```r
1  #################################################################################################
2  # Loading basic libraries:
3  library(xgboost)
4
5  # Load the trained XGB model from desktop:
6  XGB_for_mPAP_prediction <- xgb.load("~/Desktop/XGB_for_future_mPAP_prediction_V2")
7
8  # mPAP prediction in future patients - firstly create a new data matrix with the respective individual echocardiographic parameters:
9  new_patient <- data.frame(
10    LVEF_pre = 45,                  # left ventricular ejection fraction in %
11    LVESD = 35,                     # left ventricular end-systolic diameter in mm
12    LA_area = 30,                   # left atrial area in cm2
13    TAPSE_pre = 18,                 # tricuspid annular plane systolic excursion in mm
14    RV_basal_diameter_pre = 45,     # basal right ventricular diameter in mm
15    sPAP_pre = 45,                  # systolic pulmonary artery pressure (as assessed by echocardiography) in mmHg
16    Vena_contracta_pre = 12,        # tricuspid regurgitation vena contracta width in mm
17    RA_area = 30,                   # right atrial area in cm2
18    VCI_Diameter_pre = 23,          # inferior vena cava diameter in mm
19    TV_EROA_pre = 1.2               # tricuspid valve effective regurgitant orifice area in cm2
20  )
21
22  # Convert the data frame into appropriate format for the XGB algorithm:
23  new_patient <- as.matrix(new_patient)
24  new_patient = xgb.DMatrix(data = new_patient)
25
26  # Make a prediction:
27  mPAP_predicted <- predict(XGB_for_mPAP_prediction, new_patient)
28
29  # Please print the mPAP level as predicted (in mmHg):
30  print(mPAP_predicted)
31
```

echocardioghraphic parameters from a future patient serving as input data to the trained exreme gradient boosting algorithm

34:1   (Untitled)

Console Jobs
~/

```r
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> # Loading basic libraries:
> library(xgboost)
>
> # Load the trained XGB model from desktop:
> XGB_for_mPAP_prediction <- xgb.load("~/Desktop/XGB_for_future_mPAP_prediction_V2")
[14:24:27] WARNING: amalgamation/../src/objective/regression_obj.cu:171: reg:linear is now deprecated in favor of reg:squarederror.
>
> # mPAP prediction in future patients - firstly create a new data matrix with the respective individual echocardiographic parameters:
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> new_patient <- as.matrix(new_patient)
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>
> # Make a prediction:
> mPAP_predicted <- predict(XGB_for_mPAP_prediction, new_patient)
>
> # Please print the mPAP level as predicted (in mmHg):
> print(mPAP_predicted)
[1] 31.86187
```

model output, i.e. predicted mPAP level