MeetIn: Enhanced Meeting Intelligence with RAG Integration

Revolutionizing meeting transcription and analysis using advanced AI technologies.

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Introduction

1 **Voice-to-Text Transcription**

2 **RAG Integration**

3 **Intelligent Summaries**

Overview: MeetIn, a meeting intelligence application, uses advanced voice/video-to-text technology to transcribe meetings and employs a Retriever-Augmented Generation (RAG) pipeline for enriching these transcriptions with relevant data, providing actionable insights.

Objectives and Goals:

- Develop an accurate transcription service integrated with a RAG pipeline for enhanced contextual understanding.
- Provide a tool for improved decision-making and efficient meeting management.

Importance and Relevance: This project aligns with academic learning and industry needs, demonstrating the application of complex algorithms to improve meeting productivity and strategic decision-making in a business context.

Project Description

Detailed Description: MeetIn transforms audio recordings into searchable transcripts and enriches them with a Retriever-Augmented Generation (RAG) pipeline, enhancing meeting productivity.

Specific Problem: MeetIn addresses the challenge of underutilized meeting information by providing structured, actionable summaries.

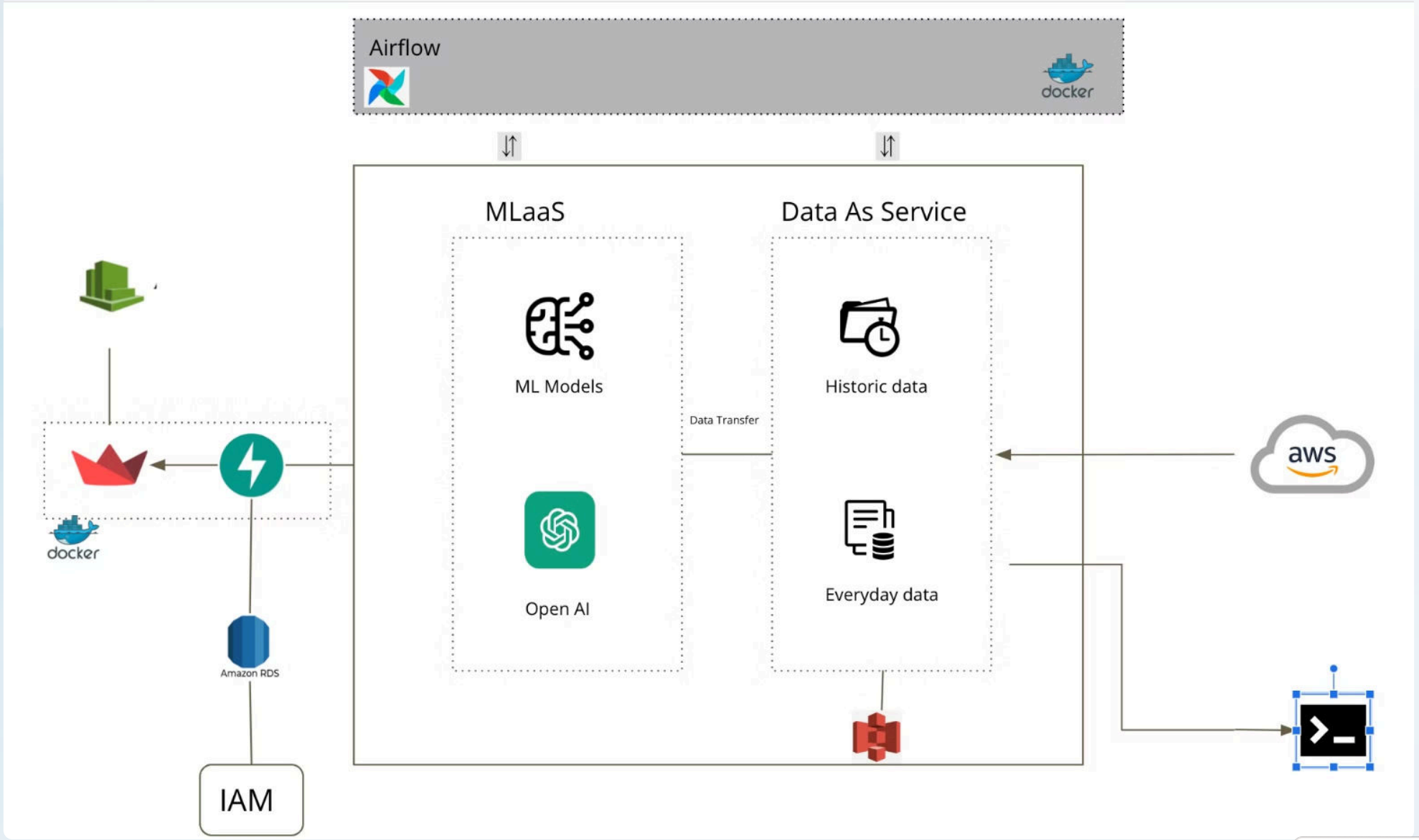
Scope: The project includes voice-to-text transcription, RAG integration, and a user-friendly interface to support informed decision-making across business environments.

