AI Feedback System

Project Report

Date: December 7, 2025 | Status: Fully Deployed & Live

Architecture: Hybrid Cloud (Render + Vercel)

1. Executive Summary

The AI Feedback System is a production-ready, full-stack web application designed to automate customer feedback handling using Artificial Intelligence. The system collects user feedback, analyzes sentiment, generates AI-based replies, and provides actionable insights via a secure administrative dashboard. The solution follows a Hybrid Cloud Architecture, combining the power of server-side processing with ultra-fast frontend delivery.

2. System Architecture Overview

Backend – AI Engine & Business Logic
Hosting: Render (Cloud PaaS)
Technology Stack: Node.js (v18+), Express.js
AI Provider: OpenRouter (GPT-3.5 Turbo)
Database: File-based Storage (feedback.json)
Public API: https://ai-feedback-backend-88pd.onrender.com

Frontend – Two Independent Dashboards (Vercel)
User Dashboard (Public)
URL: https://ai-feedback-system-ngu9.vercel.app/
Features: Star rating, feedback form, instant AI reply, responsive design

Admin Dashboard (Private)
URL: https://ai-feedback-system-omega.vercel.app/
Features: Sentiment analysis, AI summaries, business insights, charts, secure password access

3. Key Features Delivered

Feature	Description	Status
Instant AI Reply	Context-aware AI responses in under 3 seconds	Active
Smart Analytics	Sentiment detection, summary, action suggestions	Active
Secure Admin Panel	Password-protected administrative interface	Secure
Hybrid Deployment	Render backend + Vercel frontend	Deployed
Auto Scaling	Independent scaling of frontend and backend	Ready

4. Deployment Configuration

Backend (Render)
Build Command: npm install
Start Command: npm start
Environment Variables:
NODE_ENV = production
OPENROUTER_API_KEY = Configured
ADMIN_PASSWORD = Configured

Frontend (Vercel)
Two separate deployments for User and Admin Dashboards
Auto routing via vercel.json with clean SPA navigation

5. Maintenance & Continuous Deployment

The system follows a full CI/CD model.
Update Workflow:
1. Make changes in code
2. Commit changes to GitHub
3. Push to main branch

Auto Deployment Time:
Render Backend: ~2 minutes
Vercel Frontend: ~30 seconds

6. Live Production Links

Component	Status	Live URL
Backend API	Live	https://ai-feedback-backend-88pd.onrender.com
User Dashboard	Live	https://ai-feedback-system-ngu9.vercel.app/
Admin Dashboard	Live	https://ai-feedback-system-omega.vercel.app/

7. Conclusion

The AI Feedback System successfully demonstrates the integration of Artificial Intelligence, full-stack development, cloud deployment, and business analytics into a complete SaaS-style platform. The system provides automated engagement, secure administration, real-time insights, and future-ready scalability.