# Q1: Algorithmic Bias

**Algorithmic bias** refers to systematic and repeatable errors in AI systems that lead to unfair outcomes, often favoring one group over another.
*Examples:*

- **Facial recognition systems** showing lower accuracy for people with darker skin tones due to biased training data.
- **Hiring algorithms** that prioritize male candidates over female ones because historical data favored men in similar roles.

# Q2: Transparency vs Explainability

- **Transparency** is about understanding how an AI system was built — its data sources, design decisions, and processes.
- **Explainability** focuses on interpreting and describing how the AI arrived at a particular decision or prediction.

***Importance:***
Both are crucial for building trust. Transparency helps stakeholders assess risks, while explainability enables users and regulators to understand and challenge AI decisions when necessary — especially in high-stakes contexts like healthcare or criminal justice.

# Q3: GDPR's Impact on AI

GDPR imposes strict data protection rules in the EU that affect AI development by:

- **Limiting data usage**: AI systems must justify how they collect, store, and process personal data.
- **Requiring consent**: Users must explicitly agree to data usage.
- **Right to explanation**: Individuals can demand an explanation for decisions made by automated systems.

This pushes developers toward privacy-preserving AI models and clearer documentation of algorithms.

## □ 2. Ethical Principles Matching

| Principle | Definition |
|---|---|
| **A) Justice** | Fair distribution of AI benefits and risks |
| **B) Non-maleficence** | Ensuring AI does not harm individuals or society |
| **C) Autonomy** | Respecting users' right to control their data and decisions |
| **D) Sustainability** | Designing AI to be environmentally friendly |