Process Mining and Intelligence Project

Emotion Based Music Selection

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1 Task-level modeling

1.1 Segregation system

1.1.1 Check data balancing

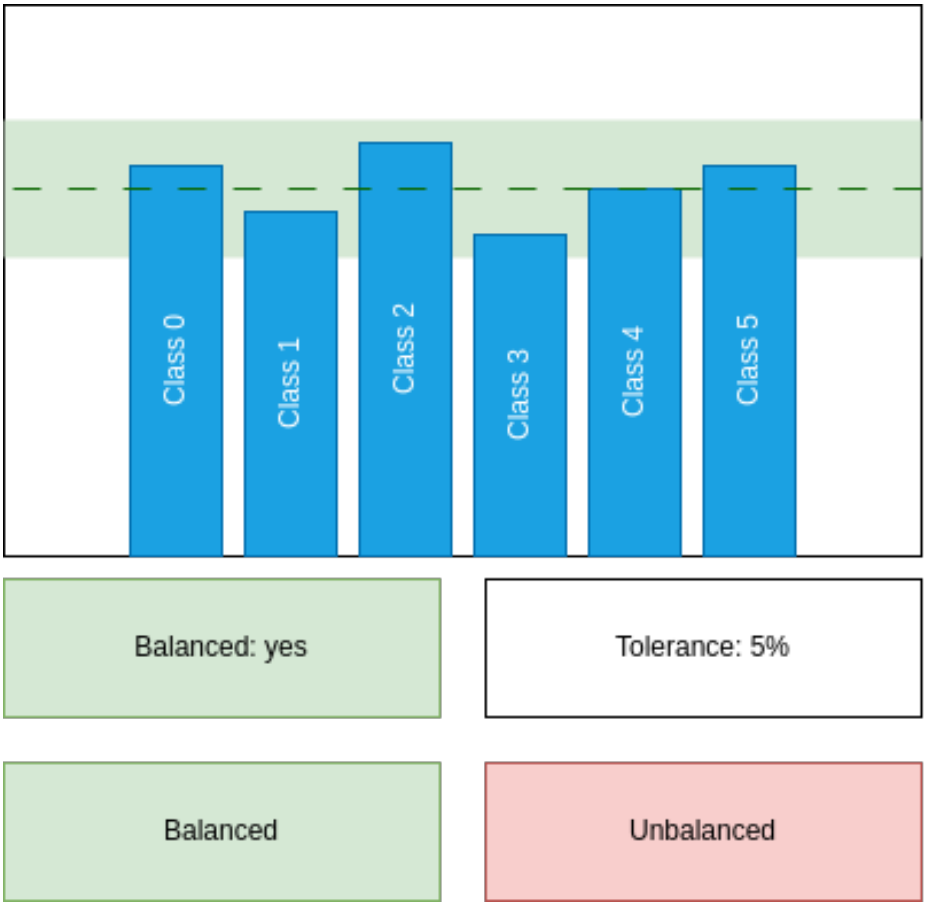

Figure 1: "Check data balancing" mock-up form

Step	O	CL	S	SC
1 ACTOR opens "Check data balancing" form.				
2 SYSTEM shows the report.				
3 SYSTEM shows a hint whether the data is balanced or not.				
4 ACTOR checks threshold in the UI.				
5 FOR each column in the report:				
5.1 IF the column is not within the displayed threshold.				
5.1.1 THEN the data is not balanced.				
6.1 IF the data is balanced.				
6.1.1 ACTOR clicks "Balanced" button.				
6.2 ELSE				
6.2.1 ACTOR clicks "Unbalanced" button.				
7 SYSTEM shows a confirmation dialog.				
8 ACTOR closes the form.				
Human task cost				

Table 1: Detailed use case for "Check data balancing" task

1.1.2 Check input coverage

Figure 2: "Check input coverage" mock-up form

Step	O	CL	S	SC
1 ACTOR opens "Check input coverage" form.				
2 SYSTEM shows a radar scatter plot of the input distribution.				
3 FOR each radius in the radar scatter plot:				
3.1 IF the distribution is not uniform as expected.				
3.1.1 THEN the input coverage is not satisfied.				
4.1 IF the input coverage is satisfied.				
4.1.1 ACTOR clicks "Accept" button.				
4.2 ELSE				
4.2.1 ACTOR clicks "Reject" button.				
5 SYSTEM shows a confirmation dialog.				
6 ACTOR closes the form.				
Human task cost				

