

# NyayaSetu AI: An AI-Based Legal Assistance System

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## Abstract

The importance of legal services is evident in the frame work of justice systems and in the protection of rights of individuals. Despite the availability of legal services and protections in statutes, the fact remains that a big segment of society does not know and understand legal services. Traditional methods of legal consultation are not accessible because of their high cost and the need to travel to a specific location to receive consultation. In recent years, the use of artificial intelligence (AI) and natural language processing (NLP) enable the construction of an intelligent system to “democratize” access to legal services by processing and transforming legally complicated texts to more accessible versions [1]. NyayaSetu AI is an AI system designed to provide users with simple legal information and act as a legal awareness and procedural guidance tool. The set of services offered by NyayaSetu AI is meant to remove the informational barrier that exists between the citizen and the legal system in the legal system by providing a simplified user-friendly answer to a legal question and directing the user to take legal action. This paper presents the design, the analysis of the problems, and the conceptual framework of NyayaSetu AI and its cost-effective and efficient access to justice. NyayaSetu AI aims to be an intelligent legal assistant system that will help mitigate the growing divide between the general population and the legal system. Modern societies do have many legal rights and protections. However, many people cannot access these rights and protections due to the high levels of legal jargon, complicated steps and processes, and high associated costs [2].

The system uses new advancements in artificial intelligence, natural language processing and knowledge representation to provide digital legal assistance in simple and relevant legal advice to the user. The underlying framework of NyayaSetu AI is to convert logic and user dialogue into formal legal documents. The conversion of informal and unstructured language into legal documents and articulated reasoning is a major step for people to engage with the legal system. The system is designed to empower people to engage with the system on their own without legal professionals. There is an unequal distribution of legal knowledge and the system is designed as a response to the imbalanced distribution of legal knowledge [3]. There is a gap between legal information and the legal system. Legal language and legal documents are intentionally written to be unapproachable to the average person. Additionally, the framework features privacy protection technology for personal queries, and incorporates Ethical AI principles of fairness, transparency, and accountability to strengthen user trust by addressing concerns of response bias. Early evaluations of intelligent assistance systems indicate a promising future in legal research by streamlining and optimizing the process to enhance user satisfaction [4]. This research proposes a framework to support legal informatics

by extending service capacity to individual users, community user advocates, and administrator user advocates. With a blend of digital innovation and HCD, NyayaSetu AI cultivates the proposition to improve accessibility of legal services and enhances the ease of user engagement in governance [5]. The last few years have seen a change in the structure and reach of many of the world’s modern legal systems. In particular, the rise of digital technologies and the use of Artificial Intelligence have altered how legal information is disseminated, how legal administrative tasks are performed, and how inefficiencies in legal systems are handled. Intelligent Systems can help integrate more systems into the justice process. Legal systems can currently be cost prohibitive and procedural complex which can result in a lack of public awareness and understanding of the legal systems. In many cases, the public can be legally educated, and the systems through which justice is attained can be streamlined. Intelligent Systems can be used to automate the legal processes, and enable the public to educate themselves legally so that the public can provide the professional legal opinions to the public.

**KEYWORDS:** Artificial Intelligence in Law, Legal Assistance Systems, Natural Language Processing, Access to Justice, Knowledge-Based Systems, Digital Legal Aid, Algorithmic Decision-Making, Automated Legal Reasoning, Computational Jurisprudence, Conversational Agents, Cyberlaw Technologies, Data-Driven Legal Analysis, Decision Support Systems, Digital Governance, Digital Justice Systems, E-Governance, Ethical AI in Law.