MeetIn's Architecture

Overview: Integrated ML, data, and workflow services for efficient meeting intelligence.

1. **Airflow & Docker:** Orchestrates workflows and runs containerized components.
2. **ML as a Service:** Hosts ML models and integrates AI capabilities.
3. **Data as a Service:** Manages historical and real-time data on AWS.
4. **Amazon RDS & IAM:** Provides database and secure access management.

This architecture supports robust data processing and analysis through ML workflows, ensuring efficient and secure meeting intelligence.



Data Collection and Preprocessing

Data Sources and Nature

Historical records and daily transactions to enable analysis and ML model training.

Data Collection

Automated systems gather data continuously, integrating with business processes.

Data Preprocessing

Cleaning, normalizing, and transforming data, including NLP techniques.

This framework optimizes data for high-quality insights and machine learning.

RAG Pipeline Implementation

Data Preparation

- Standardize meeting transcripts for consistent processing.
- **Retrieval System**: Implement an Elasticsearch index to efficiently retrieve relevant documents.
- **RAG Model Integration**: Integrate a pre-trained RAG model to generate enriched outputs.
- **Model Finetuning**: Consider tailoring the RAG model to our specific needs.
- **Integration into MeetIn**: Seamlessly incorporate the RAG pipeline into the application workflow.

Performance Metrics

Metric	Description	Target
Transcription Accuracy	Word Error Rate	< 15%
Summary Relevance	Human Evaluation Score	> 7/10
Action Item Extraction	F1 Score	> 0.9

Improving Metrics

Expand Knowledge Base

Increase relevant data for retriever

Fine-tune Models

Optimize RAG pipeline for meetings

User Feedback Loop

Incorporate user input to refine system

Deployment Plan

1 Initial Setup

Configure AWS EC2 instances, set up MySQL databases, and define IAM roles and policies.

2 Package the application into Docker containers

3 Integration and Testing

Implement Airflow, use GitHub Actions

4 Launch

Deploy to EC2, activate CloudWatch

5 Post-Deployment

User testing, routine updates

This plan emphasizes security, efficiency, and scalability for a robust meeting intelligence solution.

Future Work

1. **Multi-language Support**

   Expand to global markets

2. **Real-time Analysis**

   Provide insights during ongoing meetings

3. **Integration with Project Management Tools**

   Seamless workflow for action items

4. **Emotion Analysis**

   Capture sentiment and engagement levels

Conclusion

Standardizing Meeting Transcripts

The integration involves standardizing and preparing meeting transcripts.

Setting Up Retrieval System

The project includes setting up a robust retrieval system.

Integrating RAG Model

Integrating and fine-tuning a pre-trained RAG model is part of the process.

Seamless Workflow Integration

Elements are seamlessly incorporated into the existing application workflow.

Key Takeaways:

1 **Razor-Sharp Relevance**

The RAG pipeline delivers pinpoint-accurate and context-rich meeting outputs, elevating your meeting summaries and follow-ups.

2 **Lightning-Fast Responsiveness**

Optimized caching and asynchronous processing turbocharge the user experience, with blazing-fast response times.

3 **Delighted Users**

Continuous feedback and UI enhancements have users raving about the intuitive, responsive, and user-friendly system.

4 **Rock-Solid Reliability**

Robust infrastructure upgrades ensure uninterrupted, dependable access to the application's powerful features.

Final Thoughts

1 **Transformative AI Integration**

The RAG pipeline in MeetIn leverages cutting-edge AI to enhance meeting dynamics.

2 **Continuous Innovation**

This project highlights the importance of user-centered design and ongoing adaptation.

3 **Positioning as a Leader**

The RAG integration sets a strong foundation for MeetIn's future as an intelligent meeting platform.

Thank You!

We appreciate your time and attention. This presentation has outlined our key initiatives and future plans.