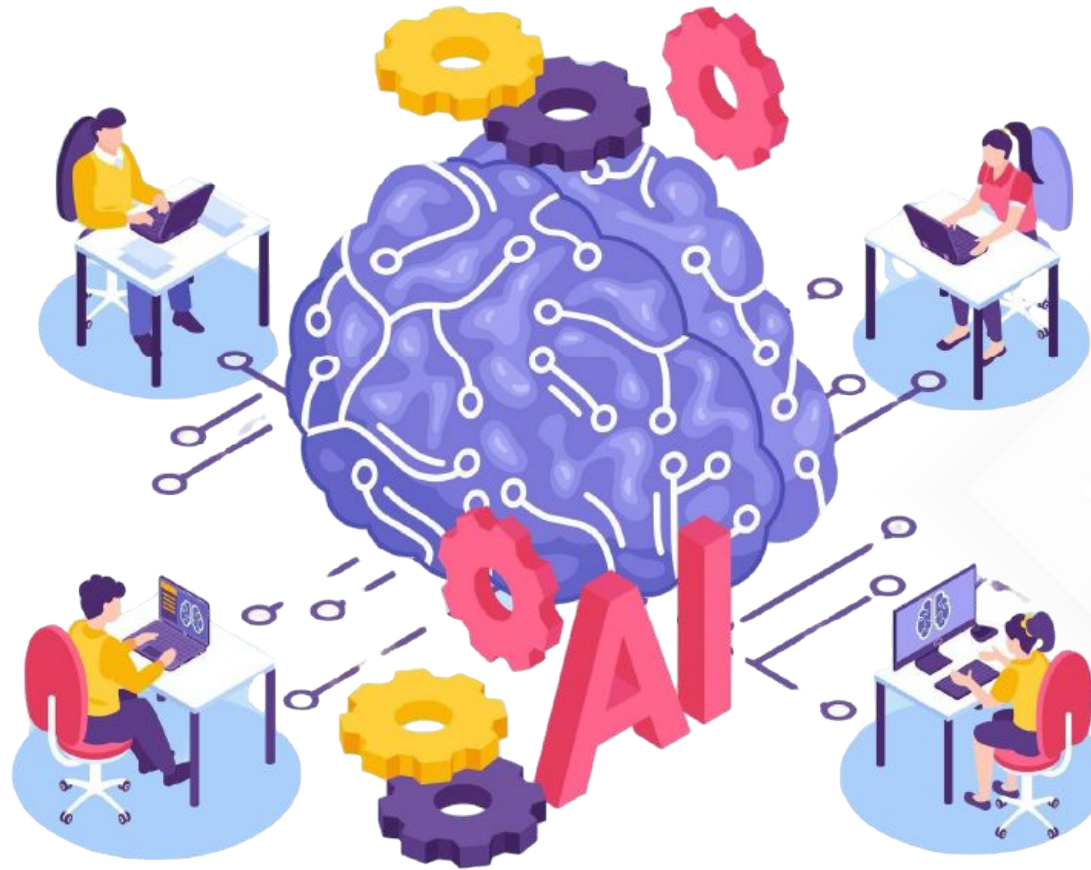# Considerations in Algorithmic Model Design

Alt text: *AI model illustration*

Algorithmic Model Design: Design Considerations

When designing algorithmic models for artificial intelligence (AI) and machine learning (ML), several critical considerations must be taken into account to ensure the models are effective, ethical, and efficient.

Here are some key considerations:

a.   Robustness and Resilience
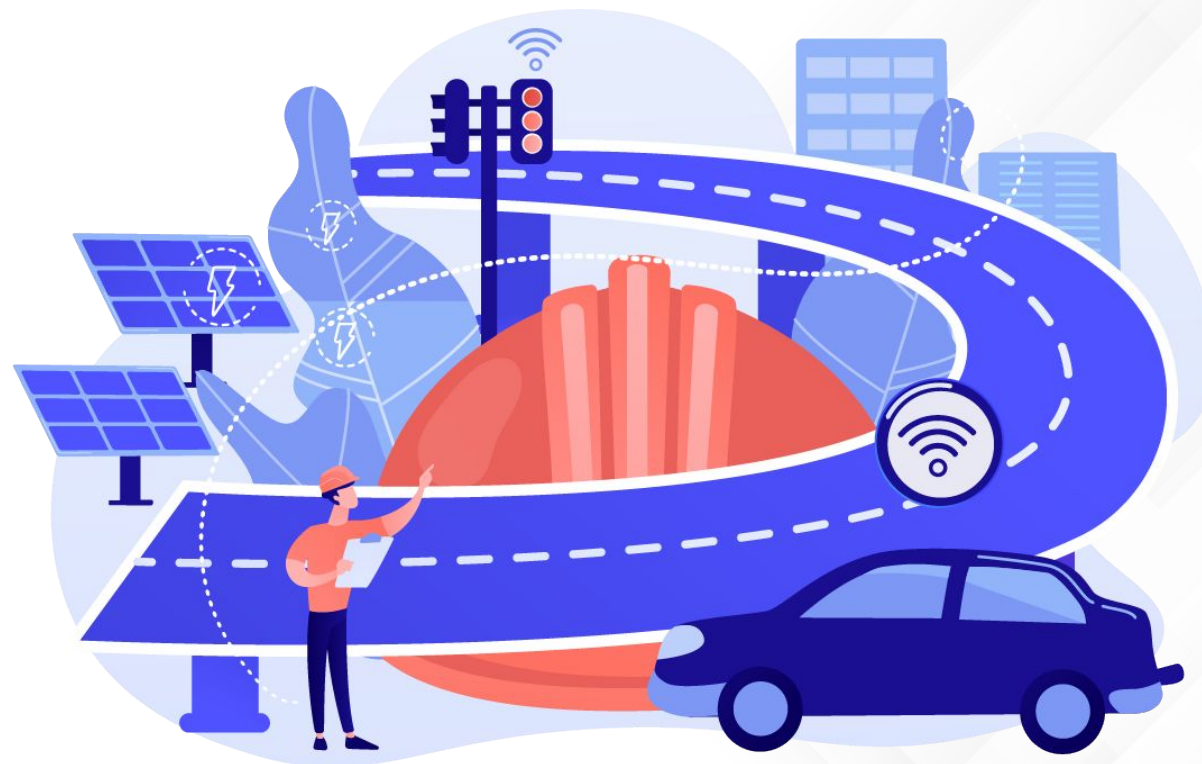
b.   Interpretability

c.   Model Selection

Read on to know more about each of these considerations.

Robustness and Resilience

Autonomous systems must be designed to withstand sensor failures and external adversarial attacks, ensuring their continued safe operation.

For instance, an autonomous car's model should be able to handle unexpected roadblocks or faulty sensors.

Alt text: Faulty sensor in an autonomous car

Interpretability

Alt text: *Health care robotics*

It is important that the AI's decisions can be explained to users, especially in safety-critical systems like healthcare robotics.

Model Selection

Model selection is a critical process in AI and ML, involving choosing the right algorithm based on problem type and data characteristics. It balances complexity and interpretability, assessing performance through techniques like cross-validation to ensure robustness. The aim is to identify a model that generalizes well to real-world scenarios.