DIVESCALE CASE STUDY

PORTFOLIO OVERVIEW

AI Automation Portfolio

Seven AI-powered projects spanning ecommerce, healthcare, construction, fitness, document intelligence, clinical operations, and workplace safety.

Conversational AI | ML & Prediction | LLM Orchestration | Semantic Search | Voice AI | Computer Vision

THE AI OPPORTUNITY

Across 7 Projects, One Pattern

Businesses across every vertical share the same constraint. Critical data sits in unstructured formats, manual workflows, and disconnected systems. Each project in this portfolio uses AI to solve that constraint.

The pattern is repeatable. Turn messy human input into structured, actionable output. Whether the domain is ecommerce or workplace safety, the AI architecture mirrors itself.

7	20+	6
AI PROJECTS	AI TECHNOLOGIES	INDUSTRY VERTICALS

Unstructured to Structured

AI extracts meaning from WhatsApp, emails, PDFs, voice, and handwritten notes.

Detection to Action

Anomaly detection, predictive models, and conflict engines alert users before problems compound.

Conversational Interface

Every project ships a natural-language interface. Chatbots, copilots, and voice assistants for domain-specific tasks.

PORTFOLIO INDEX

01 **Smart Shop AI** · Ecommerce

02 **Fenestra** · Construction

03 **Pet Health Care** · Veterinary

04 **CareMind** · Healthcare

05 **DocuPulse** · Fintech

06 **Serene Yoga** · Wellness

07 **Safety Operations** · Safety

PROJECT 01 · ECOMMERCE

Smart Shop AI

Ecommerce Intelligence Platform

Merchants managed Shopify, Google Ads, and Meta Ads as three separate businesses. Reconciling them consumed 9 hours per week. The AI unified them into a single dashboard with conversational analytics.

BEFORE

Flat customer lists, manual platform switching, spreadsheets for reconciliation.

PAIN

36% of owner time on admin. Underperforming ads ran for days before detection.

SOLUTION

LangChain AI chatbot, RFM segmentation, anomaly detection across revenue, ROAS, stock.

OUTCOME

2.4x ROAS. 38% fewer stockouts. 18% conversion lift. 91% of merchants retain more customers.

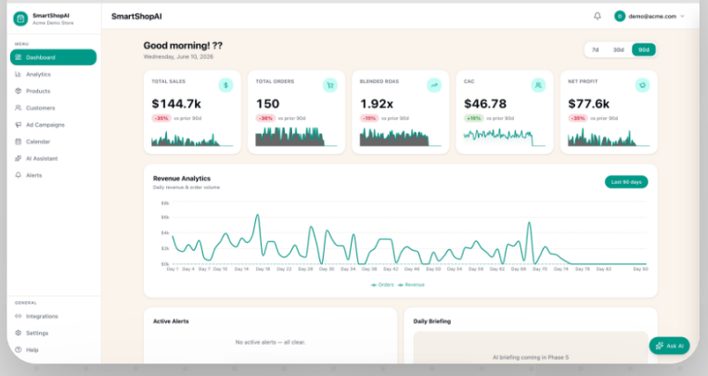
2.4x
ROAS IMPROVEMENT

8-12 hrs
WEEKLY TIME SAVED

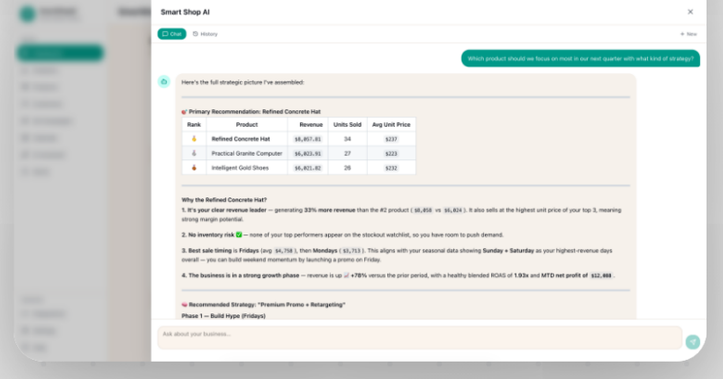
38%
STOCKOUT REDUCTION

LangChain · OpenRouter · OpenAI · NestJS · PostgreSQL · Redis

Smart Shop AI / Dashboard



Smart Shop AI / AI Chat



PROJECT 02 · CONSTRUCTION

Fenestra

AI Order Intelligence for Fenestration

Distributors processed orders over the phone, via WhatsApp, email, and handwritten notes. Each order averaged 28 minutes. One in twelve contained an error. 34% of after-hours leads went unanswered.

