AI, Justice, and the Ecosystem Approach – Notes from the OpenNyAI Mission

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Abstract

OpenNyAI is an initiative focused on leveraging artificial intelligence (AI) to enhance justice in India (Nyai means "justice" in Hindi). It catalyses the development of AI public goods like models, APIs, and datasets, supported by a community of lawyers and technologists. The mission is to transform the justice experience for every Indian. OpenNyAI emphasises open-source, collaborative, and transparent practices, ensuring inclusivity to mitigate the risks of AI exacerbating biases. In this paper, we explore how our ecosystem developed various community initiatives and reference solutions like Jugalbandi and AI-assisted Judgement Explorer, demonstrating AI's potential in the justice field.

Introduction

OpenNyAI is an initiative focused on leveraging artificial intelligence (AI) to enhance justice in India (Nyai means "justice" in Hindi). It catalyses the development of AI public goods like models, APIs, and datasets, supported by a community of lawyers and technologists. The mission is to transform the justice experience for every Indian. OpenNyAI emphasises open-source, collaborative, and transparent practices, ensuring inclusivity to mitigate the risks of AI exacerbating biases. Our ecosystem has developed various community initiatives and reference solutions like Jugalbandi and AI-assisted Judgement Explorer, demonstrating AI's potential in the justice field.

The Mission So Far

Our journey began almost three years ago. The landscape of Legal AI in India at that time displayed a significant divide between legal professionals and technology experts. Both the sector professionals struggled to communicate effectively, hindering legal experts from recognizing the potential tech solutions for their problems. Furthermore, the technology sector was unaware that their solutions could be applied to the legal and justice domains.
While acknowledging the valuable work of legacy organisations in the field at that time, it became evident that there was no dedicated platform facilitating collaboration and innovation among the disparate communities. Notably, the absence of open-source or reference solutions posed a substantial barrier to entry for entrepreneurs and innovators. Addressing this gap required the establishment of reference solutions. In order to address these gaps, we started a collaborative mission with founding members Agami, ThoughtWorks, EkStep, Rohini Nilekani Philanthropies, and National Law School of India University, Bengaluru.

Hence, our core focus has been on two key areas - firstly, catalysing the justice and tech communities to come together toward solving for access to justice and secondly, building the foundational AI blocks for this community to leverage and further innovate upon.
To undertake this task, it was imperative to first address the issue of data quality. Recognizing the necessity of high-quality and well-structured data for the development of any viable solution, we undertook a concerted effort over the course of one year to build a robust legal data annotation pipeline with over 100 law students. This pipeline not only facilitated the upskilling of students but also provided access to meticulously annotated datasets of superior quality. This data was used to build the 'Rhetorical Roles' Model which expertly identifies the different parts of a legal judgement including facts, arguments, legal issues, precedence etc. Another model, complementing it, is the Legal Named Entity Recognition Model which can point out the different entities within a judgement like party name, court name, dates, laws etc. We also built the 'Judgment Summarizer' to extract and create summaries of lengthy and often jargon-heavy judgments of Indian courts. It essentially makes multiple lengthy and arduous processes much simpler and quicker. We have seen these models generating value across law firms, government bodies, legal chambers, law schools, banks, and beyond, with more than 7000 unique users of these models in the last two years.