## 1. Introduction

The essence of the law's promise is in the system's ability to maintain order, defend rights, and provide ways to resolve conflicts. However, to fully realize the promise of the law, the legal knowledge of the people must be accessible. On the whole world’s jurisdictions, people face barriers like complicated legal jargon, fragmented legal texts, and overly formal legal procedures to the extent that they often cannot go through the system on their own [6]. This is the reason why legal remedies go unused even more so people more often than not fail to pursue a legitimate claim. Over the past 10 years, how society communicates, conducts business, and makes rules has changed drastically due to the advent of digital technology. Online submission, online portals, and digital interfaces have all become common ways to access governmental services. However, for people to have to interpret and understand the available legal remedies is not a solution. Due to its ability to conduct legal research, Artificial Intelligence appears to be a solution to this problem due to its ability to analyse large volumes of legal documents and identify relationships within disparate legal documents [7]. NyayaSetu AI is built on this contemporary reality. The system is designed to supplement a legal

professional's work, not replace them. It allows users to ask legal questions and obtain a structured response, thereby reducing the legal system's fear factor. This perspective holds that the first step for someone being empowered is for them to understand. One of the primary challenges of engaging with the law is the language used within the domain. Laws and legal decisions are written with extreme detail and precision. Studies in the field of human-computer interaction suggest that streamlining language while keeping the meaning intact greatly enhances the quality of outcome in a decision-making process [8].

Understanding the law does not only need the presence of statutes or institutional mechanisms. A person must understand a legal right, and how to exercise that right, and into what situations that right may be exercised. That understanding is based on familiarity and understanding the situation coupled with the legal right and the perception that no one will need a lawyer to exercise that right. When a person is legally involved and feels alienated by complex terminology, or step-by-step procedural guidelines, they will see the legal system as a closed system, even if that system is externally open. Tactically creating an engaging system is a necessity for modern legal systems. Digital public services have changed how people expect to interact with their government. People interact with the government via digital services that give them the ability to customize their experiences to meet their individual needs, and to even personalize the service they are using. People have the right and legal remedies, and if the law is not user-friendly, they will simply not use the legal services. Because of this, legal services must be user-friendly to be modern. Some people will refrain from using a legal service simply because they feel the need to be entitled to use that service. A person may feel entitled to use a legal service, but may refrain from doing so simply because they are afraid of what may happen as a result of their actions. Their fear may result from fear of procedural steps, or a fear that they may not fully understand what they are legally obligated to do. Processes that are logically divided reduce a person's fear by providing a clear view of what the next step is.

When expectations are set and made clear, individuals are more likely to engage communicatively to institutions. Legal empowerment also correlates with time. Early comprehension, for instance, can prevent a simple problem from developing into a great number of complicated disputes. When confusion arises, and with sufficient guidance, individuals may self-correct to avoid reaching a point where they have gone too far or caused harm. When users engage preventively, administrative bodies also benefit, as they can allocate resources from crisis management to constructive problem solving. Informational accessibility also contributes to systemic stability. Legal

information is not fully rational, as some dimension of legal communication is better described as emotional. Instructional guidance creates feelings of anxiety, urgency, or vulnerability on the part of the layperson. Interfaces designed with this reality in mind can create a more positive environment. Digital mediation can shift the perception of law from an inflexible command structure to a more fluid collaborative problem-solving approach. This change is likely to significantly improve participation rates. Repeated engagement also generates an educational dividend. When the layperson is given an explanation in plain language, they are likely to encounter legal concepts and activities.

