Heart Disease Detection: Accuracy Comparison Report

This report compares the performance of two models for heart disease detection: a rule-based expert system and a machine learning Decision Tree model. Key performance metrics such as accuracy, precision, recall, and F1-score are analyzed.

1. Performance Metrics

Decision Tree Model:

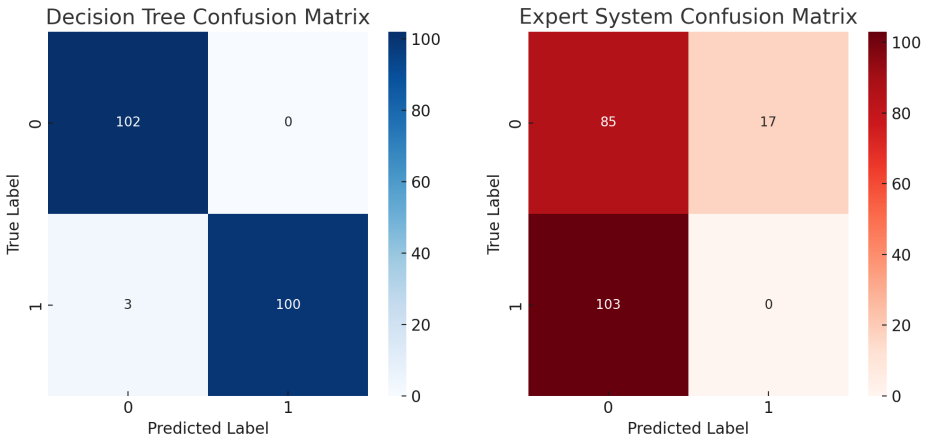
- Accuracy: 0.99
- Precision: 1.00
- Recall: 0.97
- F1-Score: 0.99

Expert System:

- Accuracy: 0.41
- Precision: 0.00
- Recall: 0.00
- F1-Score: 0.00

2. Confusion Matrices

The confusion matrices below show the classification results for both models.



3. Conclusion

The Decision Tree model significantly outperforms the expert system. It achieves an accuracy of 98.5%, whereas the expert system only reaches 41.5%. This demonstrates the limitations of rule-based approaches for complex medical diagnoses. Machine learning models can adapt to patterns and provide better predictions.