Ethical and legal implications of the project

Data Science is an important field of study in different areas to solve some decision-making complex problems we can face in real world while making predictions from data. Healthcare is a good example where we can use it to make life easier, which is the theme of this project. But a lot of responsibility is required concerning moral and legal principles while using it. Transparency is a key word when talking about ethical elements. We must explain our model predictions, as well as basically all the project phases if we want to secure all these principles are being respected. And if we are controlling all of this, we must ensure that we take responsibilities for eventual errors.

First of all, we must guarantee the protection of patient privacy and data security. Some medical data is really sensitive and private, so the data protection legislation must be followed. Failing to protect patient data infringes upon individuals' rights to privacy, causing the patients to lose trust on our work. Poor data security can result in data breaches, exposing patient information to malicious actors, leading to possible identity theft, for example.

Another fundamental ethical principle is patient permission. People should have the right to choose if they want to give their medical information to researchers, so regulations requiring informed consent must be followed as well.

When the model predictions are being made, we are committed to addressing biases to them, and it is crucial to identify them to avoid discrepancies in healthcare outcomes. Fairness in healthcare AI should be maintained legally. Also it is both morally and legally correct to respect all the intellectual property rights of the libraries and tools we use when we are processing the data and building the models. The software licensing must be strictly followed.

It is recommended to keep an eye on the evolution of the data privacy, medical device approval procedures and AI in healthcare laws. Sometimes a change on a specific law may cause some security and / or privacy implications to our work, so a proactive adaptation is crucial.

We can conclude that this lung cancer classification project employing CT data has ethical and legal requirements and the team is aware of them and being sure all these parameters are being respected along the process of developing this assignment, as well as making the necessary changes to adapt to possible new requirements.