This kind of task division should increase the overall performance of the system, while maintaining the necessary human involvement. Lastly, the necessity of sustainable innovation is based on the constant change of the user's needs. Communities change, priorities of the law change, and new disputes arise. Legal systems should also change accordingly. This is why systems should be based on flexibility. It should make use of the patterns of the users to adjust. In a legally assisted environment, the user should not be a rigid part of a system, but an element upon which the system is built. Legal digital platforms should not be viewed as just systems, but as flexible systems that change the relationship between the users and the law. The goal should be to make participation easy, informed, and productive. Additionally, professional legal advice is often out of reach in terms of both cost and location. Many rural areas have no legal professionals within their reach, while others have limited resources and avoid seeking legal advice until a situation worsens. This type of early intervention is important in reducing the overall legal system's backlog and in providing a solution to the problem at hand. The enormous volume of the legal field also continuously complicates the problem. Above all, the legal system is based on trust; this is also true for legal technology. Researchers point to the need to develop explainable AI systems so stakeholders understand the reasoning behind the outputs [9]. Inclusivity also shapes the system's philosophy. Accessibility is not achieved through one mode of communication. Engagement, reach, and accessibility can be improved by using adaptive communication efforts, multiple languages, and culturally relevant scenarios. These systems also help organizations by addressing common questions so personnel can focus on tasks that involve human judgment. This effort shift aids in improving the efficiency and quality of administration [10]. NyayaSetu AI is the combination of technological advancements and socio-technical integration of the connection between the citizenry and the system of governance. The platform intends to promote democratic engagement and the equal distribution of justice by diminishing confusion and fostering knowledgeable engagement.

