

Ethics in Research: In-Class Assignment 2

Question 1 [4]

Select two of the following cases and discuss how ethical concerns surrounding them be evaluated through the frameworks of utilitarianism versus deontology. Additionally, describe how it violates any of the Belmont principles, if it does.

Case 1: Use of Artificial Intelligence in Predictive Policing

A city police department implements an AI-driven predictive policing system that analyzes past crime data, social media activity, and surveillance footage to predict where crimes are likely to occur. Based on this analysis, law enforcement increases patrols in certain neighborhoods flagged as "high risk." However, the algorithm disproportionately targets lower-income and minority communities, leading to increased surveillance, over-policing, and potential racial bias. Critics argue that the AI model reinforces historical discrimination and lacks transparency in decision-making.

Case 2: Use of Artificial Intelligence in Hiring Decisions

A large corporation uses an AI-based recruitment tool to screen job applicants. The algorithm, trained on past hiring data, consistently favors candidates from certain backgrounds while disadvantaging others, such as women and minorities, due to biases in the historical data. As a result, qualified candidates from underrepresented groups are unfairly rejected.

Case 3: Use of Artificial Intelligence in Healthcare Diagnosis

A hospital adopts an AI system to assist doctors in diagnosing diseases. The system is highly accurate overall but tends to misdiagnose conditions in patients from underrepresented demographic groups because the training data was not diverse enough. This leads to disparities in healthcare outcomes, where some patients receive inadequate treatment.

Case 4: Use of Artificial Intelligence in Content Moderation

A social media platform employs AI to detect and remove harmful content such as hate speech and misinformation. While the system successfully removes a large amount of harmful content, it also incorrectly flags and removes legitimate discussions on sensitive topics, such as political activism or minority rights, restricting freedom of expression.

Question 2 [6]

Go through the following case study of "Plagiarism in India and Physics" and answer the question that follows.

In 2007, Indian prime minister Manmohan Singh doubled financing for research, claiming that newly industrialising nations such as China and South Korea have "leapfrogged ahead of us by their mastery of science and technology." Additionally, new rules linked the number of published papers to promotions and pay increases. The resulting pressures to publish and a lack of awareness about misconduct have been associated with a rise in instances of plagiarism. This is compounded by the lack of professional or government institutions capable of detecting scientific misconduct. To fill this lacuna, some Indian scientists established the independent ethics watchdog group, the Society for Scientific Values. The most high-profile case of plagiarism in India comes from the field of theoretical physics. In 2002, a research group at Kumaun University headed by the university's vice-chancellor, B.S. Rajput, was accused of plagiarism. The main allegation centered on a paper published by Rajput and his student S.C. Joshi that was later found to copy significant portions of another paper published six years earlier by Stanford physicist Renata Kallosh. Over forty Indian physicists endorsed a website that made several other charges of plagiarism against Rajput. Dr. Kavita Pandey, head of the Physics Department at Kumaun University, claimed that she was suspended for blowing the whistle on the vice-chancellor's plagiarism. Rajput resigned after a formal inquiry found him guilty of plagiarism. In the wake of the scandal, attention turned to the peer-review process.

- 1) How did linking research publications to promotions and financial incentives contribute to scientific misconduct and plagiarism?
- 2) Why might reviewers have failed to detect plagiarism in the Rajput case?
- 3) What ethical concerns arise when whistleblowers are punished instead of supported?