Table 2: Detailed use case for "Check input coverage" task

1.2 Development system

1.2.1 Set iteration number

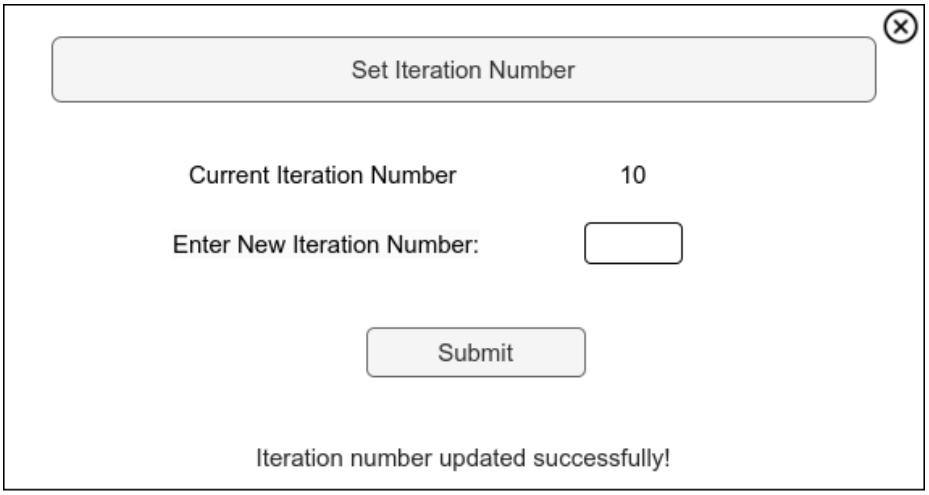

Figure 3: "Set iteration number" mock-up form

Step	O	CL	S	SC
1 ACTOR opens "Set Iteration Number" form.				
2 SYSTEM displays the current iteration number.				
3 ACTOR inputs the desired number of iterations.				
4 ACTOR clicks "Submit" button to confirm the iteration number.				
5 SYSTEM shows a confirmation dialog.				
6 ACTOR closes the form.				
Human task cost				

Table 3: Detailed use case for "Set iteration number" task

1.2.2 Check learning plot

Step	O	CL	S	SC
1 ACTOR opens "Check training report" form.				
2 SYSTEM shows the training loss curve.				
3.1 IF the loss is flat for at least half of the iterations:				
3.1.1 THEN ACTOR clicks "Overfit" button.				
3.2 IF the loss is not flat at the end of the iterations:				
3.2.1 THEN ACTOR clicks "Underfit" button.				
3.3 ELSE				
3.3.1 ACTOR clicks "Approved" button.				
4 SYSTEM shows a confirmation dialog.				
5 ACTOR closes the form.				
Human task cost				