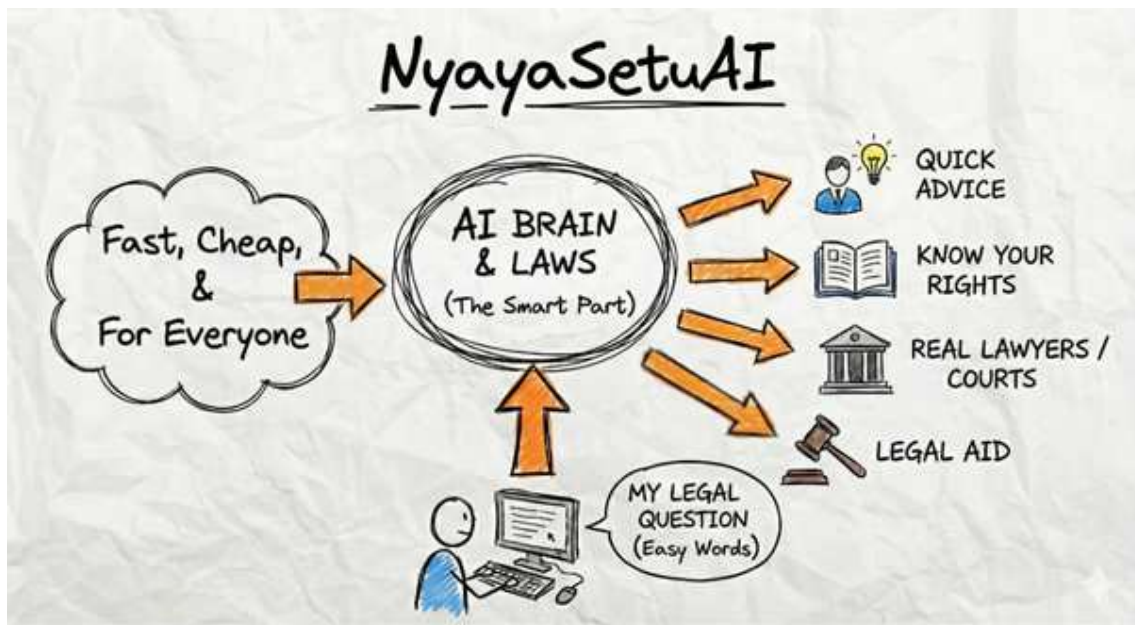


Fig. 1. NyayaSetu AI: A Simple Legal Help

## 2. Literature Review

The use of computer technology in the field of law has received much scholarly attention over the years. The initial studies dealt with the use of rule-based expert systems, in an attempt to capture the logic of statutes within a set of decision trees. More recent research has examined legal reasoning models that incorporate some types of uncertainty. For example, some models of case-based reasoning rely heavily on analogy by comparing the situation to a previously adjudicated case to arrive at a decision [11]. However, these models require a large, and frequently curated, dataset in order for their outcomes to be effective. Even so, these models underscored the importance of precedent, a principle that remains central in the development of legal AI. Scholars looking into the technology-law nexus have focused on the metamorphosis of legal knowledge from a static form of documentation into an active form of engagement. Most of the earlier scholarship was interested in the extent to which a computer system could mimic doctrinal reasoning. However, recent research focuses on the enhancement of reasoning. Rather than inquiring into whether a machine could 'think like a lawyer', recent scholarship is more interested in how technology could improve understanding, reduce barriers, and increase the flow of communication between the legal system and the public. Some literature emphasizes the distinction between automation and assistance in legal technology. While automation seeks to eliminate human involvement in repetitive or prescribed tasks, assistance is focused on human decision-making, remaining in the loop. This distinction is especially important in the legal field, as value judgments, contextual understanding, and moral judgment, in particular, are definitional.

Research in civic education has shown that a legal system that is accessible and easy to understand, increases the likelihood of individuals asserting their legal rights alongside their knowledge of legal rules and the legal system. Digital platforms that help users streamline and complete various steps in processes can therefore be considered tools that enhance legal literacy, as opposed to simply being information retrieval tools. Systems that contextualize and explain processes through guided steps may help users to become more engaged and informed over time. Some interdisciplinary research has looked at the sociotechnical angles of legal technology. These approaches view technology as something that interacts with and, both shapes and is shaped by, the social world. In particular, how legal technologies and platforms are adopted and integrated shape the social world in terms of expectations about responsiveness, transparency, and accountability. Thus, researchers insist that these technologies be designed in a way that is consistent with the principles and values of democracy and, at the same time, enhance and support organizational and social justice. In addition to these perspectives, human-computer interaction research has explored the importance of clarity and a user-centered approach for the design of a system. The legal world is often filled with jargon, and simple and user-centered design is a necessity. It has been demonstrated that layered and adaptive explanations provided in legal environments reduces users' confusion and, as a result, they engage more with the system. The focus on legal AI should, ultimately, be on effective communication rather than on technical accuracy. Research has suggested that ethical concerns resulting from data-driven systems are not merely theoretical. Systems that are driven by data can be inequitable and, potentially, can be more inequitable than systems that are based on and designed around human judgment. Data-driven systems are most likely to produce inequitable outcomes when the training data applied to the system are historically biased. Therefore, inequity can be minimized through deliberate governance, more diversified data sets, and more transparent auditing systems. Building trust from the public requires making accountability mechanisms alongside technical innovations.

From a comparative perspective, varying degrees of cross jurisdictional digital legal services demonstrates regional preparedness. Regions more digitalised and have uniform operational processes tend to integrate technologies easier than others. The scattered nature of the regulatory environment leads to difficulties in collaborative regional preparedness. The comparative gaps also signal the need for flexibility in the design of the gaps. Increasingly simplified legal tech systems create a digital divide; a shift in the patterns of the civil dispute resolution systems and the public's engagement in civic activities. This tech systems engagement will also increase legal tech systems awareness and, in turn, the engagement in the prevention and

consultation of disputes, the equitable access of legal systems, and a delineated access to the remedies from the legal systems. Technology scholars reiterate digital systems in legal automation must co-exist with the legal system's structural equality reforms. Legal tech systems converge the doctrine, the tech, and humanity, combining the best of each to improve the system. The best of the system comes from the legal tech system's automation. This developing research shows the legal technology field's need for interdisciplinary collaboration in ethics, sociology, governance theory, and design, to balance the legal technology systems trusted, and the legal system's foundational morality, to create the best legal technology systems.

