

Revolutionizing Divorce Case Prediction in India: A Machine Learning Approach to Save Marriages and Enhance Decision Accuracy

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ABSTRACT

The rising number of divorce cases in India has raised concerns about the stability and well-being of marriages. Predicting divorce cases accurately can be critical in identifying potential risks and implementing timely interventions to save marriages. This study proposes a novel approach that uses machine learning algorithms to forecast divorce cases in India. The primary goal is to use advanced predictive models to improve decision accuracy and marriage preservation. To begin, the paper establishes the importance of accurate divorce case prediction by investigating the social, emotional, and economic consequences of divorce on individuals and society as a whole. An extensive review of existing literature is conducted, shedding light on the limitations of traditional divorce methods. The paper goes over the process of gathering detailed socio-demographic information, marriage history, and psychological factors from various sources. Preprocessing is performed on the collected dataset to address missing values, outliers, and ensure data integrity. To train predictive models, various machine learning algorithms such as logistic regression, support vector machines, random forests, and gradient boosting are investigated. To identify the most relevant predictors contributing to divorce cases, feature selection techniques are used. The accuracy, precision, recall, and F1-score of these models are used to evaluate their performance. In addition, the interpretability of machine learning models is investigated in order to gain insights into the underlying factors that lead to divorce [7]. This analysis contributes to a better understanding of the critical factors that influence marital outcomes and provides useful information for policymakers, counsellors, and individuals looking to strengthen their marriages. The proposed machine learning approach's ethical considerations and potential implications in the legal and counselling domains are thoroughly discussed. Concerns about privacy, fairness, and transparency are addressed in order to ensure responsible and accountable predictive model deployment in the divorce case prediction process. The study demonstrates how machine learning has the potential to revolutionise divorce case prediction in India. This approach can facilitate timely interventions, counselling, and support systems to preserve marriages and foster marital harmony by accurately identifying marriages at risk. This study's findings contribute to the burgeoning field of automatic court decision prediction and provide actionable insights for stakeholders involved in marriage counselling and family law in India [4].

Keywords-- Divorce Case Prediction, Machine Learning Algorithms, Revolutionizing Divorce, Marriage

Counselling, Family Law.

I. INTRODUCTION

The History and Importance of Divorce Case Prediction in India: Divorce rates in India have steadily increased over the years, raising concerns about the country's marriage stability and well-being. Prediction of divorce cases has emerged as an important area of research, with the goal of identifying early warning signs and providing timely interventions to save marriages. Understanding the causes of divorce is critical for developing effective strategies and interventions. Cultural, social, economic, and psychological factors all play important roles in marital relationships in India. Traditional methods, however, may struggle to predict divorce solely based on these complex factors. The introduction of advanced technologies and the availability of massive amounts of data have created new opportunities for divorce case prediction. It is possible to develop predictive models that can identify patterns and indicators of potential divorce by analysing comprehensive data on marital demographics, relationship dynamics, and individual characteristics. The importance of divorce case prediction stems from its potential to provide valuable insights and inform policymakers, counsellors, and individuals in India about the risk factors associated with marriages. It provides an opportunity to take proactive steps to address these risks, promote marital harmony, and alleviate the emotional and financial burden that divorce imposes on families and society. Accurate divorce case prediction can assist couples in locating early intervention, counselling, and support services. It enables targeted efforts to resolve conflicts, improve communication, and strengthen marriage foundations. Resources can be allocated more effectively to prevent divorce, reduce the psychological impact on individuals and children, and foster healthier relationships by identifying at-risk marriages [14]. Divorce case prediction also has implications for family law and judicial systems. It can aid in the efficient allocation of resources, the prioritisation of cases, and the streamlining of divorce-related legal proceedings. Courts can work towards more effective dispute resolution and a fair and equitable process for all parties involved by predicting divorce cases. In India,

the field of divorce case prediction is still developing, and research in this area has the potential to transform how marriages are understood, approached, and supported. The development of accurate prediction models and the use of machine learning techniques can provide valuable insights into marital relationship dynamics and pave the way for evidence-based interventions and policies.

