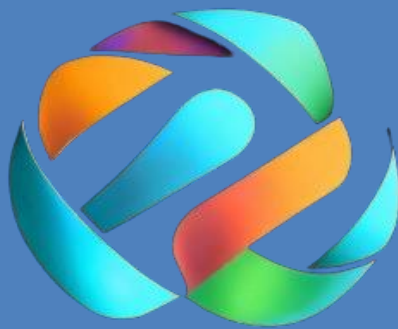# INDHIC SOFTWARE PRIVATE LIMITED

Brochure

Amplifying and Augmenting intelligence

Indhic Software Private Limited

At Indhic Software Private Limited, we seek to augment intelligence to various client products and platforms using our specialised AI consulting offerings. We are an AI consulting company, specialising in building robust and reliable AI-based workflows and pipelines for multiple clients across multi-disciplinary verticals. We have decades of experience in large MNCs such as Nokia, IBM, Aruba Networks, Airtel Labs and Zoro UK, and startups from diverse verticals in IoT, education tech, e-commerce, healthcare, supply chain and logistics leveraging classical AI and generative AI techniques.

We have deep expertise in these

- Automatic Prompt engineering and optimisation
- Search and recommender systems using traditional and vector databases
- NLP and data engineering pipelines
- LLM-based application development and workflows
- Agentic workflows, frameworks integration and RAG integration
- Data engineering and operations
- ML and LLM operations adhering to best practices
- LLM and classical DL training and fine-tuning
- Backend, deployment and architecting of scalable systems
- Generative AI training for corporates and Universities.
- ASR/STT/TTS and voice agent pipelines
- Scaling the NLP and ML pipelines

We have serviced multiple paying clients across diverse domains.

A few of recent offerings and ongoing projects are as below

- Edtech Agent development for Wadhwani AI
- Kannada Llama OSS finetuning on Meta's LLaMA model. Metrics evaluation done on Microsoft Indic leaderboard for various tasks.
- Accel portfolio company – Sales agent prototype design, implementation, and delivery.
- DSPY workshops and tutorial conducted recently at Postman office by Ganaraj.
- Opensource project in Accessibility being curated at people plus ai – in phase 2 now.
- ASR/TTS and agentic AI workflow development and AI layer integration for a large US based healthcare NGO

Detailed SDLC consulting across the Generative AI stack

We evaluate and experiment with various frameworks and orchestrate the best suitable frameworks and workflows that yields best in class implementations for various problem statements presented by the clients by detailed methodical process and careful scrutiny and analysis of requirements and iterations.

A: Application View:
LLMs in 1) Conversational (chatbots, RAGs) 2) Non-conversational (NER, RE, Classification, QA, Synthetic Data, Generation etc) and 3) Agentic Systems

B: Personal View (user):
Co-pilots for 1) knowledgeable user (eg: coding co-pilot for developer) 2) gullible user (eg: co-pilot for an ASHA worker who may not question/ independently evaluate the output) 3) Enterprise user etc

C: Scaling view:
1) MVP: what is a good MVP? Buy or Build? Wrap or Fine-tune 2) Pilot and 3) Scaling

D: LLM SDLC view:
1. TDD & Benchmarking: how to evaluate the system and components? how to collect/create benchmark data? What are acceptable and non-acceptable behaviours
2. Prompting (Wrapper Apps): prompting strategies - DSPy, TextGrad, promptbreeder, the Prompt Report.
3. Observability: logging, tracking cost, who, when, what, how?
4. Deploy: SLAs, Quantization techniques, Adapter-hubs
5. Guardrails: Value (eg. gender awareness, no physical harm etc) definition, specification, incorporation, implementation
6. Monitoring: [using LLMs], scaling evaluations to inference with no label data, feedback and ground-truth collection
7. Debug, Continuous Improvement: what is drift, how to detect it, which requests have problems, how to fix them, and how to steer the behavior? Is it possible in the first place
8. Controlled Generation: conformalization, NLI, LLMs as judges, Abstention techniques