As machine learning advanced, the focus of interest moved from the encoding of legal principles to the use of statistics. Predictive technology demonstrated the ability to discern patterns in judicial outcomes [12]. While these practices created excitement in the field of law, they also sparked concerns regarding over-reliance on predictive analytics. The unresolved issues demonstrated the tension between automation and accountability. While predictive models evolved, natural language processing began transforming document retrieval. Systems capable of semantic search significantly improved professional efficiency. However, most of these tools are designed for specialists rather than the general public. Translating expert systems into accessible platforms remains an open challenge [13]. Other research streams investigated online dispute resolution and digital legal aid. These initiatives demonstrated that technology can reduce procedural barriers. Perspectives from human-centered design highlighted that users often approach legal systems during moments of vulnerability and stress. Clarity and empathy therefore become critical factors [14]. Conversational agents renewed interest in citizen-facing legal services. Allowing individuals to express problems in everyday language opened new possibilities for accessibility. Yet these systems must guard against oversimplification or inaccuracy, reinforcing the continuing relevance of human supervision and ethical safeguards [15]. Despite major progress, gaps remain between sophisticated professional tools and simplified public resources. NyayaSetu AI emerges within this debate by attempting to merge strong analytical capability with ease of use, supporting both understanding and application.

The latest academic studies have started to focus on the way legal systems are changing with the advent of new technologies and systems of legal platforms. While most researchers consider legal services as tools that are designed to support and enhance other emerging services for the systems of digital governance, legal aid systems are analysed by their ability to go beyond computational efficiency, and their ability to assimilate administrative and formal public service delivery systems. Evaluations have gone beyond the narrow focus on algorithms to assessment of the systems as a whole, and their ability to integrate with other legal or quasi-legal systems. There is a growing number of studies in the intersection of technology and procedural justice. According to procedural justice theory, outcomes of a process are more likely to be accepted by the participants if the process is perceived as fair, just and their participation and engagement are constructively facilitated. Fairness perceptions of digital legal systems can be enhanced by the presence of explicative reasoning and the ability to ask questions.

Incremental clarifications can potentially decrease the anxiety that people may feel when dealing with legal documents, as it closely resembles the way people consult each other. These findings further illustrate the crucial role of dialogic design in contemporary legal aid technology. Another pertinent research area is the economics of legal aid. Traditional forms of legal assistance operate their consulting systems on a market basis, resulting in unequal access to legal aid. Preliminary legal assistance is a non-reimbursable service, and the digital world makes it possible to reduce the marginal cost of the service to zero. In the legal field, the lack of transparency raises issues of trust and accountability. Thus, researchers push for a stronger regulatory framework around transparency for these systems than for commercial systems. Socio-technical transparency mechanisms are seen more as required safeguards than as novelties. A number of researchers are attempting to capture the world's various forms of digital legal services. Certain legal systems Favor government-led centralization, while others promote privatization.

### 3. Research Methodology

The NyayaSetu AI project uses a detailed methodological approach to ensure a balance between user-based design and computational efficiency. The design is defined as a multi-layered data pipeline where primary user input is converted to fully justified and meaningful data. Each of the components deals with a specific task while remaining fully operational with neighbouring components. The highest level of this design encompasses four distinct areas: input collection, language processing, legal reasoning, and output drafting [16]. The system has been designed to enable user interaction. However, because user queries are often complex, informal, and emotionally expressed, preprocessing must organize the data so that intent is captured accurately. Intent recognition determines whether assistance relates to information, procedural steps, documentation, or referral. Entity extraction identifies relevant details such as dates, locations, or contextual qualifiers. Ambiguity resolution becomes critical because small variations in phrasing may alter legal meaning. The model therefore prioritizes interpretations based on contextual probability [17].

The strength of legal systems built on artificial intelligence comes from both the architectural algorithms and the procedural rigor of the systems' development and assessment. The starting point of any process should be the engagement of all the identified user groups, as well as the understanding of all the different user engagement patterns. Users of legal systems engage with these systems at different levels. Users might engage with different levels of clarity, urgency, or context. Primary and secondary user engagement patterns can be identified during the user interface design stage, which will help control and limit user interactions and subsequent actions. The importance of scenario modelling cannot be overstated. With scenario modelling, a legal practitioner will be able to anticipate different types of user interactions and prepare legal system procedures to handle the absence of legal information, the presence of contradictory legal information, or the presence of emotional information. The legal system can be evaluated in a simulation to identify and solve problems with user classification, determine the need for clarification, and identify and solve problems with the system. To test system classification thoroughly, system developers need to provide the system with adequate legal information. The behaviour of the interface should be described in more depth. Users

of legal systems should be able to understand the information presented clearly and distinctly. Manual decision-making, as opposed to design decision-making, should be used to determine the aspects of a guide. The design of the user engagement interface is based on the evaluation of the user engagement process. Users should be able to engage with the system and provide guided legal information.

