

NYD Hackathon 2025: Advanced RAG Challenge with Ancient Wisdom

The NYD Hackathon 2025

Code. Collaborate. Conquer.

By Yoga Vivek Group

Advanced RAG Challenge with Ancient Wisdom

Challenge Overview

Develop an innovative AI-powered solution to extract, understand, and communicate the profound wisdom of the Bhagavad Gita and Yoga Sutras using advanced Retrieval-Augmented Generation (RAG) methodologies.

Dataset

- Comprehensive Bhagavad Gita dataset (provided)
- Language support (English for now but keep it extensible optionally)
- Full text, chapter-wise breakdown, translations and more available here

RAG Methodologies which can be used/explored

- Graph RAG
- Advanced RAG
- Agentic RAG
- Hybrid Retrieval Approaches
- Semantic-based Retrieval
- Multi-vector Retrieval

Technical Requirements

Pipeline Expectations

- Robust and scalable RAG implementation
- Interactive chatbot interface
- Advanced contextual understanding
- High-quality, nuanced philosophical responses
- Multilingual query handling

Deliverables

1. RAG Pipeline

- Modular, well-documented code
- Performance metrics
- Optimization techniques
- Jupyter notebook demonstrations

2. Chatbot Application

- Simple User-friendly interface
- Contextual response generation

3. Documentation

- Technical documentation
- Architecture design
- Methodology explanation
- Installation guide

Evaluation Criteria

Technical Excellence (40 points)

- RAG approach complexity (15 points)
- Code quality (10 points)
- Performance optimization (15 points)

Functionality (30 points)

- Information retrieval accuracy (10 points)
- Response quality (10 points)
- User interface experience (10 points)

Innovation (20 points)

- Novel RAG implementation (10 points)
- Creative problem-solving (10 points)

Presentation (10 points)

- Technical explanation clarity (5 points)
- Demonstration effectiveness (5 points)

Timeline

Phase 1: Preparation (By Dec 22, 2024)

- Dataset distribution
- Environment setup
- Team formation

Phase 2: Development (2 weeks)

- Week 1: RAG pipeline development
- Week 2: Chatbot implementation,Refinement

Phase 3: Submission & Evaluation (1 week - By Jan 12, 2025)

- Documentation submission
- Presentation preparation
- Final demonstration

Recommended Technology Stack

- **Language Models:** Open Source or Use Student Credits if you have
- **Embedding:** Sentence Transformers,Embedding Models
- **Vector Databases:** Pinecone, Chroma, Milvus, PSQL etc.
- **Frameworks:** LangChain, LlamaIndex etc.
- **Frontend:** Streamlit, Gradio, React

Prizes & Recognition

- Top 3 teams receive special recognition (INR - 20K, 10K, 5K)
- Potential internship opportunities
- Possibility of publication
- Mentorship and networking

Submission Guidelines

- Complete GitHub repository
- Detailed README
- Presentation slides
- Optional video demonstration

Additional Considerations

- Open-source libraries encouraged
- Ethical AI principles mandatory
- Creative interpretations welcome

Support

- Dedicated technical support channel
- Planned checkpoints and mentorship sessions (Dec 29,2024 and Jan 5, 2025)
- Regular Q&A opportunities

Disclaimer: This hackathon is about exploring the intersection of AI technology and philosophical wisdom. Participants are encouraged to approach the challenge with creativity, technical rigor, and respect for the philosophical depth of the Shrimad Bhagavad Gita.