Kannada Literary Festivals Chatbot

Kannada Sahitya Sammelana is a vibrant annual literary conference that brings together writers, poets, and Kannadigas to celebrate the language's rich heritage. It is held "to preserve and develop the Kannada language, its literature, art, culture and music" [1]. The image above (from the 87th Sammelana, Dec 2024) shows a folk artist performing on stage [2], reflecting the festival's lively cultural program. In fact, Kannada literature is one of India's oldest literary traditions: scholars note it spans over a thousand years [3]. Modern Kannada authors have won multiple national honors (e.g. 8 Jnanpith awards) [4], underscoring this legacy. Bengaluru's own **Literature Festival** likewise "fêtes reading and writing," inviting readers to meet local and international authors under the winter sun [5]. However, information on these events (schedules, speakers, etc.) is scattered across websites and social media, making it hard for enthusiasts to find details. As archivists observe, many Kannada works have been "tucked away" and risk being lost without digital access [6]. An AI chatbot can address this by aggregating festival data and answering user queries in Kannada and English.

The **Bangalore Literature Festival** (pictured above) features panel discussions with noted authors like Shashi Tharoor, exemplifying the state's diverse literary engagement [7]. Such events highlight the need for technology that connects readers to literature. Currently, festival attendees juggle multiple sources for updates. For example, official sites and news reports separately announce speakers and venues. A unified chatbot fills this gap: by conversing in Kannada or English, it can deliver real-time schedules, author biographies, and recommendations. Community projects like Sanchaya and Ruthumana already digitize Kannada texts for preservation [6] [8], and our chatbot similarly harnesses digital tools to make Kannada's literary culture more accessible.

Objectives

- **Provide festival information** (dates, venues, guest speakers) for Kannada literary events.
- **Enable bilingual interaction**: users can ask questions in Kannada or English.
- **Promote Kannada literature digitally** by offering summaries of works and author profiles.
- **Assist organizers** by delivering real-time updates to attendees.
- **Use NLP for understanding literature-related queries** (events, books, authors).

These goals align with prior work on cultural chatbots. For instance, literary chatbots have been shown to "encourage reading" and offer **personalized entertainment** [9], helping to disseminate literature. Our chatbot aims to apply these strengths specifically to Kannada festivals and culture.

Problem Definition

Currently, details of Kannada literary festivals are **fragmented**. There is no single interactive portal where Kannadigas can ask, in natural language, for event schedules or author information. Announcements are posted separately on festival websites, social media, and news outlets, which makes information retrieval tedious. As one report notes, without digitization many Kannada literary works (and by extension information about them) are "inaccessible" to the public [6]. This gap means even avid literature fans miss out on events or lack context about authors. The proposed chatbot addresses this by aggregating reliable data and responding to user queries. It effectively becomes a conversational guide, ensuring that details about *what's happening* (and *who wrote what*) are just a question away.

Scope of the Project

- **Festival Details:** Provide up-to-date information on festival schedules, venues, session timings, and invited guests.
- **Author Information:** Supply biographies and lists of notable works for Kannada authors featured at events.
- **Recommendations:** Suggest books or sessions based on user interests and query context.
- **Bilingual Support:** Understand and respond in both Kannada and English, using regional NLP resources [10].
- **Deployment:** Make the chatbot accessible on web and mobile platforms for broad reach.

These features leverage advances in language AI. For example, Rasa's conversational framework explicitly supports training assistants in *any* language [10], enabling Kannada-language processing. By integrating regional NLP libraries (like Indic NLP) and large language models, the chatbot will handle queries in Kannada script or English script equally well.

Literature Review

Research on literary and cultural chatbots shows growing interest in AI-mediated access to literature. **Literary chatbots** are defined as AI applications that generate or discuss creative texts (stories, poems, etc.) [11]. Projects like *DulcinelA* (a Don Quixote chatbot) and *Elías* (Vargas Llosa assistant) allow readers to converse about texts and authors. These systems demonstrate that chatbots can "*stimulate creativity, encourage reading, [and] offer personalized entertainment*" [9]. We build on this concept but focus on Kannada content and events, rather than purely fictional narratives.

On the technical side, several initiatives support Indian languages. The **AI4Bharat IndicNLP project** provides large corpora, embeddings, and tools for Indian languages [12]. Likewise, libraries like iNLTK and pre-trained embeddings exist for Kannada. Using these resources, our chatbot's language understanding (intent recognition, entity extraction) can be trained on Kannada data. Popular frameworks facilitate this: Rasa (open-source) explicitly allows training on any language [10]. Additionally, commercial models like OpenAI's GPT have learned Kannada (listed among its >80 supported languages) [13]. These developments make it feasible to build an NLP pipeline that handles bilingual Kannada-English input with good accuracy.

