

AI-Powered Support Copilot

Objective

The objective of this project is to develop a **cloud-based AI-powered Support Copilot** designed to assist customer support executives throughout the issue lifecycle. This intelligent assistant will analyse incoming issues, provide actionable insights, recommend personalised message templates, and summarise customer conversations to accelerate issue resolution and improve customer satisfaction.

The solution will expose all functionalities via **RESTful API endpoints** to ensure seamless integration with existing support portals, ensuring real-time responsiveness with a maximum response time of **15 seconds**.

Key Features

1. Issue Intake & Analysis

- Automatically analyse new support issues.
- Identify similar past issues and their resolutions.
- Retrieve customer's issue history.
- Assign severity levels: Low, Normal, High.
- Flag critical unattended issues for immediate attention.

2. Support Executive Guidance

- Recommend message templates considering:
 - Issue details
 - Customer's past issues
 - Severity and priority
- Help agents respond consistently and professionally.

3. Conversation Summarisation

- Automatically generate concise summaries of entire conversations.
- Summaries used for historical review and knowledge base updates.

4. Real-time API Integration

- RESTful API endpoints for:

- Issue analysis
 - Template recommendation
 - Conversation summarization
- Ensures real-time guidance with responses within 15 seconds.

Technology Stack

Layer	Technology
API Layer	FastAPI / Flask (Python)
AI/NLP Layer	LLM models (OpenAI, AWS Bedrock)
Database	MySQL / Amazon RDS
Search Engine	FAISS / ElasticSearch
Hosting Platform	AWS (Lambda, API Gateway, ECS)
Security	OAuth 2.0 / JWT + HTTPS

Benefits

- Reduces response time of support executives.
- Ensures message consistency and professionalism.
- Enables proactive monitoring of unattended issues.
- Seamlessly integrates into existing support portals.
- Scalable, secure, and compliant with data privacy regulations (e.g., GDPR).

Compliance & Security Considerations

- All APIs secured via OAuth 2.0 or JWT.
- Data encrypted both at rest and in transit.
- System designed for GDPR compliance.

Performance Goals

- Maximum API response time: **15 seconds**
- Scalable architecture supporting increasing issue volumes.
- High reliability and fault tolerance.

Deliverables

- **API Documentation** (Swagger/OpenAPI)
- **Architecture Diagram** (Draw.io / Lucidchart)
- **Data Flow Diagram**
- **Python Code** (FastAPI / Flask REST APIs)
- **MySQL Queries**
- **System Design Explanation**
- **README.md** (Project usage instructions)
- **Final PDF Report**

Target Users

- Customer support executives using existing support portals.
- Support management teams monitoring issue trends.

Project Timeline

Phase	Duration (Estimated)
Requirements Gathering	1 week
Architecture Design	1 week
API Development	3 weeks
AI/NLP Integration	2 weeks
Testing & Optimization	2 weeks
Documentation & Delivery	1 week

Conclusion

The AI-Powered Support Copilot will empower customer support teams with real-time AI-driven guidance, enabling faster issue resolution and enhancing customer satisfaction. Its modular API-first design ensures easy integration, scalability, and maintainability.