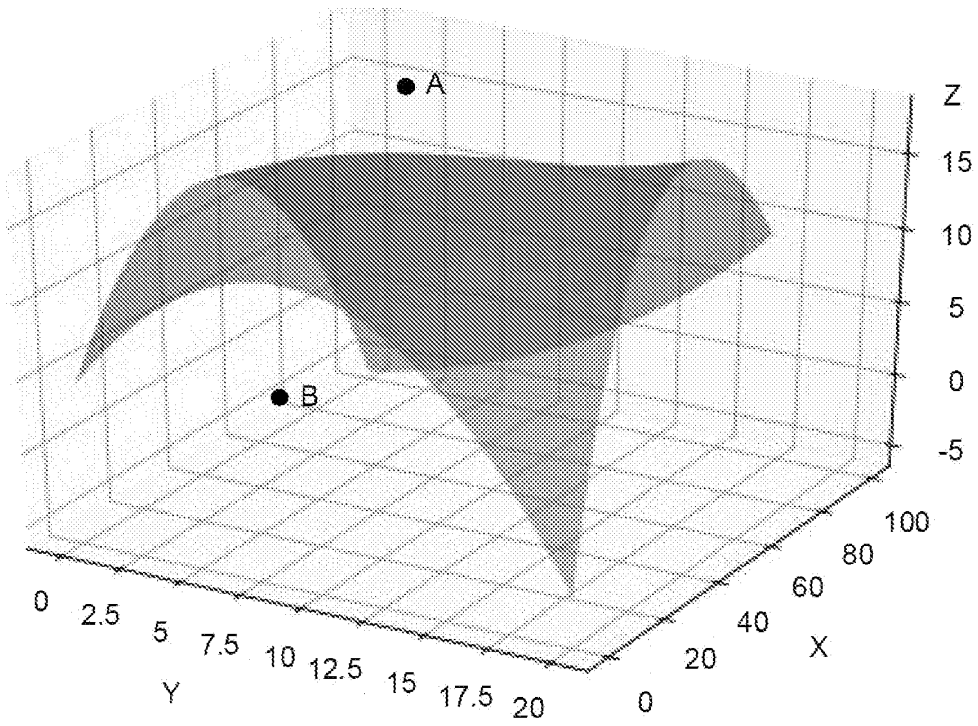
A
B
Z
15
10
5
0
-5
100
80
60
40
20
0
X
0
2.5
5
7.5
10
12.5
15
17.5
20
Y

FIG. 2B

300

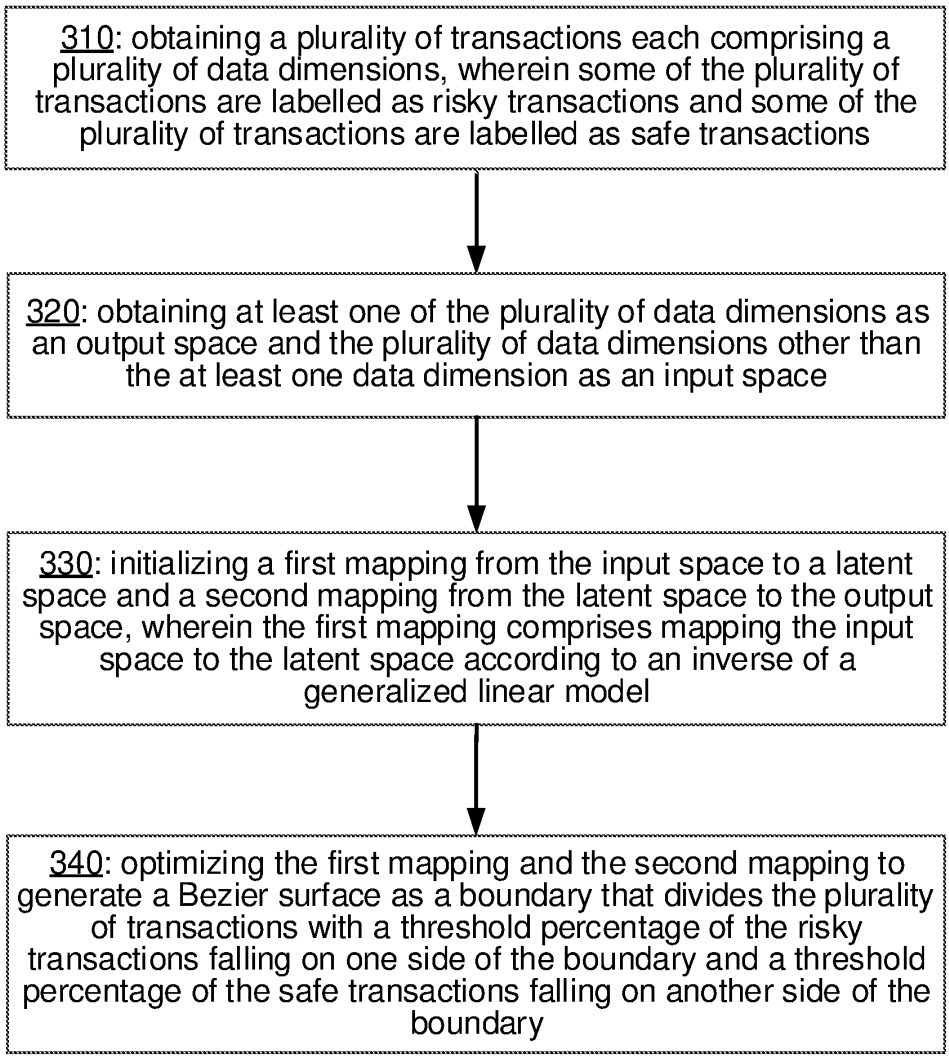
310: obtaining a plurality of transactions each comprising a plurality of data dimensions, wherein some of the plurality of transactions are labelled as risky transactions and some of the plurality of transactions are labelled as safe transactions
320: obtaining at least one of the plurality of data dimensions as an output space and the plurality of data dimensions other than the at least one data dimension as an input space
330: initializing a first mapping from the input space to a latent space and a second mapping from the latent space to the output space, wherein the first mapping comprises mapping the input space to the latent space according to an inverse of a generalized linear model
340: optimizing the first mapping and the second mapping to generate a Bezier surface as a boundary that divides the plurality of transactions with a threshold percentage of the risky transactions falling on one side of the boundary and a threshold percentage of the safe transactions falling on another side of the boundary