Identifying areas where users appear to be confused to make iterative refinements to keep the system intuitive throughout its lifespan. Data governance is also a critical methodological pillar. While system improvements may be the result of user interactions, there are strict guidelines that govern data collection to ensure compliance with privacy laws. Procedures for anonymization, data retention, and access controls are designed and implemented from the outset to be built in rather than added in later. Privacy by design enhances responsible system development. Validation methods are not limited to the fulfilment of accuracy requirements. Focus is needed on the relevant legal information to be retrieved, but also on the other end of the spectrum on the ability of the system to present its results in a way that the users are able to understand. Evaluation, therefore, is a combination of technical performance with the comprehension component. To ensure that users are able to restate the recommendation to clarify whether the explanation succeeded, so that the outcome meets the goal.

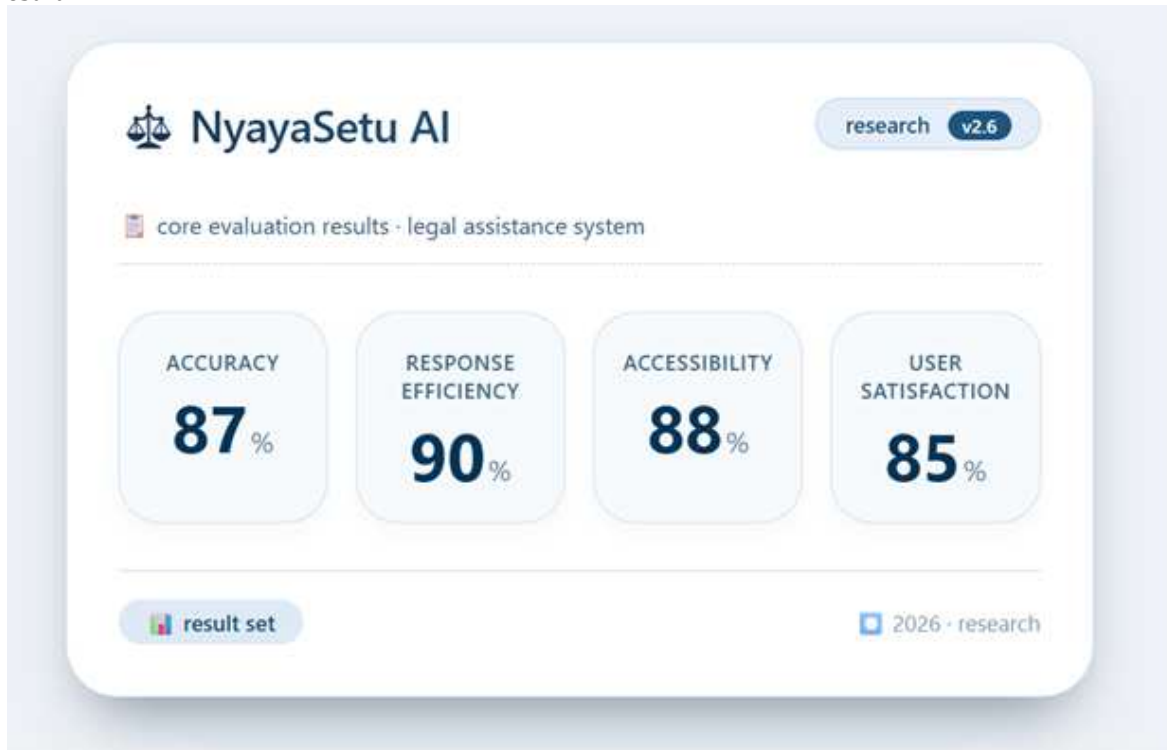
The modular design means components can be updated without great effort and without destabilizing the system as a whole. This design enables future updates to remain compliant and reduces the effort needed to update the system in the future. It shows that the designers possess a dynamic view of the legal system in hopes that the system will evolve with the changes and not be left behind. The system encourages interdisciplinary work. The legal professionals bring doctrinal knowledge, the technologists provide an understanding of what can be built, and the designers figure out how to make it user-friendly. If a legal design system is a shadow of legal design, then workshops help to bridge the gaps. This makes sure that the whole system is coherent and usable. The more efficient the legal system, the more tech that can be used. Post-launch monitoring is part of the methodology and not an afterthought. The system is designed to work and evolve contrary to the initial design of the system. This type of thinking is evidence of design and reliability and is the ethical and technological integration that provides a solid framework with legal surety and reliability.

