

Supplementary Materials for "PG-MLIF: Multimodal Low-rank Interaction Fusion Framework Integrating Pathological Images and Genomic Data for Cancer Prognosis Prediction"

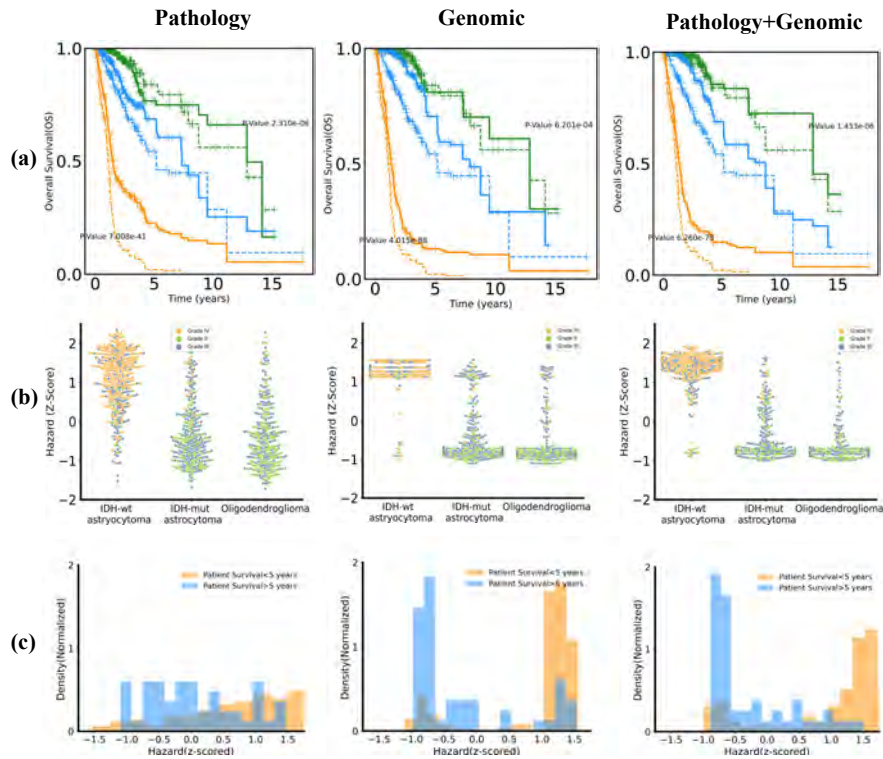


Fig. S1. Predictions risk distribution for GBMLGG patients. The visualization results show pathology, genomic, and fusion in three columns. (a) Kaplan-Meier comparative analysis illustrates the molecular subtypes of actual grading labels and the stratification of patients' prognosis by different models. (b) MLIF and SNN risk prediction demonstrates a more concentrated cluster of the three categories compared to CNN. (c) Allocation of the model-predicted risk.

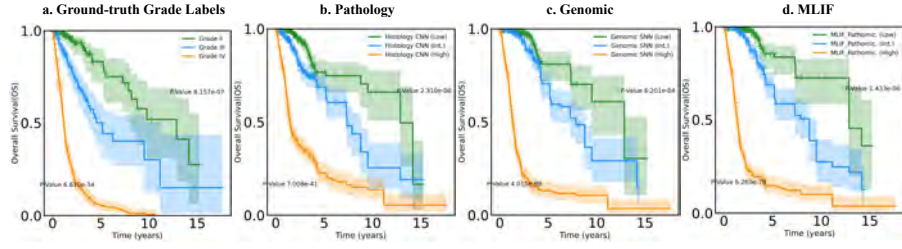


Fig. S2. Kaplan-Meier survival analysis. (a) Patients were subjected to K-M survival analysis based on accurate grading labels. (b-c) Survival analysis based on unimodal. (d) Survival analysis of multi-modality data based on MLIF.

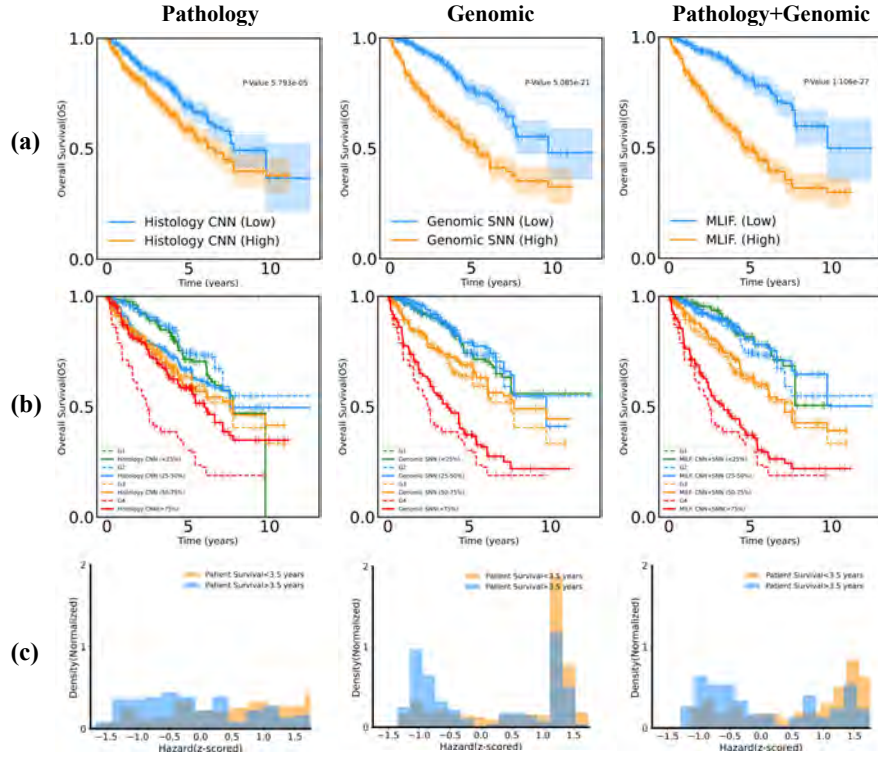


Fig. S3. MLIF applied to ccRCC. (a) Distribution of ccRCC risk among patients with shorter and longer survival time in histological CNN and pathological fusion studies. (b) Comparison of risk classification of ccRCC prognosis and the Fuhrman Grading System. (c) Distribution of model-predicted risks. Patients who died before 3.5 years of the first follow-up (red) exhibited shorter survival, while those who died after 3.5 years of the first follow-up (blue) demonstrated more prolonged survival. MLIF was able to better stratify patients with longer and shorter survival than histological CNNs, showing bimodal distributions in the prediction of risk.