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FAMILY LAW - BIAS IN ALGORITHMS: THE DANGER OF RECONFIRMING STEREOTYPES IN AI-DRIVEN CUSTODY DETERMINATIONS

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INTRODUCTION

There has been an increase in adoption of Artificial Intelligence in the legal systems which has led to faster and more consistent decision making. It has also raised concerns about its fairness and bias. In the case of Child custody which are highly sensitive and intensively involve personal lives, the prospect of AI judges or decision support algorithms is alluring and alarming.

The courts throughout the world have faced tons of cases related to child custody but have limited judicial resources. This has demanded technology to step in and facilitate the justice delivery system. In future, AI could potentially help the judges sitting in the family courts by anticipating case verdicts and suggesting custody orders on the basis of the patterns in the earlier verdicts. The benefits of these AI tools come at a risk and that are biased in the algorithms. It is done by creating biases in the algorithms, creating an imperfect design, which ends up creating AI systems that strengthen stereotypes and discriminatory trends rather than counteract them. In the case of child custody, it would result in an AI reinforcing established gender roles or other societal norms which are deeply embedded in our society. When an AI suggests anything, it bears the spectacle of objectivity, it is very difficult to detect the existing prejudices in the system.

This paper reviews the existing legal and ethical dilemma which may exist in using AI in child custody determinations, with two folds focus on Indian and global perspectives. We have also critically analysed whether AI can genuinely help in determining the “best interest and welfare of the child” or whether it threatens the highest principle by embedding harmful stereotypes.

We used real world examples of American risk assessment tools to judicial pronouncements to

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demonstrate the promises and the perils of AI in family law. This paper concludes that while AI can potentially be a valuable judicial ally, its use in custody disputes need to be carefully configured with safeguards to stop prejudice and maintain human judicial discretion.

LITERATURE REVIEW

There has been international progress in the use of AI in legal judgment. We have reviewed some paper which follows as:

Rule based expert system - In the legal context it showed that computers could apply pre-established legal rules into facts, providing consistent results in the straightforward cases. These systems increase efficiency and consistency by mechanizing the application in well developed criteria.

Rule based AI provides transparency and has the ability to minimize human subjectivity but on the contrary it depends upon how thorough and fair the rules have been coded by the developers.

Case based reasoning models - These models have appeared recently which focus on emulating the common law practice of analogical reasoning. CBR AI systems focuses on the vast database of prior cases and when a new case is presented then it retrieves and compares similar precedents to provide suggested outcomes. In the child custody disputes the CBR system would recognize one parent's proximity to the school versus the other's flexible work from home schedule as a key factor. This is done by the AI as it has been seen that judges have favoured the parents who reside near the school.

The leading in this field is Machine learning and natural language processing method applied to judicial opinions. A 2024 by Abrar Et Al suggested a neural network model combining BERT (Bidirectional Encoder Representations from Transformers) and Bi-LSTM (Bidirectional Long Short-Term Memory) to forecast results of child custody cases by examining textual court rulings. The model was able to pick out the important issues from the results that are based on the annotated custody decisions. It achieved the performance value with the F1 value up to 0.93 in some tasks. Similarly, in other areas, ML models have demonstrated competence in predicting judicial verdicts from data. Eg- algorithms forecasting U.S. Supreme Court Decisions or European Court of Human Rights decisions have been chronicled in scholarly literature

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Algorithmic bias and stereotypes -

The rise of AI has raised concerns in the minds of scholars, policy makers about the algorithmic bias. A systematic skewing can happen if AI models learn from the historically skewed data or it might mirror the developers unconscious bias. Cathy O'Neil's influential book Weapons of Math Destruction (2016) and Virginia Eubanks' Automating Inequality (2018) documented how algorithms in finance, employment, policing, and social services frequently perpetuate discrimination

In 2016, a ProPublica published a study that found that COMPAS, an AI tool which predicts the defendants risk of reoffending, was biased against African Americans. It overestimated the recidivism risk of black defendants and underestimates risk of white defendants.

Following this, The US Supreme court in the case of State vs Loonis, allowed the use of COMPAS in sentencing but with several restrictions. This case highlighted that such an advanced jurisprudence suffers to balance AI input with constitutional due process and equality.

A Human Rights Data Analysis Group (HRDAG) 2023 analysis verified that Allegheny's algorithm tag some parents as "forever flags" or high risk who are poor, disabled, or minorities essentially trapping them in suspicion with no real way to reverse the algorithm's tag.

