

Case Study: AI in Healthcare Misdiagnosis

Context

A leading hospital implemented an AI diagnostic tool to detect early-stage diseases from medical imaging.

AI Failure Details

The AI performed well on patients with light skin but had a high error rate for patients with darker skin tones. The dataset used for training lacked diversity, causing inaccurate predictions.

Business, Ethical & Technical Impact

- Misdiagnoses led to incorrect treatments and worsened patient outcomes.
- Raised ethical concerns about fairness in AI healthcare solutions.
- Legal risks due to potential malpractice claims.

Key Lessons & Mitigation Strategies

- Use diverse and representative training datasets.
- Conduct fairness testing and model validation across demographic groups.
- Ensure AI models assist rather than replace human medical judgment.