**Optimization**

*Propose****1 method****to address overfitting.*

To avoid overfitting, users are asked to consider methods such as regularization that will introduce a penalty to the model’s loss function, hence discouraging the model from learning very complex patterns and actually helping it generalize better when new data is introduced.

**Ethics & Bias (10 points):**

*How might biased training data affect patient outcomes in the case study?*

For underrepresented patient groups, biased data can lead to misdiagnoses, delayed treatment and perpetuate health disparities. Therefore, models that train on such datasets may perform less accurately for them.

*Suggest****1 strategy****to mitigate this bias.*

To mitigate this bias, models need to be trained on diverse and representative datasets while actively seeking data from underrepresented populations.

**Trade-offs (10 points):**

*Discuss the trade-off between model interpretability and accuracy in healthcare.*

For healthcare, priority is given to models that provide understandability and transparency since the ability to understand why a model made a certain recommendation is crucial for clinical validation and patient safety. This is the case even if it means sacrificing some of the higher accuracy that complex, less interpretable models might offer.

*If the hospital has limited computational resources, how might this impact model choice?*

* Such a scenario will, for starters, change the preference for a model since hospitals with limited computation resources will gravitate towards simpler models and models that don’t require intensive computational resources.
* Complicated deep learning models require significant computational power to train models that will make hospitals with less computational power resort to reduced use of deep learning.
* With limited computational resources, hospitals with limited computational resources will heavily depend on cloud-based solutions as a partial workaround.