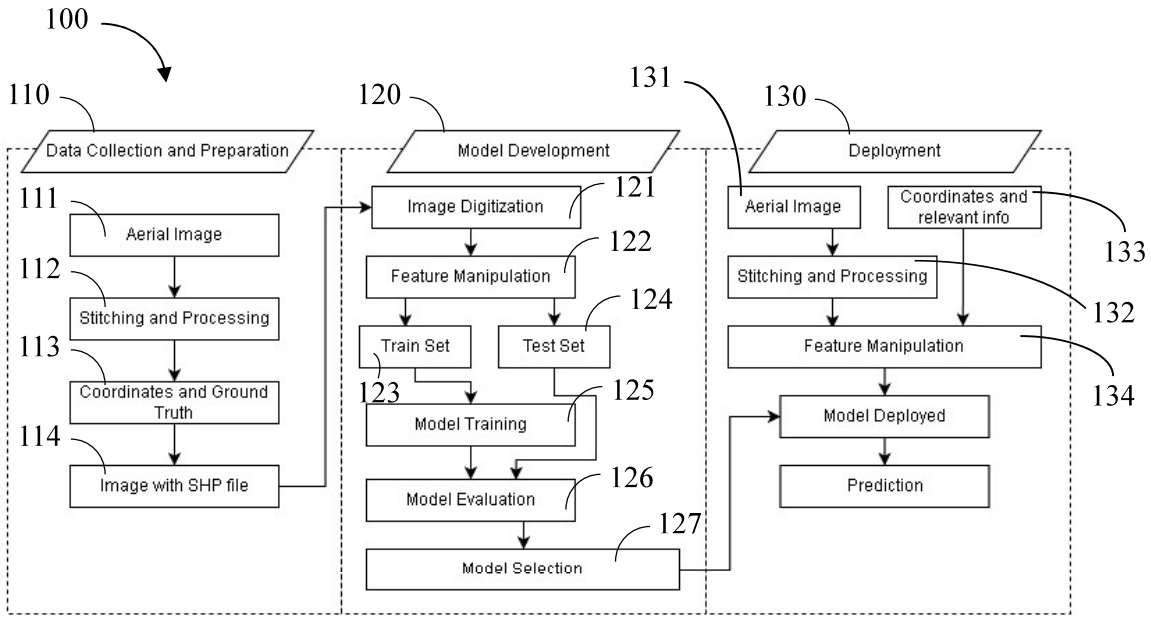

100
110
Data Collection and Preparation
111
Aerial Image
112
Stitching and Processing
113
Coordinates and Ground Truth
114
Image with SHP file
120
Model Development
121
Image Digitization
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Feature Manipulation
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Model Selection
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130
Deployment
Aerial Image
Coordinates and relevant info
133
Stitching and Processing
132
Feature Manipulation
134
Model Deployed
Prediction