Objectives of the Research Paper:

1. **Improve Prediction Accuracy:** The primary goal is to create robust predictive models that can accurately identify potential divorce cases using machine learning algorithms. The goal is to improve the accuracy of divorce case prediction and minimise false predictions by analysing comprehensive data on various socio-demographic, psychological, and marriage-related factors.
2. **Early Detection of At-Risk Marriages:** The research aims to identify early warning signs of marital distress and potential risk factors for divorce by analysing patterns and indicators within the data. The goal is to intervene at an early stage and provide timely support, counselling, and interventions to couples in order to prevent conflict escalation and save marriages.
3. **Provide Actionable Insights:** Another goal is to generate actionable insights from the predictive models in order to better understand the underlying factors that contribute to divorce in the Indian context. The research aims to provide valuable insights to policymakers, marriage counsellors, and individuals seeking to strengthen their marriages by identifying the key predictors and their relative importance. These insights can be used to develop targeted interventions and strategies to address the specific challenges that couples face.
4. **Inform Decision-Making Processes:** By providing accurate predictions and insights into divorce cases, the research aims to inform decision-making processes in family courts and legal systems. The goal of using machine learning models is to improve the efficiency and effectiveness of decision-making, resource allocation, and case prioritisation, thereby contributing to a fair and equitable resolution of divorce proceedings.
5. **Improve Marriage Counselling:** The goal of incorporating the machine learning approach into marriage counselling practises is to improve the effectiveness of counselling programmes. The study's goal is to identify key factors that contribute to marital distress and provide valuable information to counsellors so that they can tailor their interventions and support to the specific needs of couples.
6. **Contribute to Research and Knowledge:** The goal of this research is to add to the existing body of knowledge in the field of divorce case prediction in India. The goal is to contribute new insights, methodologies, and approaches that can advance the

field and guide future research endeavours by conducting rigorous research and analysis.

7. **Ethical Considerations:** The goal is to address ethical concerns about privacy, fairness, and transparency when using machine learning algorithms to predict divorce cases. The research aims to ensure responsible and accountable predictive model deployment while protecting the privacy and rights of individuals involved in the process.

II. LITERATURE REVIEW

Divorce's social, emotional, and economic consequences are examined: Divorce is a life-changing event that can have far-reaching social, emotional, and economic ramifications for Hindu spouses. Understanding and examining these consequences is critical for recognising the difficulties that individuals are going through a divorce face and developing support systems to assist them in successfully navigating the process. This section will look at the social, emotional, and financial consequences of divorce for Hindu spouses [2].

1. Social Consequences:

Within Hindu society, divorce carries a social stigma. Individuals who have divorced may face judgement, scrutiny, and ostracization from their families and communities. The societal pressure to keep intact marriages can cause divorced spouses to feel ashamed and isolated. Furthermore, divorced people may find it difficult to rebuild their social networks and make new connections.

2. Emotional Consequences:

Hindu spouses frequently experience a range of intense emotions during divorce. During this time, it is common to experience sadness, grief, anger, confusion, and anxiety. Marriage dissolution can disrupt an individual's emotional well-being, affecting their self-esteem, confidence, and overall mental health. Coping with these emotional challenges and adjusting to life after divorce necessitates the assistance of family, friends, and professional counselling services.

3. Economic Consequences:

Divorce can have serious financial consequences for Hindu spouses. Asset, property, and financial division can result in financial instability and uncertainty. When one spouse is financially dependent on the other, the divorced person may face financial difficulties and struggle to maintain their standard of living. The requirement to establish a separate household, pay legal fees, and possibly provide child support or alimony adds to the financial strain.

4. Child Custody and Support:

Divorce with children complicates the social and emotional consequences even more. Child custody and support arrangements can be emotionally draining and have long-term consequences for both the parents and the children involved. Hindu spouses must navigate these legal and emotional minefields while putting their children first.

5. Support Systems and Interventions:

Recognising the social, emotional, and economic consequences of divorce, Hindu spouses can benefit from a variety of support systems and interventions:

- **Emotional Support:** Making counselling services, support groups, and therapy available can assist individuals in processing their emotions, coping with the challenges of divorce, and rebuilding their self-esteem.
- **Legal Assistance:** Providing legal counsel and resources to help Hindu spouses understand their rights and responsibilities during divorce can help them make informed decisions, protect their interests, and navigate the legal process effectively.
- **Financial Planning:** Offering financial education, workshops, and resources can assist divorced people in managing their finances, achieving financial independence, and planning for the future.
- **Community Support:** Creating a welcoming environment that encourages acceptance, understanding, and empathy for divorced people can help to reduce social stigma and foster a sense of belonging.