Table 4: Detailed use case for "Check training report" task

1.2.3 Check validation report

1.2.4 Check test results

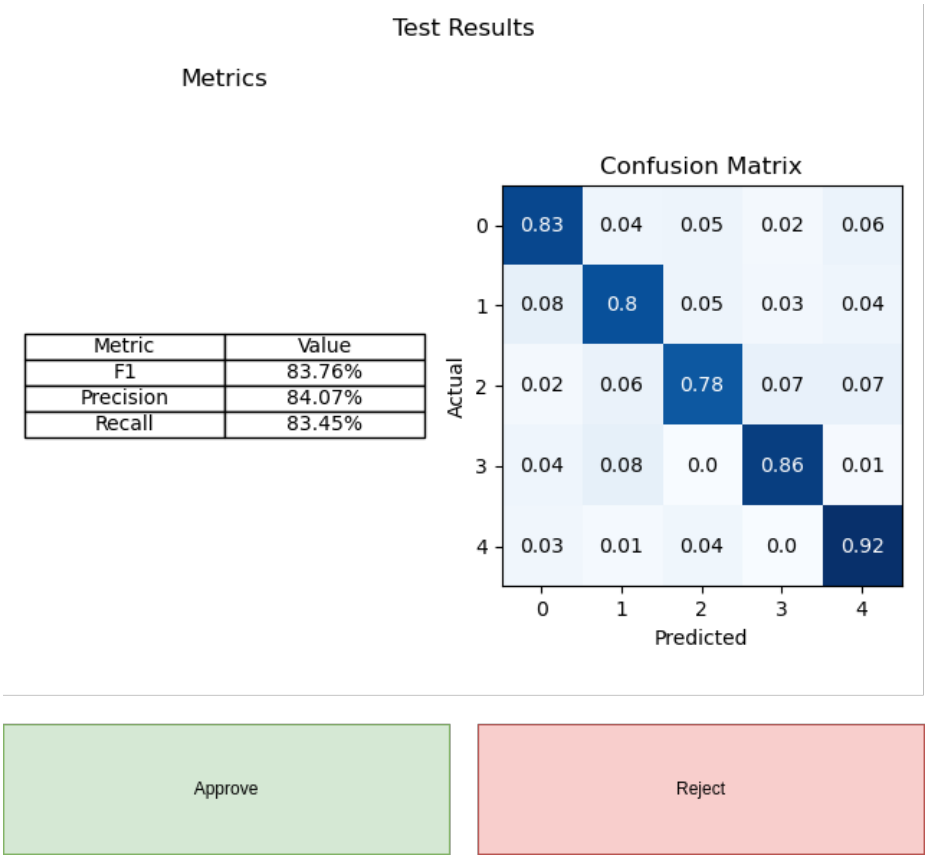

Figure 4: "Check test results" mock-up form

Step	O	CL	S	SC
1 ACTOR opens "Check test results" form.				
2 SYSTEM shows the test results.				
3 ACTOR checks the test results.				
4.1 IF the test results is not satisfactory.				
4.1.1 ACTOR clicks "Reject" button.				
4.2 ELSE				
4.2.1 ACTOR clicks "Approve" button.				
5 SYSTEM shows a confirmation dialog.				
6 ACTOR closes the form.				
Human task cost				

Table 5: Detailed use case for "Check test results" task

1.3 Evaluation system

1.3.1 Evaluate classifier performance

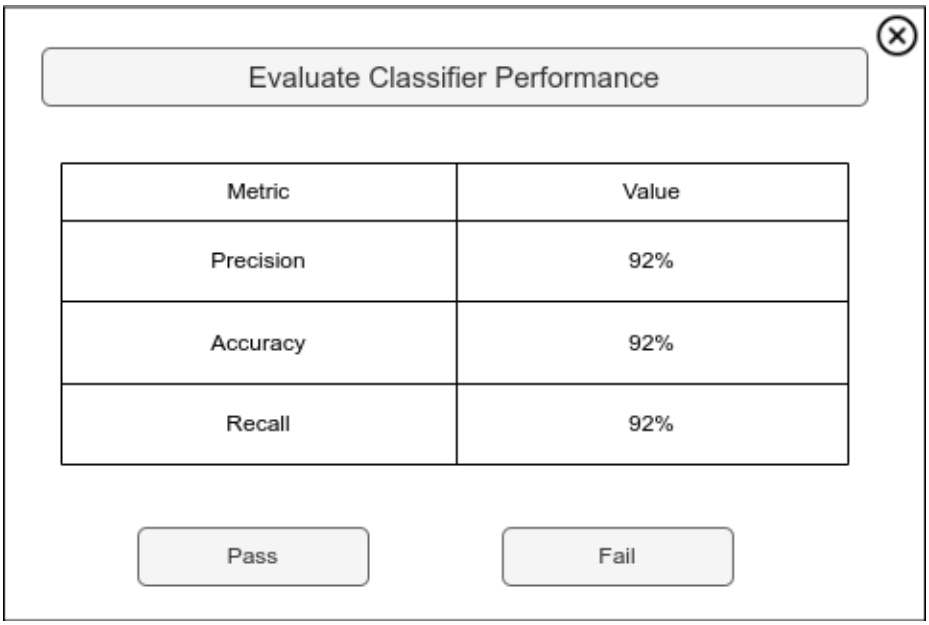

Figure 5: "Evaluate classifier performance" mock-up form

Step	O	CL	S	SC
1 ACTOR opens the "Evaluate Classifier Performance" form.				
2 SYSTEM displays the evaluation report with some metrics (e.g., Accuracy, Recall).				
3 ACTOR reviews the metrics to determine if the classifier meets the thresholds.				
4.1 IF the classifier fails evaluation:				
4.1.1 ACTOR clicks "Fail" button.				
5.1 IF the classifier passes evaluation:				
5.1.1 ACTOR clicks "Pass" button.				
6 SYSTEM shows a confirmation dialog.				
7 ACTOR closes the form.				
Human task cost				

Table 6: Detailed use case for "Evaluate Classifier Performance" task