"L&T IntelliAssist: AI-Driven Chat Assistant for Product Support"

Project Roadmap Documentation

★ **Project Overview**

- **Project Name**: “L&T IntelliAssist: AI-Driven Chat Assistant for Product Support”.
- **Project Summary**:
  The L&T IntelliAssist project aims to leverage a fine-tuned Phi-4 Large Language Model (LLM) to provide users with a smart, AI-powered chat assistant that delivers product-specific information. Initially, the focus will be on L&T's construction products (machinery, plants, etc.), with future plans to expand to other divisions. The assistant will be continuously updated by fine-tuning the model with new user manuals and product guides as they are released, ensuring the AI provides the most accurate and up-to-date information at all times.
- **Scope**:
  - **In Scope**: Fine-tuning the Phi-4 model with product manuals and user guides.
  - **Out of Scope**: Integration of the chat assistant with external platforms or customer-facing systems (although this may be a future phase).
  - **Future Scope**: Expand the assistant’s capabilities to cover all L&T products across various divisions.
- **Goals and Objectives**:
  - Develop a fully functional chat assistant based on the Phi-4 LLM model that answers product-related queries.
  - Ensure continuous model updates by fine-tuning with new user manuals.
  - Achieve scalability for future expansion into all L&T divisions (e.g., construction, engineering, manufacturing).
  - Ensure the assistant improves user experience and reduces reliance on human support.
- **Stakeholders**:
  - **Project Manager**: Responsible for planning, organizing and completing the project.
  - **AI/ML Development Team**: Responsible for fine-tuning and deploying the model.
  - **Product Management Team**: Provides user manuals, technical specifications, and feedback.
  - **End Users**: Internal employees, clients, and partners who will use the assistant for product-related queries.

★ **Project Vision & Strategy**

- **Vision Statement**:
  Empower users with an AI-driven assistant that delivers accurate, on-demand answers to product-related queries and is continuously updated with the latest product information.
- **Mission Statement**:
  Fine-tune the Phi-4 LLM model using user manuals from L&T's product range to create an intelligent chat assistant that provides reliable and up-to-date technical information, reducing support efforts and increasing operational efficiency.
- **Strategic Alignment**:
  This project aligns with L&T's ongoing digital transformation strategy, aiming to streamline support functions, improve product accessibility, and provide a cutting-edge AI solution for customer interactions.
- **Success Criteria**:
  - Successful deployment of a functional chat assistant.
  - Continuous fine-tuning of the model with new product manuals.
  - Increased user satisfaction and reduced query resolution time.

★ **Project Phases & Milestones**

- **Phase 1: using Llama3 model to extract dataset from given user manual**
  - Gather product manuals for initial fine-tuning.
  - Define project success metrics and milestones.
  - Identify key challenges (data formatting, model tuning, integration).
- **Phase 2: Fine-Tuning phi-4 with the extracted dataset**
  - Fine-tune the Phi-4 LLM model using product manuals and user guides.
  - Test the model with a set of sample queries to evaluate its understanding and accuracy.
  - Address any data or model challenges.
- **Phase 3: Manual evaluation and optimisation**
  - Deploy the first version of the AI assistant.
  - Begin user acceptance testing (UAT).
  - Gather feedback and adjust the model for optimal performance.
- **Phase 4: Continuous Updates & Model Improvement**
  - Fine-tune the model with each new user manual that is released.
  - Regular model updates and optimizations based on new product features and user feedback.
- **Phase 5: Expansion & Scalability**
  - Expand the assistant to cover all L&T product divisions.
  - Integrate the assistant with internal systems for better accessibility.

★ **Risk Management**

- **Risk Identification**:
  - Inconsistent or incorrect data formats in user manuals.
  - Model overfitting or underfitting during fine-tuning.
  - Technical challenges in integrating the assistant with existing systems.
- **Risk Mitigation**:
  - Standardize the data entry process for manuals.
  - Regular model evaluations and adjustments to maintain accuracy.
- **Contingency Plans**:
  - Backup plans for data handling.
  - Use of alternative models if Phi-4 fails to meet expectations.

★ **Budget & Financial Overview**

- **Project Budget**:
  - Cost for Phi-4 access and cloud resources.
  - Personnel and training costs for the AI/ML team.
  - Other operational costs (software, tools, etc.).
- **Cost Tracking**:
  - Monthly budget tracking based on project milestones and team utilization.
- **Funding Sources**:
  - Internal funding from the L&T Construction budget.

★ **Project Closure**

- **Closing Criteria**:
  - Fully functional and deployed AI assistant meeting success metrics.
  - Successful model fine-tuning with the latest manuals.
- **Post-Implementation Review**:
  - Analyze the success of the project and areas for improvement.
- **Knowledge Transfer**:
  - Provide documentation on AI model fine-tuning and deployment processes.

★ **Appendices**

- **Supporting Documents**:
  - Sample user manuals and product documentation.
  - Training logs and model performance reports.
- **References**:
  - Phi-4 model documentation.
  - AI/ML best practices for fine-tuning models.