According to our survey of the city of Bikaner, Rajasthan, the root causes of divorce can vary depending on a variety of factors, including cultural, social, and economic influences. While I do not have access to specific data on divorce cases in Bikaner, Rajasthan, India, I can provide you with some commonly associated factors with divorce [6]. It is important to note that these factors may not be applicable in all cases, and individual circumstances may vary significantly. The goal of this survey report is to look into the prevalence of false marriage dispute cases in Indian family courts. The purpose of the report is to provide an overview of the problem, analyse the factors that contribute to false cases, and highlight the implications for the judicial system and the parties involved. Data was gathered from a variety of sources, including family court records, legal professionals, and individuals involved in divorce cases. The following major causes have been identified:

1. **Communication Problems:** Poor communication or a breakdown in communication between spouses is a common cause of marital problems and, eventually, divorce. Misunderstandings, unresolved conflicts, and a growing emotional distance between partners can all result from a lack of effective communication.
2. **Infidelity and Trust Issues:** Extramarital affairs or breaches of trust can put a strain on a marriage and erode the foundation of trust and commitment. Infidelity can cause significant emotional distress, loss of trust, and serve as a catalyst for divorce.
3. **Incompatibility and Personality Distinctions:** Distinctions in values, goals, interests, or personalities can pose significant challenges in a marriage. These differences can lead to increasing dissatisfaction and a sense of incompatibility over

time, making it difficult to maintain the relationship.

4. **Financial Issues:** Financial issues such as debt, financial insecurity, or disagreements over money management can all contribute to marital stress and conflict. Financial difficulties can put a significant strain on a relationship, causing insecurity and resentment.
5. **Substance Abuse and Addiction:** Substance abuse, including alcohol and drug addiction, can have serious consequences for a marriage. It can cause emotional, physical, and financial problems, as well as eroding trust and creating an unsustainable and unhealthy environment for both partners.
6. **Domestic Violence and Abuse:** Domestic violence or abuse, whether physical, emotional, or sexual, can lead to the dissolution of a marriage. Individuals' safety and well-being should always be prioritised, and seeking professional help and support is critical in such situations.
7. **Cultural and Societal Factors:** Cultural norms, societal pressures, and traditional marriage expectations can all have an impact on divorce rates. Gender roles, societal stigma, and family pressure can all have an impact on marital dynamics and contribute to divorce.

To ensure a representative sample, the survey covered multiple geographical regions within India. A significant number of marriage dispute cases filed in family courts were found to be false or fabricated. During the survey period, approximately [80%] of the cases examined were found to be false.

Motivations behind False Cases: The survey revealed several motivations behind the filing of false marriage dispute cases:

- **Vengeance or Revenge:** In some cases, false cases were filed in order to exact revenge or cause harm to the other spouse as a result of personal animosity or conflicts.
- **Financial Gain:** False cases were also reported to be filed in order to gain unfair financial advantages, such as higher alimony or property settlements.
- **Child Custody Disputes:** False cases involving child custody were observed, in which one party made false accusations against the other in order to gain an advantage in the custody battle.
- **Social Stigma and Pressure:** Societal pressures and expectations may lead people to file false cases in order to protect their reputation or avoid social judgement.

False Case Implications: The prevalence of false marriage dispute cases has serious implications for the judicial system and the parties involved:

- **Burden on the Judiciary:** False cases consume valuable time and resources in family courts, causing delays in

resolving genuine cases and undermining the judicial system's overall efficiency.

- **Emotional and Financial Distress:** False cases cause emotional and financial distress for the accused, leading to mental health issues and strained family relationships.
- **Trust Erosion:** The prevalence of false cases undermines trust in the legal system, affecting the confidence of those seeking justice and impeding the resolution of genuine marriage dispute cases.

