

# AI Powered Bail Reckoner: A Smart System for Fair and Efficient Bail Decisions

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**Abstract:** *The judicial system in India faces a massive backlog of undertrial cases, often leading to delayed or inconsistent bail decisions. The “AI-Powered Bail Reckoner” project aims to develop an intelligent decision-support system that assists judges and legal officers in determining bail eligibility based on data-driven insights. This system utilizes machine learning models trained on historical case data to identify key factors influencing bail decisions, such as the nature of the offence, past criminal records, and socio-economic parameters. It processes input case details, extracts relevant features, and predicts whether bail should be granted or denied, along with confidence scores and reasoning transparency. The project architecture integrates preprocessing, feature extraction, model prediction, and a user-friendly interface for seamless use by legal practitioners. By ensuring faster, more objective, and consistent recommendations, the Bail Reckoner aims to reduce human bias, accelerate the decisionmaking process, and contribute toward a fairer and more efficient justice system.*

**Keywords:** *Data Collection, Data Cleaning, Data Preprocessing, Feature Engineering, Machine Learning Models, Logistic Regression, Random Forest, XGBoost, Model Training, Model Evaluation, Fairness Monitoring, Bias Mitigation, Demographic Analysis, Web-based Interface, Flask, React, Model Explainability, Confidence Scores, Anonymized Data Storage, Model Logs, Audit Trail, Database Layer*

