

# 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.

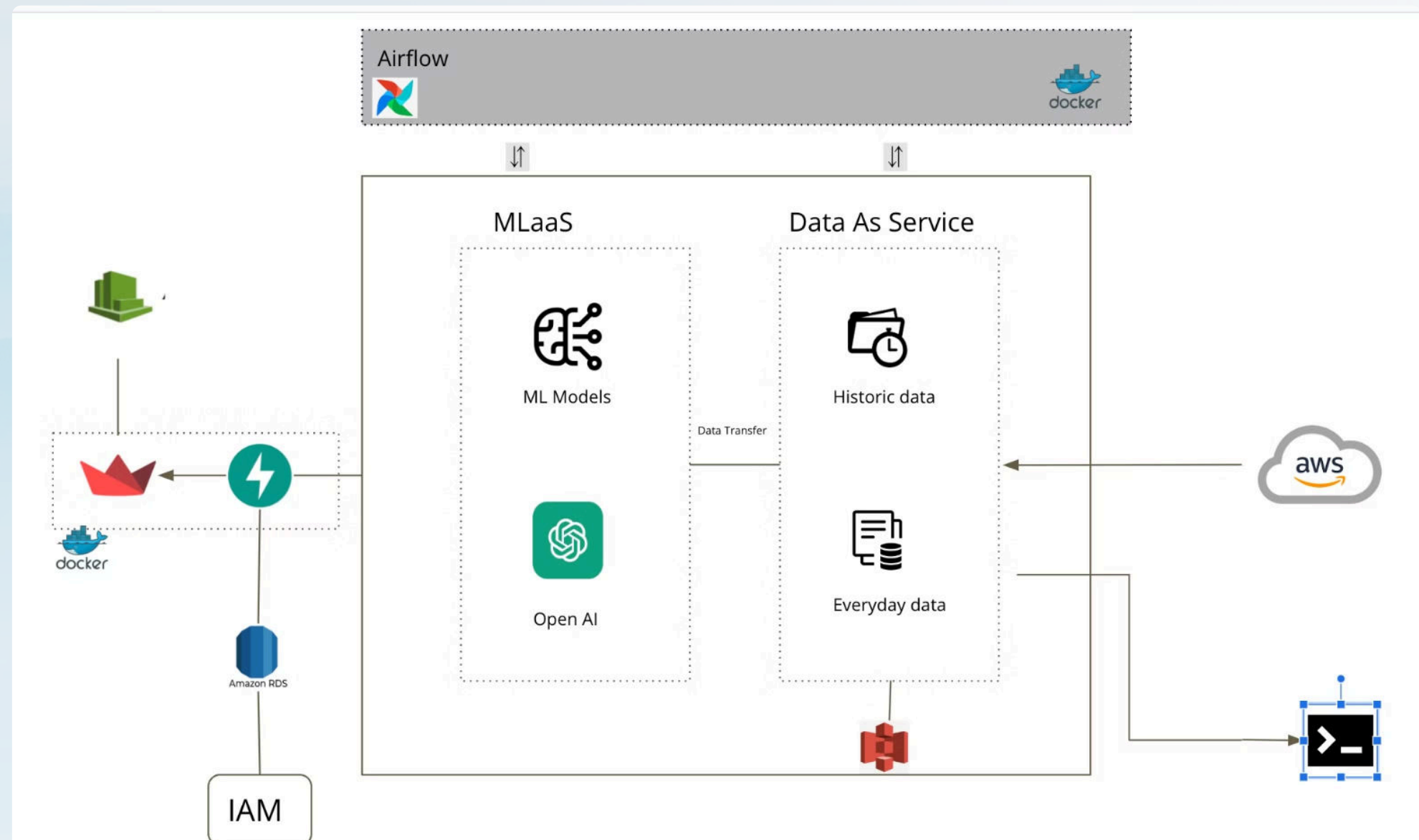
**Scope:** The project includes voice-to-text transcription, RAG integration, and a user-friendly interface to support informed decision-making across business environments.