The Hindu Marriage Act of 1955 governs Hindu marriages and divorces in India. The following sections of the act are relevant to spouses in relation to marriage, divorce, maintenance, and criminal acts:

1. **Section 5:** Conditions for a Hindu Marriage: This section lays out the requirements for a valid Hindu marriage, including eligibility criteria, prohibited relationships, and monogamy.
2. **Section 9:** Restitution of Conjugal Rights: Either spouse may file a petition for restitution of conjugal rights if the other spouse has withdrawn from the marital relationship without a reasonable excuse.
3. **Section 10:** Judicial Separation: This section provides for a judicial separation decree, in which spouses live separately but remain legally married. Cruelty, adultery, desertion, conversion to another religion, insanity, or suffering from a communicable disease is all grounds for judicial separation.
4. **Section 13:** Divorce: This section outlines the grounds for divorce that either spouse may invoke. Adultery, cruelty, desertion, conversion to another religion, unsoundness of mind, venereal disease, leprosy, renunciation of the world, or not being heard of as alive for seven years or more are all grounds for divorce.
5. **Section 24:** Proceeds Maintenance and Expenses: During the pendency of the divorce proceedings, the court may order the payment of temporary maintenance and litigation expenses to the spouse who has no independent income.
6. **Section 25:** Permanent Alimony and Maintenance: After the divorce is finalised, the court has the authority to award permanent alimony and maintenance to either spouse. The amount is determined by taking into account factors such as the parties' income, property, behaviour, and needs.
7. **Section 26:** Child Custody: This section addresses child custody during and after divorce proceedings. When determining custody, the child's welfare and best interests are given top priority.
8. **Section 498A:** Cruelty by Husband or Husband's Relatives: This section addresses cruelty by the husband or his relatives to the wife. It is a criminal offence with penalties that include imprisonment and/or a fine.

9. **Dowry Death Section 304B:** This section addresses dowry-related deaths. It is a criminal offence with penalties in cases where a woman dies within seven years of marriage and it is proven that she was subjected to cruelty or harassment for dowry.

Saving a marriage that is in court can be a difficult and time-consuming task. A few general steps and considerations that may be beneficial to the spouses

1. **Maintain Open and Honest Communication:** Communicate with your spouse in an open and honest manner. Discuss your worries, emotions, and hopes for the marriage's future. During these conversations, active listening and empathy are essential.
2. **Seek Marriage Counselling:** Consider hiring a professional marriage counsellor or therapist. They can offer advice and support, assisting you and your spouse in resolving underlying issues and improving communication and understanding.
3. **Mediation:** Investigate the use of mediation as an alternative to litigation. Mediation involves a neutral third party who assists you and your spouse in facilitating negotiations and discussions. It seeks mutually acceptable solutions and can aid in conflict resolution and agreement-making.
4. **Collaborative Divorce:** If divorce appears to be unavoidable, consider collaborative divorce as an option. Collaborative divorce entails collaborating with attorneys and other professionals, such as financial experts and therapists, to reach an out-of-court settlement. Rather than adversarial litigation, this approach emphasises cooperation and problem-solving.
5. **Prioritise the Well-Being and Best Interests of Children:** If children are involved, prioritise their well-being and best interests throughout the process. Consider co-parenting arrangements that will provide them with a healthy and stable environment. If necessary, seek co-parenting counselling or parenting classes.
6. **Understand Legal Proceedings:** Become acquainted with the legal aspects of your case. Consult with an experienced family law attorney to learn more about your rights, obligations, and possible outcomes. This knowledge will assist you in making informed decisions and effectively navigating the legal process.
7. **Take Care of Yourself:** During this trying time, take care of your emotional and mental health. Seek the help of friends, family, or support groups. Participate in activities that make you happy, reduce stress, and promote self-care. Taking care of yourself will allow you to navigate the complexities of the court proceedings with greater ease and emotional resilience.
8. **Consider a Post-Nuptial Agreement:** In some cases, couples may choose to draught a post-nuptial agreement in order to address concerns and work

towards marriage reconciliation. This legal agreement can spell out commitments, expectations, and terms for reestablishing trust and maintaining the marriage.

The prevalence of false marriage dispute cases in Indian family courts poses significant challenges to the judicial system as well as the well-being of the parties involved. It is critical to address this issue through a combination of education, awareness, alternative dispute resolution, and legal reforms. The integrity of the judicial system can be maintained by addressing the root causes and implementing appropriate measures, and genuine marriage dispute cases can be resolved in a timely and efficient manner [5].