GAPS IN LITERATURE

Despite the extensive discussion above, there are still significant gaps that need to be studied for the better understanding of AI-based custody of the child.

- Most of the research on the usage of an AI model into the legal landscape centres around criminal justice or it focuses on the civil matters and their management - the specific study on the family matters is relatively sparse. Unlike criminal justice which relies heavily on quantitative methods, family disputes, especially, custody of the child relies heavily on the qualitative tools, child focused considerations that are hard to quantify.
- Second gap lies in the lack of empirical study in the world of custody adjudications, meaning that debate often proceeds on theoretical lines.
- Another gap that lies in the literature is the gap in interdisciplinary bridging: legal literature highlights ethical pitfalls, while the new technological innovation of AI shows new model abilities. Hence, this paper also aims at bridging some of the spaces by

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assessing an actual methodology.

METHODOLOGY

In the research paper we have adopted the doctrinal method of research and an analytical approach rooted in case laws, legal scholarships.

- **Literature Survey -** We did an expensive research on the literature survey by reviewing various law articles, technical papers regarding the use of an AI, various books, acts and reports on an AI in the legal system. We also studied Indian Sources and various international sources such as U.S. and European scholarships, OECD and UN reports.
- **Case Law Analysis -** The paper also analyzes various judicial rulings and how their principles and decisions in such cases can be applied in an AI model and can be used to better assess and understand custody cases by AI. Indian cases such as *"Githa Hariharan*

  v. Reserve Bank of India, (1999)", "Oriental Insurance Co. v. Joseph (2012)", which clarifies the best interest of the child and guides the foundation and baseline standards any AI model needs to fulfill have been studied and referred to in this paper.
- **Model Evaluation -** Various models and their shortcomings are also addressed below. Describing its technical aspects and its description in the non-technical language has been done for the easement of the readers. The assessment also studies that an AI model and its outputs shall be tested.
- **Comparative Perspective -** The comparative analysis has also been employed in the research paper, critically analyzing how jurisdictions are tackling AI in the courts. Various frameworks, such as the EU regulatory model which is more aggressive in its approach, in contrast to the U.S. model, where technologies, such as COMPAS have been developed.
- **Recommendations -** At the end of the paper various recommendations have been given along with the conclusion, which have been drawn by integrating the result of all the above steps. The paper focuses more on qualitative approach and balancing evidence from the case studies and the opinions in the academia to come up with thorough and balanced conclusions.

RESEARCH'S OBJECTIVES

- The research paper critically evaluates and analyzes risks that might occur due to the

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biases in the algorithm. It determines the forms of biases and stereotypes that persist in the society and even in the earlier decisions of the court which might hamper the decision making process of an AI model.

- It also assesses the alignment of the legal framework with an AI model, such as the best interest of the child in the child custody family disputes, the right to equality and due process.
- Paper's objective is to analyze which of the AI model is best applicable in the family matters and especially in the matters of child custody, where the qualitative facts matter more and the best model will be examined against the parameters accuracy, transparency, reduction of prejudice.
- The paper aims at formulating specific recommendations for ensuring that if AI is used into the legal landscape and that especially in the child custody matters, it shall be done ethically and lawfully.

CRITICAL ANALYSIS

- There are several stereotypes and biases when it comes to the custody of a child, especially where the custody of the child is given to the mother, if the child is of the tender age. The *"section 6 of the Hindu Minority and 1956"*[1] mirrors the biasness, where the father is the natural guardian of the child but it is the mother who should have the custody of the child id the child id below the age of 5. Various judicial proceedings have also ruled out child custody in favor of women, as mothers are assumed to be more capable caretakers. The danger in AI is that if an AI system is trained on the bases of the data provided, it will identify the patterns of the court rulings and then suggest custody to the mothers as a default, even in circumstances where father is more or equally appropriate for the custody of the child. Such an outcome will clash with constitutional principles of gender equality.
- In the case *"Githa Hariharan v. Reserve Bank of India, (1999)*[2]*",* the Supreme Court held, that mothers and fathers are equally entitled to act as guardians. Hence, an AI which is biased will undermine the father's rights and it could be seen as a high-tech reassertion of the same discrimination that the court has invalidated.
- Indirect discrimination may also be an issue, the algorithm may not know that it is

[1] The Hindu Minority and Guardianship Act, § 6, No. 32 of 1956, India Code (1956).
[2] Githa Hariharan v. Reserve Bank of India, (1999) 2 S.C.C. 228 (India).

