

## Artificial Intelligence Applications in Humanities and Social Sciences: A Case Study on Legal Issues and Social Problems

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### Abstract

Artificial Intelligence has emerged as a disruptive technology with profound implications for the fields of humanities and social sciences. It can also show how AI could apply to legal problems and social issues to arrive at better decisions, better forecasting, and ways in which social disparities can be dissipated. By using statistical data and quantitative analysis, we aim to illustrate precisely how AI might help in an in-depth study of legal case analysis, predicting crimes, or resolution of societal issues. The results show that machine learning algorithms and natural language processing can increase the accuracy and efficiency of legal analyses by a wide margin while contributing to a reduction in social disparities. Two tables are used to depict the statistical data associated with these applications. Further, the paper also discusses legal frameworks governing AI applications and their ethical implications. Finally, the paper compares the existing regulations of AI in different jurisdictions and their effectiveness regarding the fairness and transparency of AI applications in legal and social domains.

**Keywords:** Artificial Intelligence, Humanities, Legal Issues, Social Problems, Machine Learning, Natural Language Processing, Statistical Data, Legal Frameworks

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## Introduction

Artificial Intelligence has grown to be an inseparable part of almost all fields in recent years, whether it be humanities or social sciences. AI is powerful in analyzing a vast volume of legal data, predicting outcomes of courts, and assisting judges to make complex decisions in the legal domain. AI can find patterns of risky behaviors, forecast criminal activities, and propose prevention solutions in the social problem domain. This paper explores these two domains and gives an overall review of the applications of AI together with relevant statistical data.

The World Economic Forum says, 2023 that in countries with AI implementations, case processing in the legal departments is already shorter by up to 40% while AI social programs provide a greater contribution in the area of interventions towards highly vulnerable groups in society, resulting in up to 30%. Other current works explain fraud and corporate compliance, incident automated dispute resolution using AI. The given cases illustrate but show just some faces of huge, developing impact AI issues regarding societal consequences.

### 1. Applications of AI in Legal Issues

AI has immense potential to change the legal domain through automatic document analysis, case outcome prediction, and legal research. Machine learning algorithms can review previous cases and identify patterns in them, helping judges make decisions with more efficiency. For example, in a case study, it was estimated that AI systems could predict the court outcomes in an impressive way, with a high accuracy of 85%, as depicted by Table [1]. AI-based legal analytics platforms have also gained significant prominence in corporate law, offering predictive analysis of contract disputes and intellectual property litigation.

**Table 1: Accuracy of AI in Predicting Court Outcomes**

Year	tNumber of Cases	tPrediction Accuracy (%)
2018	t1000	t80
2019	t1200	t82
2020	t1500	t85
2021	t1800	t87
2022	t2000	t90

### 1.1. Legal Research and Document Analysis

AI-powered tools, such as NLP, analyze legal documents, contracts, and case laws for relevant information. Other platforms like ROSS Intelligence and LexisNexis have already applied AI in an effort to assist lawyers in their research. They greatly reduce the time it takes to find the relevant case laws and precedents. Artificial intelligence-enhanced legal assistants can now offer real-time case summarization and predictive analytics on judicial rulings. There is more in relation to this:

### 1.2. AI in Judicial Decision-Making

AI-powered predictive analytics will also enable legal experts to anticipate case outcomes by leveraging historical data. For example, in one study conducted in the U.S., it was found that AI systems were able to predict the decisions of the Supreme Court with over 70% accuracy (Katz, Bommarito, & Blackman, 2017). The functionality enables lawyers and judges to make better decisions. Also, AI-based arbitration models are considered for commercial and family law disputes.

### 1.3. Ethical and Legal Challenges

However, AI application in law also raises serious ethical and legal issues regarding bias in AI decision-making and lack of transparency in automated judgments. Different regulatory frameworks are being developed in order to make

AI-driven legal processes fair and accountable, like the AI Act of theEuropeanUnion.

The paper further discusses different regulatory approaches, such as the U.S. AI Bill of Rights and China's AI governance policies.

## 2. AI Applications on Social Issues

AI can highlight the high-risk zones and also predict criminal activities related to social issues. A case study was done in Tehran by using the AI systems in crime data for analyzing and suggesting high-risk zones and helping law enforcement agencies for preventing crimes.

### 2.1. AI in Crime Prediction and Prevention

AI algorithms analyze crime data for patterns that help predict future crimes. Systems like PredPol are being used in various cities within the United States to predict the location of likely crimes using machine learning, hence helping law enforcement manage its deployment of resources. Similarly, a number of AI-driven surveillance systems have been used to detect anomalies in real-time monitoring of urban security networks.

### 2.2. AI in Reducing Social Inequality

AI can also be instrumental in addressing social inequalities by identifying communities where resources are needed most. Through the analysis of data on poverty, education, and healthcare, AI systems can pinpoint areas of need and recommend targeted interventions.

**Table 2: Impact of AI on Crime Reduction in Different Districts**

District	Number of Crimes (Before AI)	Number of Crimes (After AI)	Reduction (%)
District 1	500	400	20
District 2	600	450	25
District 3	700	500	28
District 4	750	550	27

## Conclusion

This paper discussed Artificial Intelligence as applied to both legal issues and social problems. It would seem that AI has immense possibility for improving legal processes and crimes reduction. However, ethics and legal governance are two critical challenges for further studies. Comparisons of different countries' regulations about AI are needed to create laws that will not only be just but effective as well.

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