Treasure Coast AI

Full Expanded Blueprint for Multi▪Tenant SaaS Chatbot Platform

Hybrid Neon-Glass Edition

Executive Summary

This document outlines the complete architecture, engineering design, feature set, automation engine, database schema, and operational guide for Tyler's Treasure Coast AI SaaS chatbot platform.

This system supports multi■tenant businesses, advanced bot automation, lead capture, analytics, billing, and a premium dark neon-glass UI.
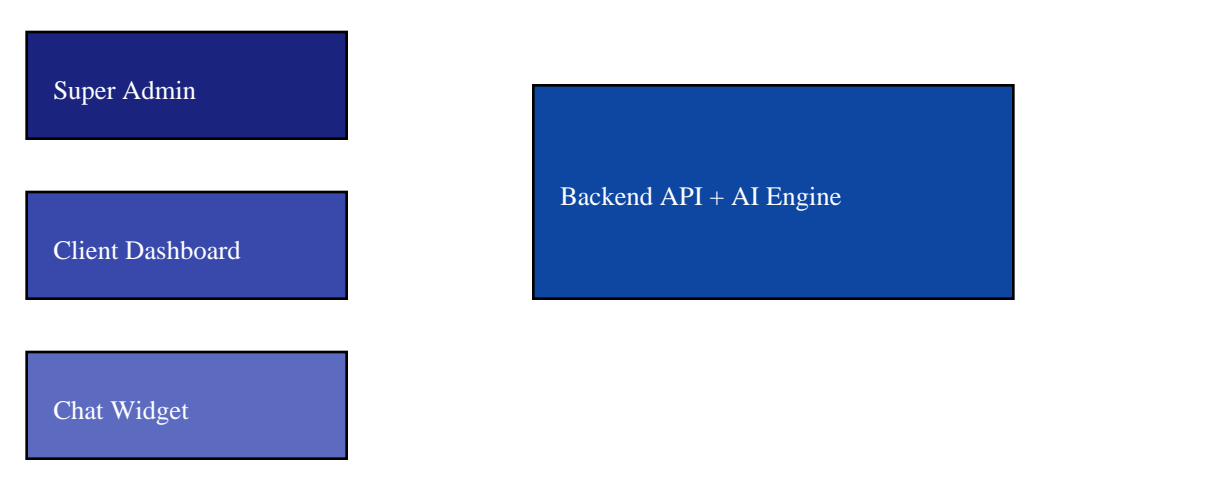
System Overview

The platform provides full lifecycle chatbot automation for businesses. Each client (workspace) can create multiple bots, manage leads, view analytics, and run automation flows.

A Super Admin interface allows Tyler to manage all tenants, plans, subscriptions, and system usage.

High-Level Architecture Diagram

Below is a simplified placeholder diagram describing system components.

Super Admin

Client Dashboard

Chat Widget

Backend API + AI Engine

Database Schema

Key tables include Users, Workspaces, WorkspaceMemberships, Bots, KnowledgeBase items, Conversations, Messages, Leads, Plans, WorkspaceUsage, and SystemLogs.

All records relate back to a Workspace ID for tenant isolation.

Backend Logic

The backend uses Next.js API routes with Prisma ORM. Authentication uses JWT. Every request is validated for workspace isolation.

Chat flow: Widget → /api/chat → Validate → Store message → Fetch KB → AI Response → Log usage → Return response.

Automation Engine V1 + V2

V1 allows simple rules: keyword triggers, fallback responses, office hours logic.

V2 introduces a full visual flow builder with node-based sequencing, variable storage, AI-assisted flow creation, and event-driven triggers.

Chat Widget Integration

The widget loads via a small JS script. It creates a floating bubble and chat panel with theme customization.

It maintains conversationId in localStorage and communicates with backend APIs.

AI Engine Logic

OpenAI chat completions API is used. Each bot has a custom system prompt combining brand tone, variables, knowledge base results, and conversation history.

Super Admin Guide

Admins can view all workspaces, impersonate accounts, manage plans, adjust quotas, and view system logs.

Client Dashboard Guide

Clients can create bots, manage their knowledge base, configure automations, view analytics, and manage billing.

Analytics System

Daily message counts, lead charts, and bot performance metrics are provided through line and bar charts.

Billing & Usage Limits

Stripe handles plan subscriptions. Webhooks sync plan changes. Usage limits enforce bot and message quotas.

Security Model

Workspace isolation enforced at every DB query. JWT authentication, rate limiting, and secure API key storage are implemented.

Error Handling

System logs track errors. User-friendly messages display on UI. API gracefully degrades on OpenAI failures.

Future Roadmap

Planned expansions: CRM system, SMS messaging, Voice AI, Contact pipelines, appointment scheduling, and full omnichannel automation.

Deployment Notes

Configure environment variables. Run Prisma migrations. Deploy on Vercel or Replit. Use seed script to initialize demo data.