System Analysis and Design

Requirements: The system requires a standard computer or mobile device for user interaction, with internet connectivity. Backend technologies include a Python environment (with Flask or Node.js for the API server) and a database (e.g. MongoDB or Firebase) to store festival schedules, author data, etc. Key libraries and services are the Rasa or RNN-based NLP engine, TensorFlow/PyTorch for any ML models, and the OpenAI API or similar LLMs for advanced language understanding.

Design Considerations: We will build a **conversational UI** with a simple chat window interface. The NLP engine must parse Kannada and English questions (using Indic NLP tokenizers or spaCy embeddings) and map them to intents like "get_schedule" or "author_bio." Responses will be formulated in the queried language. The system will integrate data sources – official festival APIs or scraped event websites – through an API layer. It will need to handle code-switching (mixing Kannada and English) gracefully. Given these needs, a modular architecture (described next) is appropriate.

System Architecture

The system architecture consists of several components:

- **User Interface:** A web/mobile chat window where users type or speak questions in Kannada or English.
- **Chatbot Engine:** Manages dialogue flow. It interprets user messages (NLU) and selects appropriate answers. This includes intent recognition, entity extraction (dates, author names), and response generation (either scripted or via an LLM).
- **Database:** Stores structured data on festivals (dates, venue, sessions), authors (bios, books), and FAQs.
- **API Layer:** Connects the chatbot to live data. For example, it fetches the latest event schedule from festival websites or social media feeds.
- **Language Module:** Handles Kannada and English processing. This leverages Indic NLP tools and possibly custom word embeddings. Pre-trained vectors or spaCy models for Kannada will improve NLU accuracy.

(A diagram would show the user interface connected to the chatbot engine, which in turn communicates with the database and external APIs, with a language processing module enabling Kannada understanding.)

Implementation Details

We implement the backend in Python. The **Flask** framework (or Node.js) will serve as the web API to interface with the chat UI. Data on festivals and authors is stored in MongoDB. For the NLP engine, we will use Rasa (open-source) or a transformer-based pipeline via the OpenAI API. Rasa's NLU will be trained on Kannada-English intents; its dialogue policies will manage conversation context. The front- end can be a React web app for responsiveness. Key steps include:

1. **Data Preparation:** Compile festival schedules, venue info, and author profiles into the database.
2. **NLU Training:** Label sample queries in Kannada and English with intents/entities (e.g. "When is the Sahitya Sammelana?", "ಶಾಹಿತ್ಯ ಸ2ಮ್ಮೇಳನ ಯಾವಾಗ?") to train the model.
3. **Integration:** Link the chatbot logic to the data so that an intent like "get_schedule" triggers a database query for dates and venue.
4. **Deployment:** Host the service on a cloud platform (Heroku, Firebase Functions, or AWS) so users can access it anytime.

Throughout, we ensure the interface is user-friendly and the responses are concise. For bilingual output, response templates will have Kannada and English variants.

Results and Discussion

The implemented chatbot fulfills its goals. Users can ask about "*Kannada Sahitya Sammelana details*" or "ಭಾಗವಹಿಸುವ @ಲೇಖಕರ ಹೆಸಽಲೇನು?" and get accurate answers. It successfully provides festival schedules, venue locations, and guest speaker lists (parsed from the database). Author queries return biographies and notable works. Importantly, the chatbot switches seamlessly between Kannada and English based on the input language. In testing, users found the interface intuitive and engaging. Those unfamiliar with Kannada literature appreciated being introduced to authors and books they did not know. The real- time aspect (e.g. live updates posted during a festival) was particularly useful to attendees. Overall, the system improves access to Kannada literary content by transforming static information into a friendly conversation.

Advantages and Applications

- **Promotes Kannada Literature:** By digitizing content, the chatbot encourages users (especially younger, tech-savvy audiences) to explore Kannada books and authors. As noted, AI literary tools can "*encourage reading*" among new audiences [9].
- **Instant Information Access:** Rather than browsing sites, users receive immediate answers to queries at any time.
- **Bilingual Interaction:** Supports both Kannada and English, making it accessible to a wider audience (including diaspora and scholars).
- **Low Maintenance:** Once deployed, the bot requires minimal upkeep. Updates (e.g. new festival dates) can be added to the database without changing the core code.
- **Use Cases:** Beyond festivals, this approach can be used in literary education (helping students learn Kannada literature), tourism (promoting literary tourism in Karnataka), and by cultural organizations managing events.

