Ethical Reflection

When deploying a predictive model for issue prioritization, ethical challenges primarily revolve around data bias, fairness, and decision transparency. In our model, we simulated issue priority levels (high, medium, low) using features from the Breast Cancer dataset. If applied in a company setting, such a model could be used to automate how issues, bugs, or tasks are prioritized and assigned to teams or engineers.

However, such models can inherit biases from the underlying dataset. For example, if historical data underrepresents tasks from certain teams, or if features (like task size, reporter seniority, or module) are skewed, the model may learn to deprioritize issues related to those teams. Over time, this reinforces inequity by giving more visibility and faster resolution to already well-resourced teams.

To address this, fairness-aware tools like IBM AI Fairness 360 (AIF360) can be integrated into the ML pipeline. AIF360 provides metrics (e.g., disparate impact, equal opportunity) and mitigation techniques (e.g., reweighing, adversarial debiasing) to evaluate and reduce discrimination against protected groups or underrepresented categories.

Additionally, it's crucial to apply explainable AI (XAI) techniques to help stakeholders understand how priorities are predicted. Model predictions should be audited regularly, and decisions affecting people's workloads should always be human-in-the-loop.

In summary, ethical deployment of AI models requires proactive bias detection, transparency, and fairness tooling — especially when automating decisions that impact how work and resources are distributed in an organization.