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discriminating against a certain group, but the outcome pattern may reflect the biasness. Critics were also quick enough to identify that the tool, which learns from biased public data, ends up over identifying risk in marginalized groups.

- In conclusion, we can say that if we are not cautious enough with the data that we are feeding to the AI, i custody proceedings, it could result into the, gender stereotyping (mothers as natural caregivers), could also perpetuate, socio-economic bias (by prioritizing more educated and affluent parents presumed to have a better lifestyle), etc.
- The cornerstone in the custody of the child cases, is that the welfare of the child is of utmost importance, the courts before giving the custody to any of the guardians takes into account various factors, such as the health of the child, asking the preference of the child, the bonding with any of the parents, the capacity to give love and affection and a stable environment in which the child can grow. But an AI can run into risk while analyzing such things. For instance, if the financial weightage of a guardian is 20% but the bonding with the child is 10%, it might end up preferring a richer but less devoted parent over the parent who doesn't earn that much but the bondage with the child is exceptionally good.
- Hence, we can say that all that matters is cannot be quantified into the data, a human judge after after observing the family and consulting the psychologist may prefer a parent who has a better bonding with the child instead of the parent who is richer and earns more, even if he or she can provide a better material life to the child and that is because in the tender age of the child, more than any of the extravagant thing, a child needs attention and affection from his parent, but AI can fail in assessing such emotional inputs and if a biased AI only sees the financial aspect, then it might tilt towards a parent who isn't emotionally available but is wealthier.
- The Indian Supreme Court in the case *"Oriental Insurance Co. v. Joseph (2012)*[3]*",* stated that an absence of the reason in the decision of the court might end up breaching the principles of natural justice, similarly a decision given by an AI without a reason is incomplete and it may share the similar problems, hence, the design of an AI, shall be such that it must outlay its facts and result in a manner that the judge can explain with the reason.

AI MODEL: ACCURACY VS EXPLAINABILITY

[3] Oriental Insurance Co. v. Joseph, (2012) 13 S.C.C. 476 (India).

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There are 2 models of AI, one, Blackbox (such as deep neural networks) and the other one is Interpretable models (such as decision trees or case based systems).

- Black Box model tend to provide more accuracy but poor transparency, the model will perhaps observe that whenever a judgement included "child expressed to stay with his mother" the decision went in favor of the mother, thus learning the value of the child's expressed wish, this model of AI can also learn other correlated aspects such as, if mother is working full time or if she has a flexible schedule. Hence, if adequately trained it would give a probability of every outcome. Although, the Black Box model has a greater risk that biases in data will go unnoticed within the model, even though the testing of the biases could be done on the output but eliminating biases from within the neural net is hard if you can't observe decision rules explicitly.
- On the other hand, there is an alternative, an Interpretable model such as a Decision Tree or a collection of if-then rules can do so explicitly reveal the line of reasoning. For instance, if the child is above the age of child is less than 5 and the mother is not unfit then custody can be given to the mother, but if the child is >=5, then any of the parents if they are fit and one of them has more flexible timings and can give more care to the child, then that parent. Hence, this would be transparent and also this model fits nicely with legal style reasoning, such a rule-based AI can also provide consistency in the application of law, and it can be trained as well to to prevent biases.
- A much more appealing compromise is the Case-Based Reasoning model, which gives the analogies of the previous cases, but the issue with the CBR is that draws its inspiration from previous cases and then the judge uses it as a comparative chart, but all previous cases bore a bias, hence, CBR will also give biased precedents.
- Hence, the best model is the hybrid model, commonly known as, "expert-in-the-loop" model, which would be based on case-based reasoning with statistical learning. This model can employ a machine learning model to search and order relevant precedents, also the model shall outline the factors that led to such a decision, this way it would help and benefit the judge as the AI will analyze from huge databases but the output is delivered in a human understandable format. Such a model is the best model when it comes to the custody of the child as it respects the transparency and the reason - giving traditions of the Judiciary. Such a model will not come as a shock to the legal system than a fully AI based custody decision.
- Hence, such a model of an AI can reduce the inconsistency by highlighting past cases outcomes, even if not mandatory, an AI recommendation will set a benchmark. Also

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the custody cases can be long and time consuming, AI can help make the decisions quickly by analyzing some aspects of the process, such as, financial affidavits, criminal background check, etc.

RECOMMENDATIONS

Based on the above analysis, this section provides suggestions to ensure that any sort of application of an AI model supports rather than subverts justice.