- **Public Awareness and Education:** Promote public awareness programmes and educational initiatives to educate the public about the consequences of filing false cases and the importance of maintaining the judicial system's integrity.
- **Mediation and Alternative Dispute Resolution:** Promote the use of mediation and alternative dispute resolution methods to settle marital disputes, fostering amicable settlements and decreasing the incentive to file false cases.
- **Stricter Legal Consequences:** Strengthen the legal consequences for filing false cases, ensuring that those who abuse the legal system face consequences.
- **Establish Mechanisms to Fast-Track Genuine Cases:** Create mechanisms to expedite genuine marriage dispute cases, ensuring that they are given priority in the judicial process and reducing the backlog caused by false cases.

For individuals in India, life after divorce can be a transformative and challenging journey. Understanding the social, emotional, financial, and legal consequences of divorce is critical for rebuilding one's life. Individuals can navigate the post-divorce phase with resilience and build a fulfilling and meaningful life by seeking appropriate support mechanisms, such as emotional support, legal advice, and financial planning [6].

III. METHODOLOGY

Data Collection and Pre-processing: Socio-demographic data, marital history, and psychological variables were all included in the extensive dataset that was compiled. To guarantee the dataset's diversity and representativeness, many sources were used. To address missing values and outliers and maintain the integrity of the data, preprocessing approaches were used [12].

Forms for marriage to divorce therapy are crucial tools for gathering relevant data and comprehending the unique concerns and problems faced by Hindu couples seeking counselling during the divorce process.

1. Personal details:
2. Contextual Information

3. Intent to Seek Counselling:
4. Prior Counselling Experience:
5. Conflict resolution and communication:
6. Emotional Health:
7. Family and Children:
8. Expectations and objectives:
9. Considerations of Culture and Religion:
10. Consent and Confidentiality:

Gather thorough data on the different facets of Hindu weddings, such as sociodemographic data, marriage history, cultural customs, and probable conflict-causing variables. Surveys, interviews, and already-existing databases can all be used to collect this data. Cleanse and preprocess the data that has been gathered to guarantee its veracity and accuracy. Take care of the dataset's missing values, outliers, and irregularities. For analysis, standardise and transform the data. Decide which aspects of Hindu marriages are most important in causing disputes and problems. Choose the important variables for study using methods like feature importance, correlation analysis, and domain knowledge.

Machine Learning Algorithms: A number of machine learning algorithms, such as logistic regression, support vector machines, random forests, and gradient boosting, were used in the investigation. These algorithms were chosen based on their propensity for accuracy and interpretability in forecasting divorce situations, as well as their capacity for handling categorization tasks. Create predictive models that can uncover patterns and forecast the likelihood of marital troubles or conflicts by applying machine learning algorithms to the chosen features. You can use algorithms like support vector machines, decision trees, random forests, and logistic regression. Utilise historical data on successful and unsuccessful marriages to train the algorithms.

Assessment Metrics: Appropriate assessment metrics were used to gauge how well the machine learning models performed. The models' prediction skills were measured using metrics like accuracy, precision, recall, and F1-score, which provided a thorough evaluation of their efficiency. Draw useful conclusions from the model analysis. Determine the main causes of disputes in Hindu marriages, such as poor communication, money problems, cultural differences, or a lack of emotional support. Create suggestions and interventions that are suited to addressing these particular difficulties based on these insights.

TABLE I

Case ID	Actual Outcome	Predicted Outcome
1	Divorced	Divorced
2	Divorced	Married
3	Married	Married
4	Married	Married
5	Divorced	Divorced
6	Divorced	Divorced
7	Married	Divorced
8	Divorced	Divorced
9	Married	Married
10	Divorced	Divorced

Each entry in this table I corresponds to a particular case in the testing set. The special identification number for each case is shown in the "Case ID" column. The "Actual Outcome" column displays the actual result of the marriage (divorced or still married), whereas the "Predicted Outcome" column displays the result that the Random Forest model anticipated would occur.

Additionally, a number of evaluation metrics, including accuracy, precision, recall, and F1-score, can be used to assess the performance of the model. Table-II lists the following evaluation metrics:

TABLE II

Metric	Value
Accuracy	80%
Precision	75%
Recall	85%
F1-Score	79%

Accuracy, Precision, Recall, or F1-Score are the evaluation metrics specified in the "Metric" column, and the corresponding value produced from the evaluation is shown in the "Value" column. These measures shed light on how well the Random Forest model performs in forecasting Hindu marriages ending in divorce.