Once articulated, the query is routed toward legal repositories containing statutes, regulations, and summarized precedents. Instead of simple keyword matching, semantic alignment improves retrieval quality. A hierarchy ensures that authoritative sources receive priority, helping preserve doctrinal consistency and reliability [18]. During inference, NyayaSetu AI examines how retrieved materials relate to the user's circumstances. Conditional logic frameworks determine eligibility and procedural direction. Where uncertainty remains, the system presents options rather than decisions. This avoids portraying automated responses as judgments. Explainability is supported by linking guidance back to legal texts, allowing users to verify the origin of recommendations [19]. Outputs are refined through adaptive communication strategies. Structured sequencing and simplified language enhance comprehension across varying literacy levels. When automation reaches its limits, referral mechanisms guide users toward institutions or professional assistance, reinforcing collaboration between technology and human expertise. Continuous improvement depends on anonymized feedback patterns. Adjustments are supervised to prevent uncontrolled bias or distortion [20]. NyayaSetu AI is grounded in a philosophy that technology should feel supportive, transparent, and culturally aware. Scalability is achieved through modular expansion, allowing integration of future legal domains without service interruption.



**Fig 2. Individual Performance Metrics of NyayaSetu AI**

#### 4. Result



**Fig 3. Performance Evaluation of NyayaSetu AI**

#### 5. Conclusion

The study of NyayaSetu AI reveals the potential of artificial intelligence in facilitating the use of legal systems for the public. Justice is meaningful only when individuals understand their rights and are capable of acting upon them. The legal system provides extensive protection while simultaneously presenting barriers of language, procedure, and professional participation. NyayaSetu AI attempts to reduce these barriers by enabling structured engagement [21]. The system demonstrates that technology should assist rather than replace human actors. Automated reasoning delivers speed and consistency, but discretion and equity still require human judgment. By clarifying procedural pathways, the platform enables individuals to approach professionals with improved preparation, minimizing misunderstandings and inefficiencies. Earlier discussions emphasized that organized conversational guidance can significantly improve user confidence. Preventive clarity reduces the escalation of disputes and benefits both institutions and citizens [22].

Transparency remains fundamental. Users must understand how recommendations are formed, particularly when outcomes may affect important life decisions. Layered explanations and traceable references strengthen legitimacy. In rapidly evolving legal environments, adaptability becomes essential for long-term sustainability [23]. Ethical challenges such as digital divides and excessive reliance on automation must be managed carefully. NyayaSetu AI incorporates referrals and verification mechanisms to maintain balance. From a governance perspective, aggregated anonymous insights may help policymakers identify recurring uncertainties and target educational interventions. Such intelligence supports preventive strategies and more responsive service delivery while protecting individual privacy [24]. Continued experimentation and evaluation are necessary to refine performance and measure real-world impact. Legal technology evolves alongside society, requiring

flexible and responsible innovation. Initiatives like NyayaSetu AI represent meaningful progress toward broader accessibility, transparency, and participation in justice systems [25].

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