FIG. 3

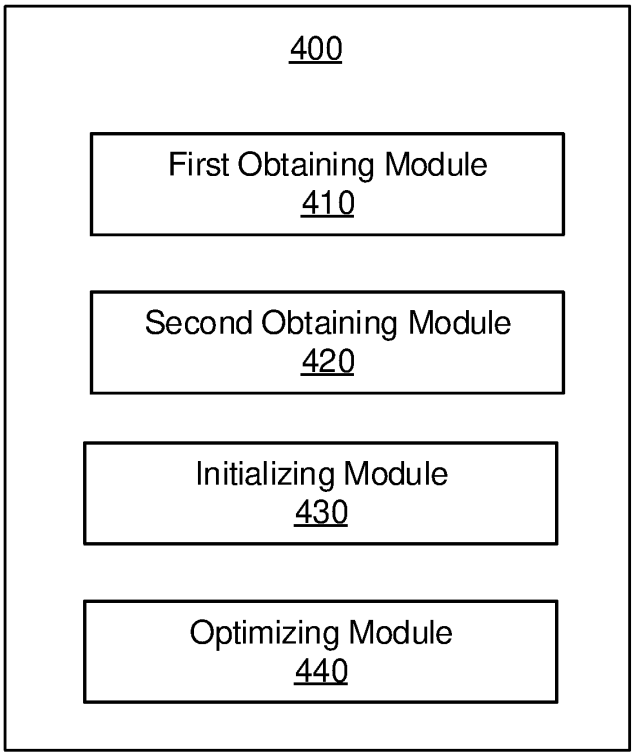
400
First Obtaining Module
410
Second Obtaining Module
420
Initializing Module
430
Optimizing Module
440

FIG. 4

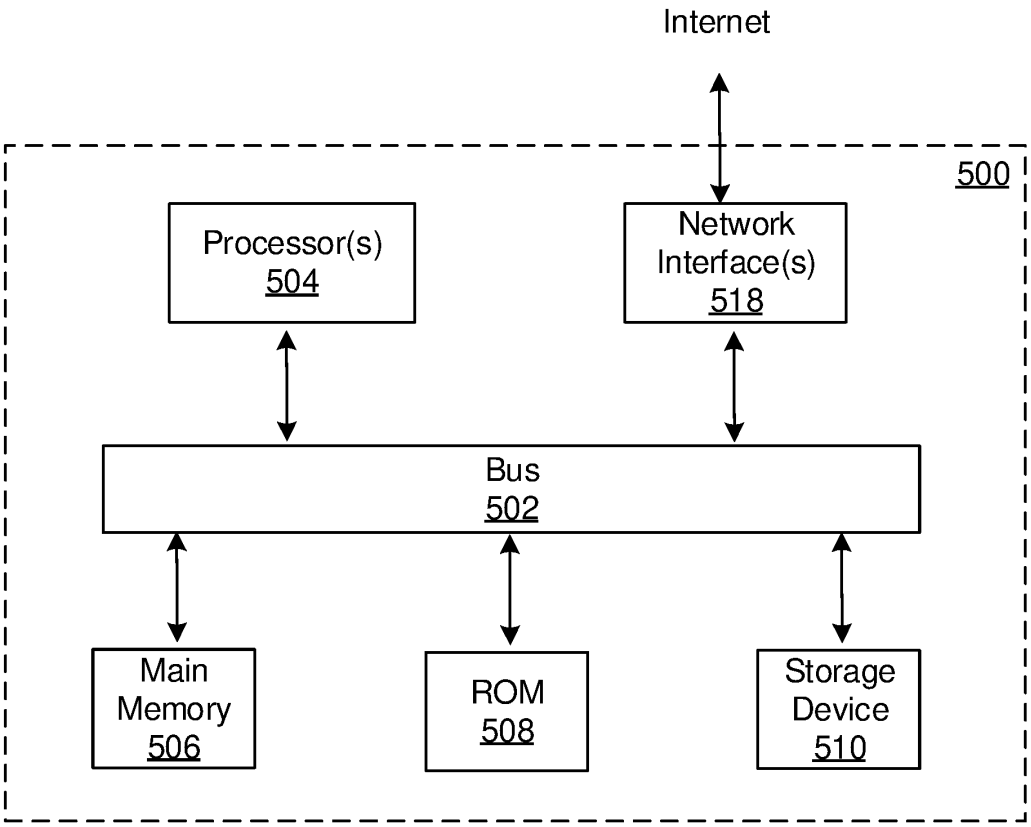
Internet
500
Processor(s)
504
Network
Interface(s)
518
Bus
502
Main
Memory
506
ROM
508
Storage
Device
510

FIG. 5