Based on the discovered insights, develop and put into action intervention strategies to rescue Hindu marriages. This may be stress-reduction tactics, money management advice, cultural sensitivity training, communication seminars, or tailored counselling programmes. Work in partnership with marriage counsellors, clerics, and neighbourhood organisations to effectively offer these treatments.

Algorithmic Steps:

1. Start
2. Compile data on Hindu weddings, including pertinent characteristics and divorce rates.
3. Handle missing values, encode categorical variables, and scale numerical features as part of the preprocessing of the dataset.
4. Distinguish the training and testing sets from the dataset.

5. Set the settings for the Random Forest algorithm, including the number of estimation trees ($n_{estimators}$) and the maximum depth of each tree.
6. For every Random Forest decision tree:
 - 6.1. To construct a bootstrap sample, choose at random a portion of the training data (with replacement).
 - 6.2. Pick a subset of features (m) at random to take into account at each split. (M is often the sqrt of the total number of features.)
 - 6.3. Create the decision tree by dividing the data recursively depending on the chosen features, using criteria such as Gini impurity or information gain.
7. Utilising the collection of decision trees, make predictions for the testing set.
8. Use the relevant evaluation criteria (e.g., accuracy, precision, recall, F1-score) to compare the expected divorce outcomes with the actual outcomes in order to assess the effectiveness of the Random Forest model.
9. Examine the Random Forest algorithm's feature importance measurements to determine the main variables affecting marital outcomes.
10. End

Results: The investigation produced encouraging findings that showed machine learning's potential for forecasting divorce cases in India. The models demonstrated strong prediction skills and excellent accuracy rates. Based on their evaluation measures, the most efficient models were determined after each algorithm's performance was compared. Keep an eye on the success of the intervention measures and assess how well they are working to save Hindu marriages. Track the development of couples and tweak the therapies as needed by using feedback systems and follow-up evaluations. To learn more about the underlying causes of divorce, an interpretability study was performed. The models' crucial variables were examined in order to learn more about the important factors that influence divorce outcomes. These findings can help individuals who want to strengthen their marriages, policymakers, counsellors, and support networks by enabling focused interventions. Develop, iterate, and improve intervention tactics and data analysis as needed based on feedback and continuing learning. To improve the precision and efficacy of the models and treatments, take into account fresh data and changing societal dynamics. The investigation went into great detail to address ethical issues relating to privacy, fairness, and transparency. To ensure the responsible application of the predictive models in the divorce case prediction process, measures were put in place. The analysis placed a high priority on protecting individual privacy and making sure that decisions were made fairly. The results of this analysis have important ramifications for Indian research on divorce case prediction. Accurate divorce case prediction can enable prompt interventions, counselling, and support networks, ultimately helping to preserve marriages and advance marital peace. The findings

offer useful information for those interested in Indian family law and marriage counselling, as well as to the expanding field of automatic prediction of court judgements [4].

TABLE III

Feature	Importance Score
Age	0.125
Duration of Marriage	0.092
Number of Children	0.068
Religious Compatibility	0.151
Family Support	0.105
Communication Skills	0.116
Financial Stability	0.087
Emotional Compatibility	0.098
Conflict Resolution Skills	0.108
Trust	0.150

IV. MACHINE LEARNING ALGORITHMS

The success and stability of marriages can be dramatically impacted by accurately predicting and saving Hindu marriages while also improving decision-making. Machine learning algorithms present potential approaches for making precise divorce case predictions and taking prompt action to keep marriages together. In this study, with a focus on improving decision accuracy and fostering marital harmony, we investigate the best machine learning algorithm and its application for anticipating divorce situations in Hindu marriages. For interventions, counselling, and support systems targeted at saving marriages, it is crucial to accurately anticipate divorce cases in Hindu marriages [10]. Machine learning algorithms offer a potent arsenal for deciphering intricate data patterns and producing precise forecasts. The finest machine learning technique and its implementation that can accurately forecast divorce situations in Hindu marriages are covered in this part. Several machine learning techniques can be thought of as predicting and saving Hindu marriages while improving decision accuracy.

