**Index**

**Table1 of Abbreviations**……………………………………………....1

1. **Introduction** ..........................................................................................3
2. **Literature Survey**.........................................................…….................5
3. **Proposed Methodology** ........................................................................8  
       3.1 Image Loading and Preprocessing……………………...……….9

     3.2 Feature Extraction…….................................................................9  
     3.3 Feature Fusion………..................................................................12  
     3.4 Data Balancing Using SMOTE…................................................12  
     3.5 Step-by-Step Process Overview (Flowchart)...............................13

4. **Results and Discussion** ........................................................................14  
     4.1 Dataset .........................................................................................14  
     4.2 Performance Metrics ...................................................................15  
     4.3 Model Predictions (Output) .........................................................16  
     4.4 Accuracy and Evaluation Metrics ................................................16  
     4.5 Detailed Evaluation Metrics Comparison ....................................16  
     4.6 Results of All Model Comparison Matrices .................................17  
     Bar Graph .....................................................................................18  
     Precision-Recall Curve ................................................................19  
     ROC Curve ..................................................................................19

4.7 Discussion……………………………………………………….20

5. **Conclusion and Future Work**.................................................................22

**References** ...................................................................................…….23