Generative AI and Justice

We have also tapped into what has been labelled as humanity's Promethean moment – generative AI – to build the Jugalbandi Stack. Jugalbandi essentially enables people to have a voice-to-voice conversation in their native language, on a messaging platform of their choice, to understand and query upon verified knowledge bases curated by subject matter experts. So, I could go on WhatsApp today and send a voice note to a bot asking what scholarships I would be eligible for to pursue higher studies, and after a back-and-forth conversation about my personal details, the bot would tell me which three schemes out of a total 100 I could be eligible for. Jugalbandi is a free and open tech stack that combines the power of large language models and Indian language translation models under the Bhashini mission to power conversational AI solutions in any domain. As a technology stack, Jugalbandi is interoperable, and different LLMs, privacy filters, language models, and so on may be used in varying permutations and combinations. Today, Jugalbandi unlocks the power of conversational AI to combat the deep-rooted and pervasive information asymmetry that exists in India. Imagine a farmer looking for loans and entitlements to ameliorate seasonal fluctuations. In most situations, this person would face herculean difficulties in accessing information around government schemes, especially in retrieving information in their native tongue. The Jugalbandi stack has relevance across industries, but especially in the law and justice sector. For instance, it can provide real-time access to legal aid and information to victims of domestic abuse seeking protection, information about eligibility for government schemes to farmers wanting to sow the seeds for the harvest season, provide a comprehensive list of all laws, amendments, notices, and rules of the country to litigants, students, lawyers and judges alike - all in the language they speak and/or write. One critical consideration has been safeguarding the data privacy of the users interacting with the stack, as is visible in the image below. For a woman sharing her details to understand which scholarship she may be eligible for - she is sharing highly sensitive information, which we ensure does not go to Open AI or any other third-party cloud service. Organisations are encouraged to use the stack in a way that the data only reaches them (if at all), and even then, it is masked with relevant personally identifiable information (PII) filters like masking, redaction, etc.
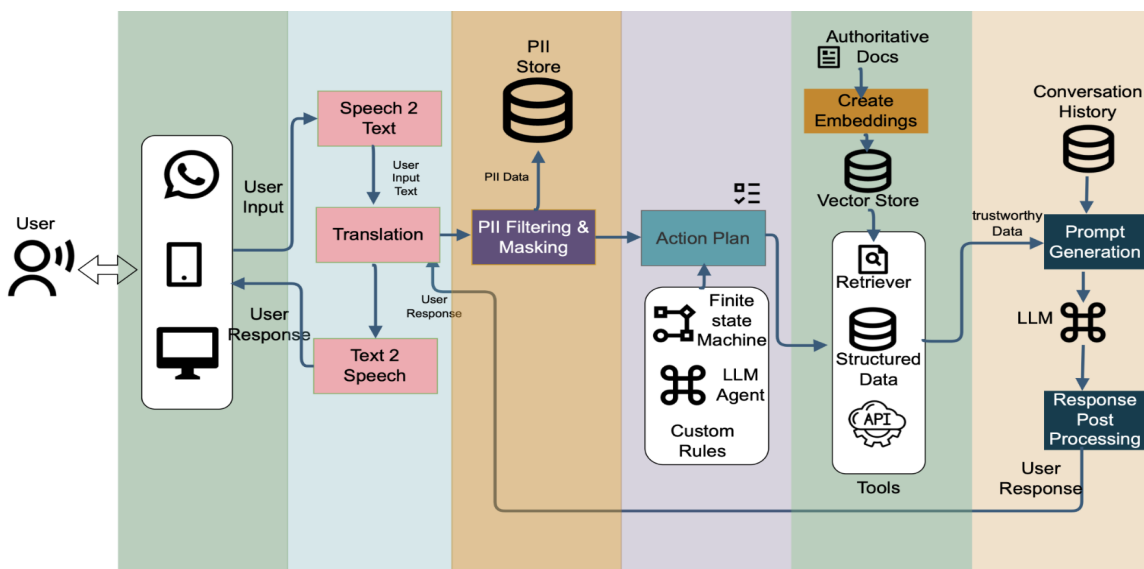
Jugalbandi Studio

We have recently launched Jugalbandi Studio in partnership with Microsoft Research India. Jugalbandi Studio is an open-source platform that empowers organisations to articulate their chatbot's flow using natural language. Beyond information extraction, it enables actions like digital payments, e-signatures, Aadhaar authentication, and form filling. Imagine not just identifying government schemes you're eligible for but seamlessly applying for them within the chatbot. It goes without saying that implementing these solutions would require high levels of data safety and governance. In order to ensure that, Jugalbandi Studio runs on an organisation's own cloud server - so that it does not leak outside their organisational boundaries.

The intention is to empower small to medium enterprises and NGOs by helping bridge the gap between intuitive entrepreneurial vision and technical know-how. The need for this emerged as we observed, over the course of the past year since launching Jugalbandi, two major roadblocks in deploying technology - *firstly*, the challenge of understanding how the technology works and what its capabilities are, and *secondly*, the lack of necessary resources to actually deploy the tech for your user base at scale. Jugalbandi Studio addresses these hurdles, providing an open-source testing environment. Now, organisations can iterate rapidly on user flows and logics without the need for technical expertise or large capital investments.

Ecosystem Approach

While the models and the Jugalbandi Stack are powerful tools for the justice sector, the OpenNyAI Mission is rooted in community and acts as a field catalyst for the justice sector. One major initiative for building the community and its capacity to leverage AI is the OpenNyAI Maker Residency. The Residency has brought together justice practitioners from different fields – civil society organizations, law and justice, state and central governments, technologists, and data scientists – to collectively build out AI solutions for different problems statements that exist today - from clogged cause lists in courts to lack of investigation guidelines for officers who arrive first at the scene of a crime, to bottlenecks in the online dispute resolution system and many more. The underlying motivation is to create spaces for tinkering, making, and imagining radical possibilities that AI allows us today.

The Mission adopts an ecosystem approach as the development and implementation of AI in the justice sector must be a collaborative endeavour. For example, all the models listed in the above section were built in collaboration with law students, legal experts, data scientists, and community leaders who made the models more robust and academically sound. Similarly, the Residency program is a testament to the power of interdisciplinary collaboration. The success of the Residency hinged on the invaluable contributions of mentors from various backgrounds, including judges, partners at top law firms, and tech researchers from leading companies. Lastly, we recognize the speed at which AI-based technologies are developing and the sheer knowledge gap that exists in accessing these technologies. To address this, regular learning circles are hosted by OpenNyAI, where participants are invited to attend and practically demonstrate their learnings and experiences in working with AI.

Conclusion

OpenNyAI's work shows a powerful example of using AI to improve justice in India. The project combines technology with expertise from different fields - like law, technology, and academia - to create useful AI tools. These tools, like the Jugalbandi Stack and the AI models for legal documents, make legal work easier and more accessible. The Maker Residency and learning circles are key parts of this. They bring people together to share ideas and learn about AI. This helps close the gap between advanced technology and greater social impact. OpenNyAI's efforts are an attempt at improving the experience of justice for every citizen.

References

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