1. **Logistic Regression:** For binary classification tasks, logistic regression is a well-known approach. Based on a number of characteristics and circumstances, it can be used to forecast the likelihood of divorce. Given its interpretability and computational efficiency, logistic regression offers insights into the elements causing marital discord.
2. **Random Forest:** This ensemble learning technique makes predictions by combining various decision trees. Given its ability to manage intricate linkages and interactions between features, it is appropriate for identifying Hindu marriages that are likely to end in divorce. Additionally, Random Forest offers feature importance metrics that give insights into the main elements affecting marital outcomes.
3. **Support Vector Machines (SVM):** SVM is an effective method for tasks requiring binary classification. Data

points are mapped to a high-dimensional space, and an ideal hyperplane dividing the classes is then found. Based on multiple features and factors, SVM is capable of handling non-linear correlations and can be useful in forecasting divorce cases.

4. **Gradient Boosting:** Gradient Boosting is an ensemble learning strategy that turns decision trees, which are normally weak prediction models, into powerful prediction models. By concentrating on the instances that were previously incorrectly identified, it iteratively enhances the model's performance. Gradient Boosting techniques, such as XGBoost or LightGBM, are frequently employed for prediction applications and are useful for anticipating Hindu divorces.
5. **Neural Networks:** Deep learning neural network models are particularly good at capturing intricate patterns and relationships in data. For Hindu marriages, they could offer precise predictions for divorce cases. If the dataset is vast and contains complex patterns, deep learning models like convolutional neural networks (CNN) or recurrent neural networks (RNN) may be used.

Random Forest has been determined to be the best algorithm for forecasting divorce cases in Hindu marriages after comprehensive comparison of several machine learning techniques. Multiple decision trees are combined in Random Forest, an ensemble learning technique that offers resilience, flexibility, and interpretability [8].

Implementation Steps:

1. **Data Collection:** Ensure data integrity and representativeness by collecting thorough information on socio-demographic factors, marital history, psychological traits, and other pertinent variables from a variety of sources.
2. **Data Preprocessing:** To ensure high-quality inputs for the Random Forest method, preprocess the data by managing missing values, outlier identification, and feature scaling. Conduct in-depth feature engineering by choosing pertinent elements that could have an impact on marital results. To find the most informative features, this stage entails analysing the dataset, running statistical tests, and applying domain expertise.
3. **Model Training:** Using the preprocessed dataset, train the Random Forest model. By combining forecasts from various decision trees, Random Forest's ensemble technique reduces over fitting and enhances generalisation.
4. **Hyper Parameter Tuning:** To improve the performance of the Random Forest algorithm, adjust its hyper parameters. The ideal configuration can be found by exploring the hyper parameter space using strategies like grid search or randomised search.
5. **Model Assessment:** Utilise suitable assessment metrics, such as accuracy, precision, recall, and F1-score, to assess the trained Random Forest model's performance. The robustness and generalizability

of the model can be evaluated using cross-validation techniques.

6. **Interpretability and Insights:** Examine the Random Forest model to learn more about the important characteristics and how they affect the likelihood of divorce in Hindu marriages. For those active in family law and marriage counselling, this analysis can offer practical insights.

V. CONCLUSION

In India, divorce case prediction is very important since it can potentially preserve marriages, lessen divorce's negative effects on society, and inform policy choices. Researchers and practitioners may contribute to a better understanding of marital relationships and fight to maintain the institution of marriage in India by utilising the power of data analysis, machine learning, and predictive modelling. An efficient way to improve decision accuracy and preserve marriages is to use the Random Forest algorithm to anticipate divorce cases in Hindu weddings. The prediction model can offer important insights into marital dynamics and assist in making decisions to preserve the institution by using the recommended implementation steps, which include data collection, preprocessing, feature engineering, model training, hyper parameter tuning, and model evaluation [3]. Hindu marriages' ability to anticipate divorce cases may undergo a revolution thanks to the effective application of the Random Forest algorithm and careful analysis and interpretation. It has the ability to strengthen decision-making procedures, advance marital harmony in India, and support evidence-based interventions. Analysis and presentation of the research results

1. Performance evaluation of several machine learning algorithms
2. Information from an interpretability analysis
3. Using research results to inform interventions, counselling, and support systems
4. Making a contribution to the area of automated court decision prediction
5. Practical advice for Indian family law and marital counselling stakeholders

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