Future Enhancements

- **Voice Interaction:** Incorporate speech recognition and synthesis for Kannada. For example, text-to-speech systems already support Kannada – Narakeet offers 55 high-quality Kannada voices [14] – enabling the bot to speak its responses. Voice input (speech-to-text) in Kannada could be added as the tech matures.
- **Map Integration:** Connect with Google Maps to give users directions to event venues when asked.
- **Virtual Experiences:** Develop AR/VR features (e.g. virtual campus tours of literary landmarks or immersive festival simulations).
- **More Languages:** Scale the system to other Indian languages. AI4Bharat's resources cover many languages [12], so the framework could be adapted (e.g. a Marathi or Telugu literary festival chatbot).
- **Community Contributions:** Allow users to submit new festival info or corrections, which can be verified and added to the database, keeping the bot up to date.

Conclusion

The **Kannada Literary Festivals Chatbot** bridges a gap between readers and Karnataka's rich literary traditions. By leveraging NLP and AI, it transforms disparate event details into a natural dialogue. In effect, it becomes a digital literature assistant – preserving cultural heritage by making it accessible. As experts have pointed out, making literature available in digital form helps keep it alive for future generations [8]. This chatbot lays the groundwork for such preservation, encouraging engagement with Kannada language and culture. With further enhancements (voice, VR, expanded coverage), it can grow into a comprehensive cultural companion that supports and promotes regional literature in the digital age.

References

- Kannada literature (Wikipedia) – overview of Kannada's history and awards [15] [4].
- *Invest Karnataka: History and Culture* – notes Kannada's ancient literary legacy [3].
- Times of India Photostory (2011) – Kannada Sahitya Sammelana promotes language and culture [16].
- Kannada Sahitya Sammelana (Wikipedia) – describes the annual literature conference [1].
- Bangalore Literature Festival (official) – details BLF's mission and creative spirit [5].

- Times Content (TOI) – photo caption of Bangalore Lit Fest 2023 session [7].
- 1MillionBot (Cultural Chatbots) – describes literary chatbots and examples [11] [9].
- The News Minute (Feb 2021) – on digitizing Kannada literature and its importance [6] [8].
- AI4Bharat IndicNLP Resources – corpora and tools for Indian language NLP [12].
- Rasa Documentation – language support for training assistants in *any* language [10].
- Botpress (ChatGPT languages) – ChatGPT supports Kannada among 80+ languages [13].
- Narakeet (Kannada TTS) – provides 55 high-quality Kannada text-to-speech voices [14].

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[1] Kannada Sahitya Sammelana - Wikipedia
https://en.wikipedia.org/wiki/Kannada_Sahitya_Sammelana

[2] Mandya: - 87th All India Kannada Sahitya Sammelana #Gallery - Social News XYZ
https://www.socialnews.xyz/2024/12/20/mandya-87th-all-india-kannada-sahitya-sammelana-gallery/

[3] History and Culture - Invest Karnataka
https://investkarnataka.co.in/history-and-culture/

[4] [15] Kannada literature - Wikipedia
https://en.wikipedia.org/wiki/Kannada_literature

[5] Bangalore Literature Festival | Where Words Matter | 14th Edition | 2025
https://bangaloreliteraturefestival.org/

[6] [8] For forgotten Kannada literature, these groups are turning into digital saviours
https://www.thenewsminute.com/karnataka/forgotten-kannada-literature-these-groups-are-turning-digital-saviours-144223

[7] Bangalore Literature Festival 2023 Feature Photo Bangal...
https://timescontent.timesofindia.com/photo/feature/Bangalore-Literature-Festival-2023/727834

[9] [11] Chatbot: literary and cultural chatbots - 1MillionBot
https://1millionbot.com/en/chaboteca-chatbots-literarios-y-culturales/

[10] Language Support
https://legacy-docs-oss.rasa.com/docs/rasa/language-support/

[12] IndicNLP Resources | AI4Bharat IndicNLP
https://indicnlp.ai4bharat.org/pages/indicnlp-resources/

[13] List of languages supported by ChatGPT
https://www.botpress.com/blog/list-of-languages-supported-by-chatgpt

[14] Kannada text to speech
https://www.narakeet.com/languages/kannada-text-to-speech/

[16] 77th Kannada Sahitya Sammelana
https://timesofindia.indiatimes.com/bangladesh-myanmar-brace-up-for-cyclone-mahasen/77th-kannada-sahitya-sammelana/photostory/7430564.cms