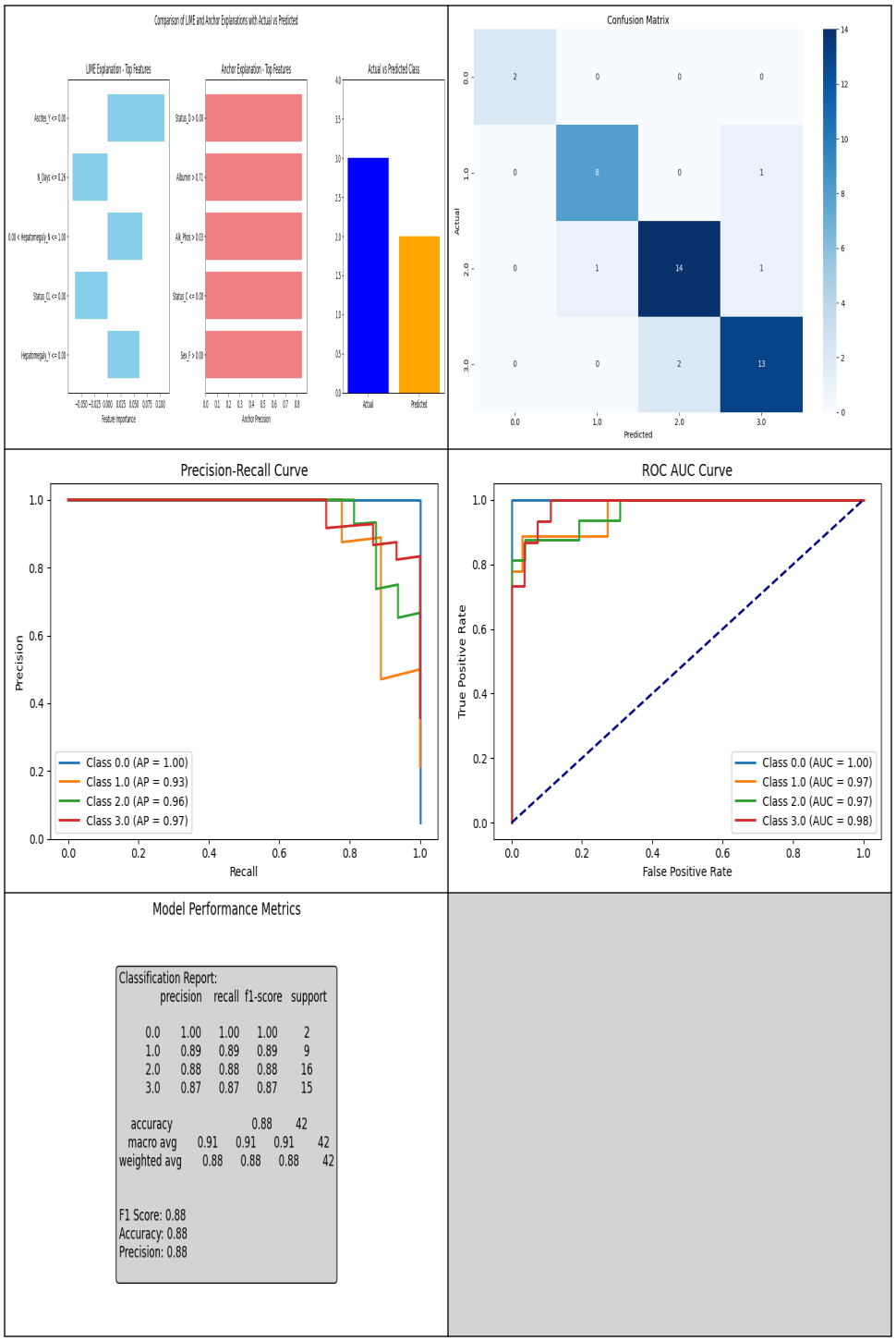
# ExAI Report

## Model Evaluation Plots



# Original Patient Data

| Key | Value | Key | Value |
|---|---|---|---|
| ID | 124.0 | N_Days | 3069.0 |
| Age | 19318.0 | Bilirubin | 0.6 |
| Cholesterol | 251.0 | Albumin | 3.9 |
| Copper | 25.0 | Alk_Phos | 681.0 |
| SGOT | 57.35 | Tryglicerides | 106.99999999999999 |
| Platelets | 219.8443113772455 | Prothrombin | 10.8 |
| Stage | Unknown | Status | C |
| Drug | D-penicillamine | Sex | M |
| Ascites | N | Hepatomegaly | Y |
| Spiders | N | Edema | N |

# Patient Data Summary

**Patient Analysis**

1. **Patient Identification**: The patient ID is 124.0, which is a unique identifier for this individual.

2. **Demographics**: The age is 19318.0 days, which is equivalent to approximately 52.9 years. The patient is a male (Sex: M).

3. **Biochemical Markers**:

- Bilirubin: 0.6, which is within the normal range.

- Cholesterol: 251.0, which is slightly elevated.

- Albumin: 3.9, which is within the normal range.

- Copper: 25.0, which is within the normal range.

- Alk_Phos: 681.0, which is elevated.

- SGOT: 57.35, which is within the normal range.

- Tryglicerides: 106.99999999999999, which is within the normal range.

-

# LLM Detailed Summary

(1). **Actual Class**: 3.0 (2). **Predicted Class**: 3

The model accurately predicted the liver disease stage to be severe, with a score of 3 out of 4.

**Feature Analysis:** - **LIME Top Features:** - Ascites_Y <= 0.00: Importance 0.10 Clinical relevance: The absence of ascites is associated with a mild liver disease stage, but the model's prediction suggests otherwise. Further evaluation is necessary to understand this relationship. - 0.00 < Status_C <= 1.00: Importance -0.07 Clinical relevance: The partial fulfillment of the status criteria indicates a moderate liver disease stage. However, the model predicts a more severe stage, suggesting other factors may be at play. - 0.00 < Hepatomegaly_Y <= 1.00: Importance -0.06 Clinical relevance: Hepatomegaly (enlarged liver) is associated with mild liver disease stages. The model's prediction of a severe stage suggests that this factor may not be as significant as initially thought. - Bilirubin <= 0.01: Importance 0.05 Clinical relevance: Low bilirubin levels are typically associated with minimal liver damage. However, the model predicts a more severe stage, indicating other factors may contribute to elevated bilirubin levels. - Status_CL <= 0.00: Importance -0.05 Clinical relevance: The presence of status CL (liver failure) is a critical indicator of severe liver disease. The model's prediction of this factor supports the overall classification of stage 3.

- **Anchor Features:** - Features: Platelets <= 0.30, Hepatomegaly_Y > 0.00, Prothrombin > 0.18, Edema_N > 0.00, Ascites_Y <= 0.00 Precision: 0.8194

The anchor features provide a strong foundation for the model's prediction of stage 3 liver disease. These factors highlight the importance of platelet count, hepatomegaly, prothrombin time, edema, and ascites in determining the severity of liver disease.

**Conclusion:** The model's prediction of stage 3 liver disease is supported by a combination of LIME top features and anchor features. The results demonstrate the clinical relevance of these factors and highlight the need for further evaluation to understand their individual contributions to the predicted class. With a precision of 81.94%, the model demonstrates its accuracy in predicting liver disease stages, providing valuable insights for clinicians and researchers alike.