# 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



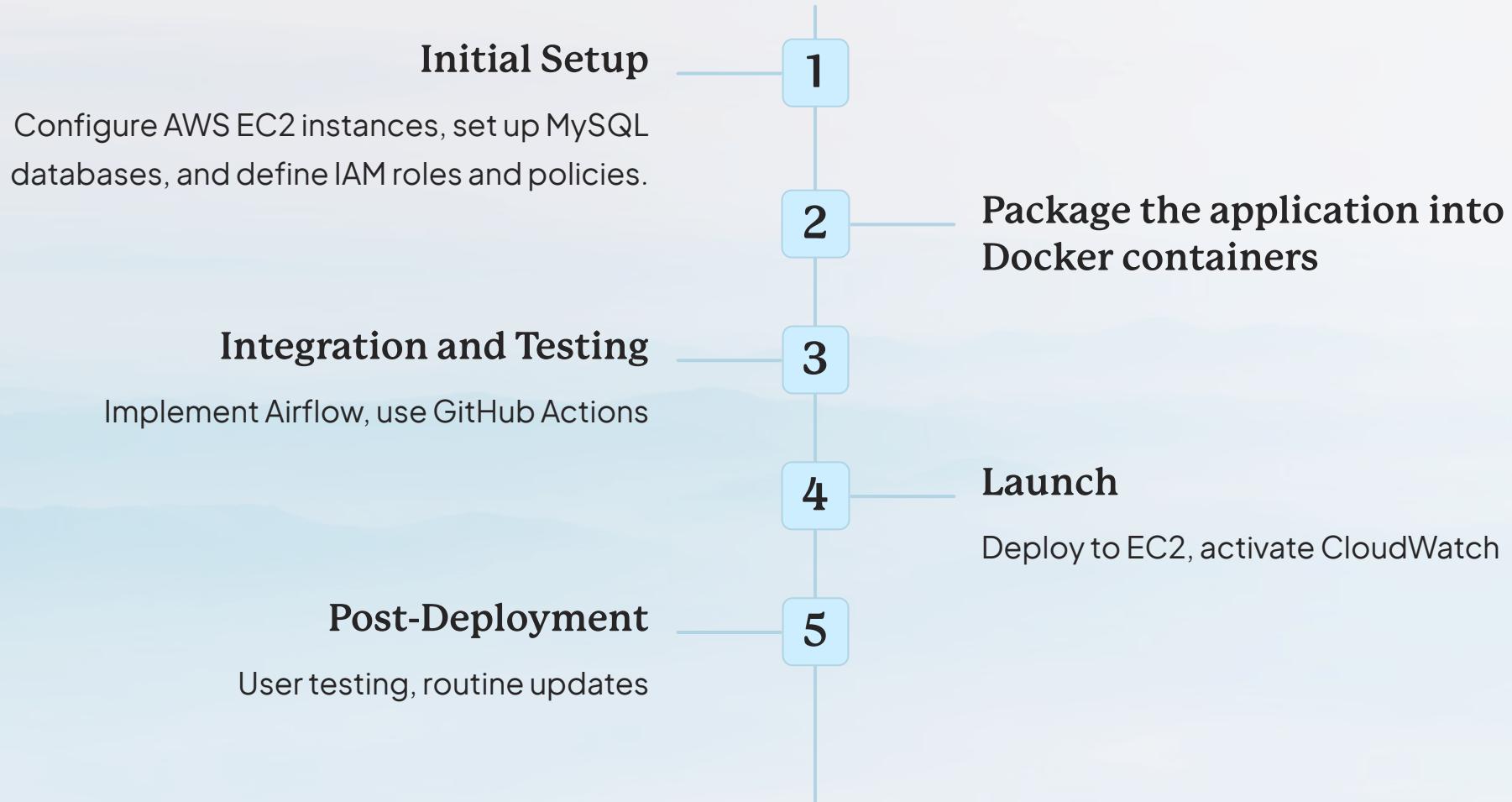
## User Feedback Loop

Incorporate user input to refine system





# Deployment Plan



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.