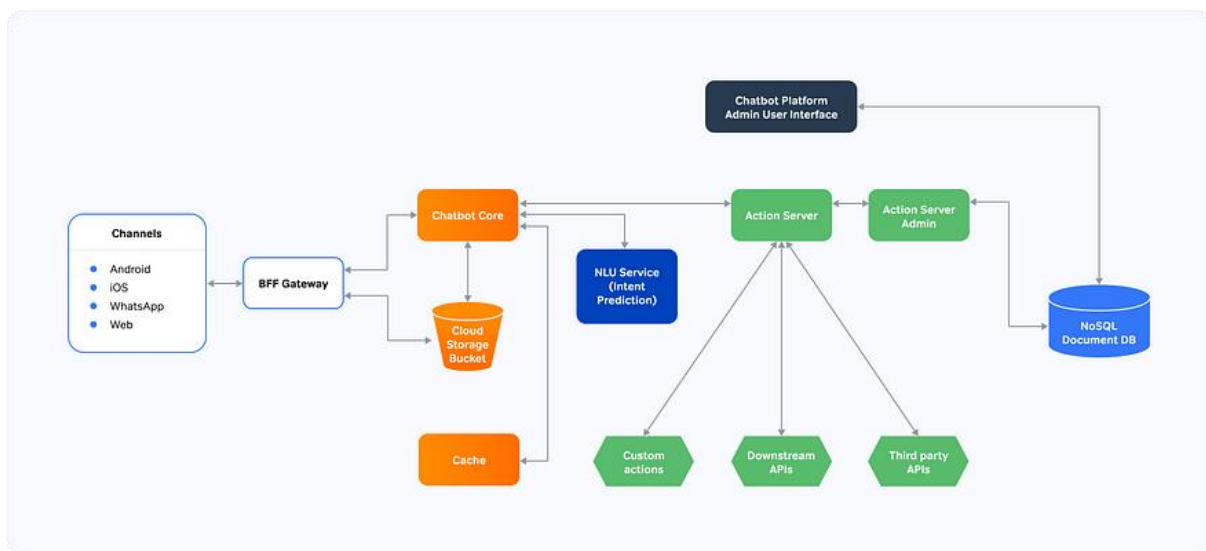Contact details: indhicltd@gmail.com

Few Portfolio highlights

Airtel Thanks App Platform (NLP, STT and TTS in Conversational AI domain)
Scaled thanks app platform from to 5 Million Average Users at Airtel labs. The platform was based on RASA layer with custom homebuilt NLP model for intent detection on Airtel customer data and queries. Also, trained the wav2letter based ASR / STT models on different languages using distributed computing on nvidia cluster on airtel data center. Deployed this on Airtel cluster for inference. Also trained and deployed Nvidia Tactotron TTS models as APIs. Designed and developed the architecture for scaling this for various customer channels of Airtel. This is in a production live platform being leveraged by Airtel Thanks app for Airtel customers over various channels. Experimented with various NLP tasks for customer segmentation and also for OCR tasks for invoice processing.

Company published high level details of the work done under their official tech blogs:
AI Chatbot Platform: https://medium.com/airteldigital/revolutionizing-customer-service-airtels-ai-powered-chatbot-6c581c0df6a7

Data collection, NLU Model training and inference: https://medium.com/airteldigital/cracking-the-code-understanding-customer-intent-in-multilingual-chatbot-conversations-13891eb4bb37

AI engineering for Accel Funded startup
We delivered these for Accel funded startup working on AI sales agent platform and product over the duration of 3 to 4 months. The below components were built and delivered to them
  1. DSPY based prompt engineering and automation on sales data action items, deadlines and other query points
  2. Data extraction and RAG on PDFs, text and images
  3. Design, development of multi-agent Agentic workflow for Sales Agent as per their requirements
     a. Autogen
     b. Crew AI and

        c. Llama-agents
        d. Langgraph
4. Agents monitoring and operation setup for the above.
5. Backend server that sets up the web-sockets interaction with these agents
6. ASR and TTS models and APIs integration advisory

ASR / TTS accessibility project for people plus ai

Implemented an assistive device that integrates ASR and TTS interfaces using various models, APIs for English and Indian languages

- Leverages Bhashini TTS apis for different languages
- Leveraged whisper v3 for ASR/TTS for English
- Integrated Bodhi, Sarvam and other langauges APIs
- Chunking and ASR audio streaming logic in the backend and experimentation with various hyperparameters
- Prompt engineering on various LLMs.
- Fine-tuning of ASR models and TTS models on voice data samples collected

AI Engineering for E-commerce - The Zoro UK Case Study

- Search and recommendation systems development
- Vespa and Colpali for image extraction and pdf data extraction and efficient RAG using Visual Language models for enhanced question and answering and better OCR.
- Leveraging DSPY for product attributes extraction given by Ganaraj in Postman Gen-ai meetup
- Multi-class Classifier using both Gen AI and classical Neural Network.

Detail: https://portkey.ai/blog/dspy-in-production/
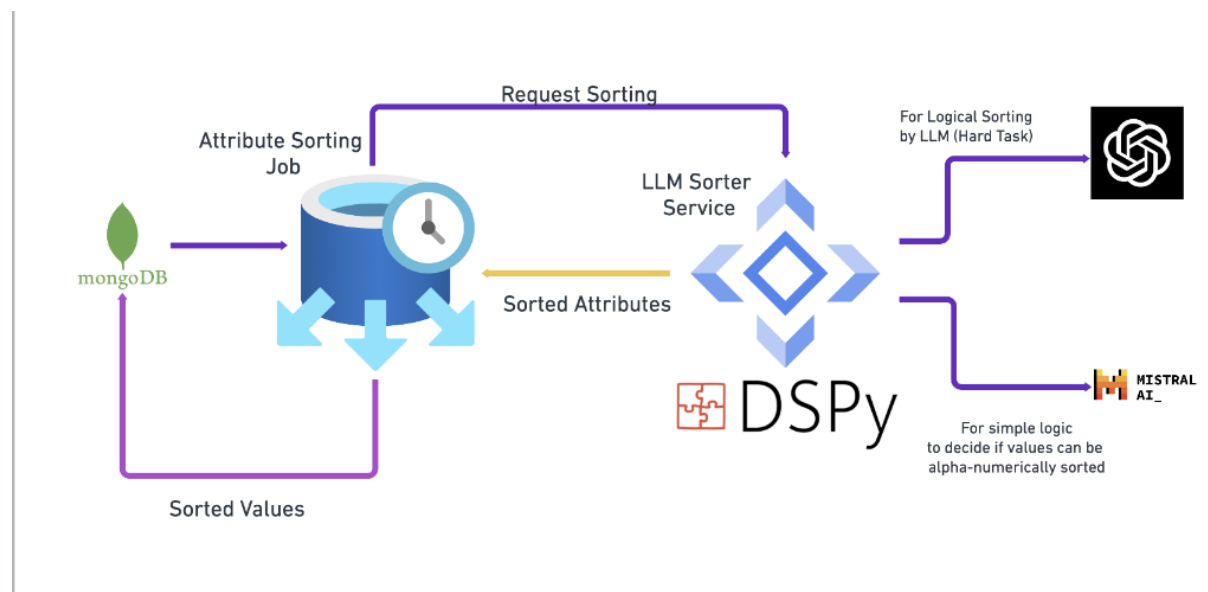
Along with this we have accumulated experience in classical AI/ML/NLP and Deep learning techniques, large scale system design and architecture