Figure 1

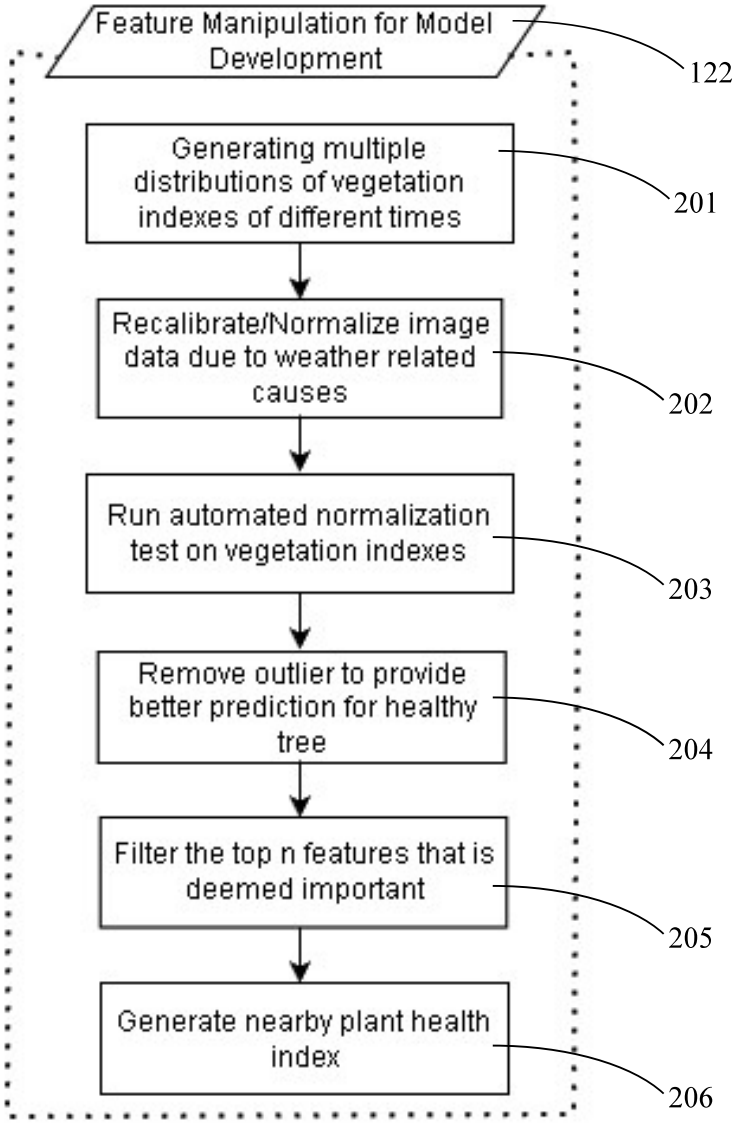

Feature Manipulation for Model Development
122
Generating multiple distributions of vegetation indexes of different times
201
Recalibrate/Normalize image data due to weather related causes
202
Run automated normalization test on vegetation indexes
203
Remove outlier to provide better prediction for healthy tree
204
Filter the top n features that is deemed important
205
Generate nearby plant health index
206

Figure 2

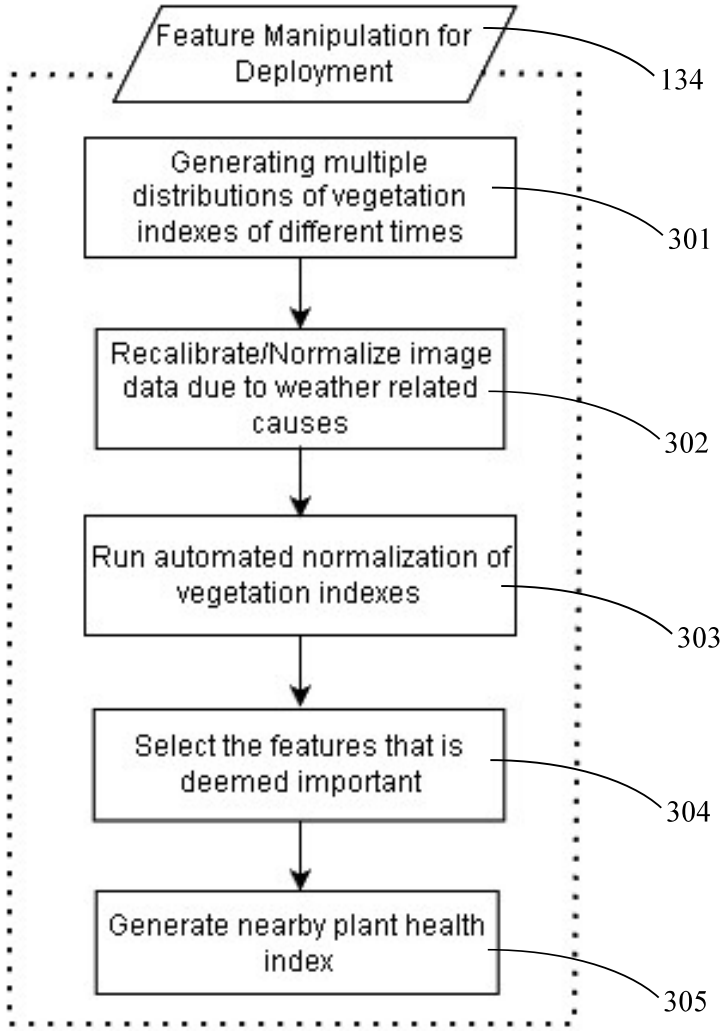

Feature Manipulation for Deployment
134
Generating multiple distributions of vegetation indexes of different times
301
Recalibrate/Normalize image data due to weather related causes
302
Run automated normalization of vegetation indexes
303
Select the features that is deemed important
304
Generate nearby plant health index
305