- **Use of an AI as a Decision Support, not the Final Decision Maker -** AI shall only be embraced as a supporter in the decision making process of the child, judges must exercise their own personal judgement and shall not be bound by the AI's recommendation. AI shall only be appointed for an expert view, providing input that the judge may consider.
- **Select or Design an Explainable AI Model -** An Interpretable model, a case based reasoning system is the best or preferred system in this field. The judiciary with the assistance of engineers, NITI Ayog's AI initiative, shall make its own in-house AI system specifically made for Indian families.
- **Data Diversity and Quality -** In order to protect AI from the narrow scope, the data input into the AI needs to be broad and selected. Hence, there shall be custody orders from not just one but various courts in the country, representing different parts of the country, representing diverse socio-economic settings.
- **Judicial Training and Guidelines -** The judges and the lawyers shall be trained in order to analyze and examine the outputs given by an AI instead of blindly following it, some basic foundations of an AI shall be taught to them as to how an AI model works, what are its limitations, how to analyse when the outcome given by an AI is biased.

CONCLUSION

The approach of the AI model into the legal landscape is an innovative approach, as it also brings innovative solutions to long-standing problems. One one hand the assistance of AI can assists overloaded and overwhelming courts with the fast decision making process, on the other hand, AI can consolidate the very biases and stereotypes prevalent in the society that the very system of the judiciary is trying to escape, for e.g., gendered concept of parenting, that women by default are caregivers, hence the custody shall be given to the mothers, hence it poses a threat in front of the courts and this threat is not hypothetical but a real threat. The convergence

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of AI and custody law shall be driven with only one motive at the core and that is the best interest of the child and that can be achieved by the robust safeguards, the engagement of the ,multidisciplinary experts and the final decision of the judge, such measures will help the Indian legal system harness an AI model in a much efficient manner.

REFERENCES

- Allison McWilliams, Algorithmic Decision-Making in Child Welfare Cases and Its Legal and Ethical Challenges, 2024 ABA Children's Rights Litigation (describing the increasing use of predictive models in U.S. child welfare and criticisms regarding biased data and lack of transparency).
- Julia Angwin et al., Machine Bias, ProPublica (May 23, 2016) (investigating the COMPAS algorithm used in criminal sentencing and finding significant racial bias in its risk predictions).
- Christine Grillo, How Data Analysis Confirmed the Bias in a Family Screening Tool, HRDAG (June 22, 2023) (reporting on analysis of Allegheny County's child welfare algorithm and its disproportionate flagging of parents with disabilities and low-income families).
- European Commission for the Efficiency of Justice (CEPEJ), European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems (2018) (setting out principles of non-discrimination, transparency, and human control for AI in justice).
- Recital 61, EU Draft Artificial Intelligence Act (as of 2025) (classifying AI systems used in judicial decision- making as high-risk and emphasizing they should not replace human judges).
- Shriya Badgaiyan, Artificial Intelligence as a Judicial Ally: Streamlining Justice in Family and Small Claims Courts in India, 3(3) ICREP J. Interdisciplinary Studies (2024) (discussing how AI could assist Indian family courts and cautioning to preserve empathy and human decision-making in family disputes).
- Shobhana S. Singh, Use of AI-Driven Support System to Help Courts in Predicting Child Custody Outcomes in India, 23 World J. Advanced Research & Reviews 1088 (2024) (exploring the feasibility and proposals for AI in Indian custody cases, within the Indian legal framework).
- Punarjit Roychowdhury, Timely Justice in India: Can AI be the Answer?, Hindustan Times (Apr. 1, 2025) (editorial noting India's 45 million case backlog and suggesting AI could improve efficiency in courts if used carefully).

 ISSN: 2582-6433

- A. Abrar et al., Advanced Neural Network-Based Model for Predicting Court Decisions on Child Custody, PeerJ Computer Science (2024) (technical study achieving high accuracy in predicting custody rulings using NLP and machine learning).
- Artificial Intelligence in Family Court: Balancing Efficiency with Empathy, 24 N.Y.U. J. Legis. & Pub. Policy 623 (2021) (discussing the need to maintain empathy and human oversight when integrating AI in family law settings).
- Centre for Law & Policy Research, Artificial Intelligence and Judicial Bias (Aug. 28, 2021), available at CLPR website (analyzing concerns of bias even in AI tools meant for legal research in India and citing the COMPAS example).
- Virginia Eubanks, Automating Inequality: How High- Tech Tools Profile, Police, and Punish the Poor, pp. 135-41 (St. Martin's Press, 2018) (case study on algorithms in welfare services including predictive tools in child protection and their impact on low-income families)