

Risk and Bias:

1. Sampling bias:

- Risk: Dataset does not represent all populations.
- Mitigation: **Increase diversity.**

2. Overfitting due to small dataset:

- Risk: High accuracy but poor generalization.
- Mitigation: **Cross-validation, larger datasets, regularization.**

3. Image:

- Risk: Model may learn noise instead of tumor patterns.
- Mitigation: **Preprocessing, augmentation, artifact filtering.**

4. Explainability misinterpretation:

- Risk: Users may over-trust Grad-CAM/SHAP visualizations.
- Risk: Use multimodal fusion, clinical expert validation.
- Mitigation: Provide disclaimers, human-in-loop review.