Figure 3

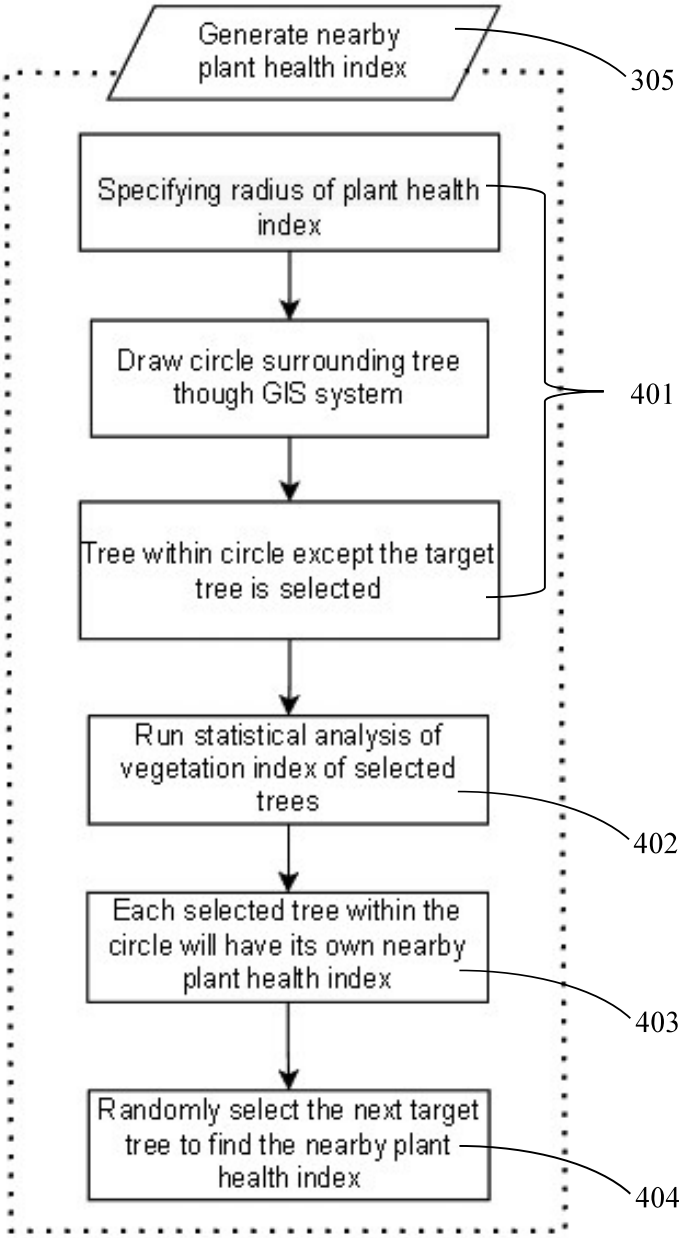

Generate nearby plant health index
305
Specifying radius of plant health index
Draw circle surrounding tree though GIS system
Tree within circle except the target tree is selected
401
Run statistical analysis of vegetation index of selected trees
402
Each selected tree within the circle will have its own nearby plant health index
403
Randomly select the next target tree to find the nearby plant health index
404

Figure 4

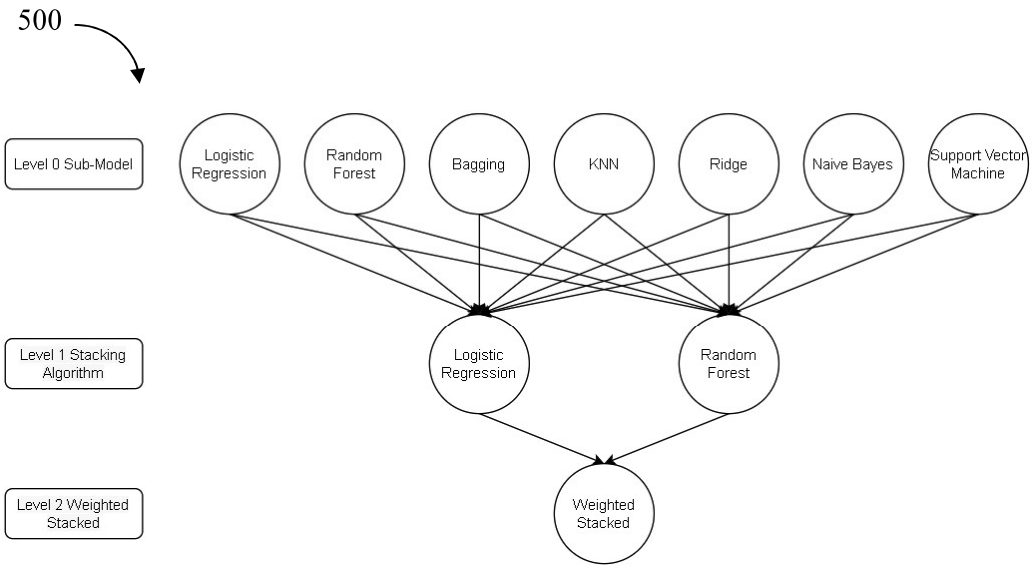

500
Level 0 Sub-Model
Logistic Regression
Random Forest
Bagging
KNN
Ridge
Naive Bayes
Support Vector Machine
Level 1 Stacking Algorithm
Logistic Regression
Random Forest
Level 2 Weighted Stacked
Weighted Stacked

Figure 5