BEFORE

Phone-only ordering. 28 min per order. 8.3% error rate. 25,000+ SKUs to memorize.

PAIN

34% of after-hours leads lost. 66% response rate meant the business bled revenue while closed.

SOLUTION

Claude + LangChain AI reads WhatsApp, email, handwriting. Semantic SKU matching from 25K catalog.

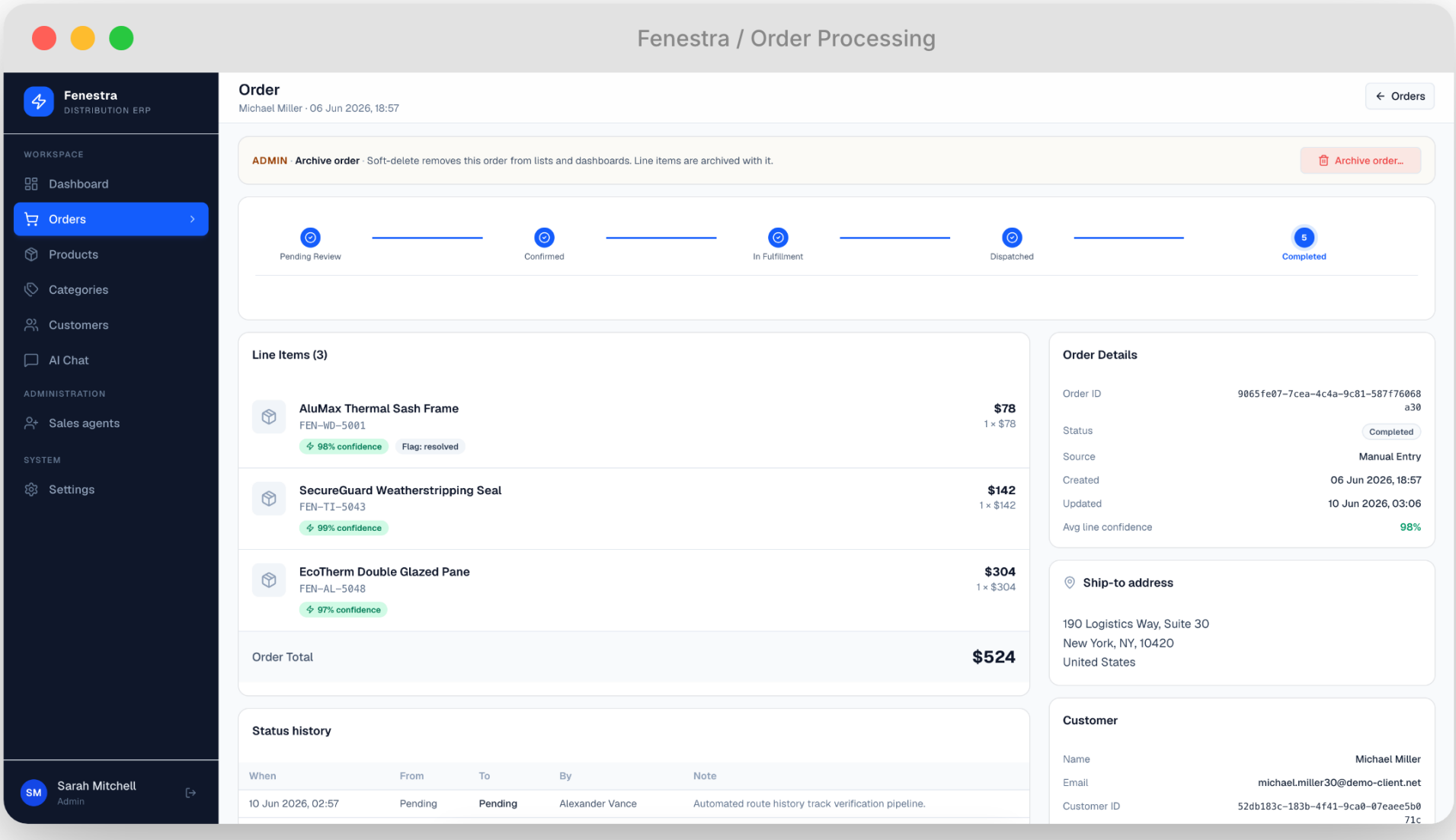
OUTCOME

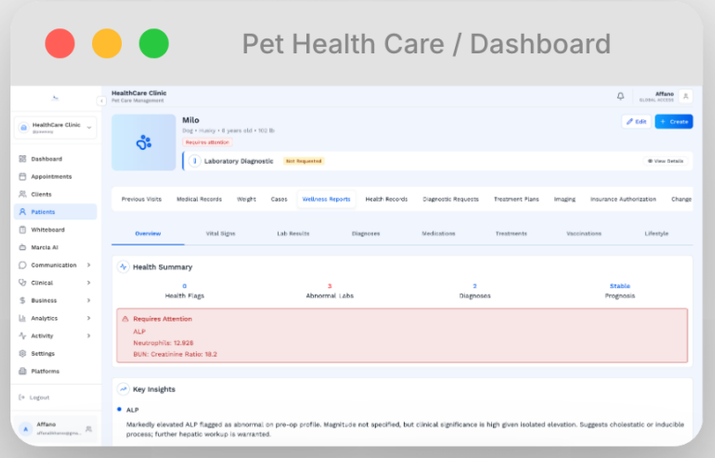
28 min to 90 sec per order. 97% reduction in manual entry. 3x staff throughput. Zero missed leads.

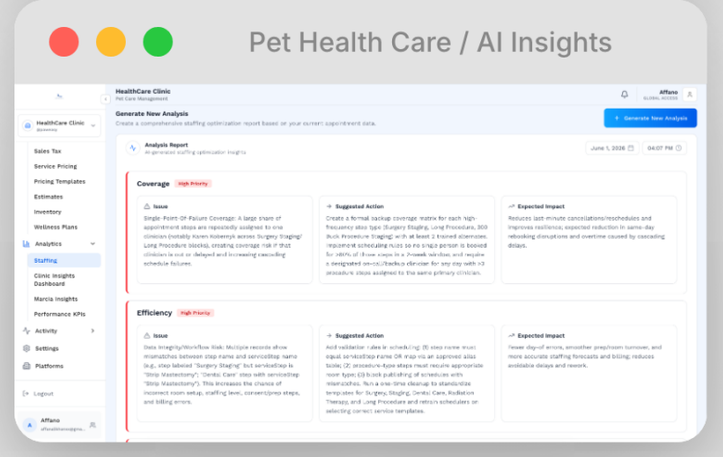
97%	8.3% to ~1%	3x	100%
ENTRY TIME REDUCTION	ERROR RATE DROP	STAFF THROUGHPUT	AFTER-HOURS RESPONSE

Claude (Anthropic) · LangChain · OpenRouter · Next.js · NestJS · PostgreSQL · Cloudflare

Fenestra / Order Processing







PROJECT 03 · VETERINARY HEALTHCARE

Pet Health Care

AI-Native Veterinary Operations

The average veterinary practice juggles 6 to 12 disconnected apps. 40% of a vet's day goes to paperwork. Practices lose $50,000 to $100,000 annually to no-shows. Between 8 and 12% of procedures never make it onto an invoice.

BEFORE

6-12 apps. Paper whiteboards. 40% of time on admin. 8-12% revenue leak.

PAIN

$50-100K lost to no-shows. Staff spent 8-15 min per appointment switching tools.

SOLUTION

Marcia AI multi-agent LLM. Gradient-boosted ML for no-show prediction. AI Symptom Checker.

OUTCOME

<100ms scheduling. 99.99% uptime. Automated triage. 24/7 pet owner self-service.

$50-100K
NO-SHOW LOSS PREVENTED

<100ms
SCHEDULING OPTIMIZATION

99.99%
PLATFORM UPTIME

Vercel AI SDK · Mistral AI · MCP · ElevenLabs · Tavily · Fine-Tuned LLM · Stripe · Twilio

PROJECT 04 · HEALTHCARE

CareMind

HIPAA-Grade Clinical AI

Clinicians operated at a 2:1 admin-to-care ratio. For every hour with a patient, two hours went to documentation, scheduling, and compliance. The global physician burnout rate stands at 49%. CareMind rebuilt the workflow around AI.

BEFORE

2:1 admin ratio. 1.5-2 hrs post-visit charting daily. 8-12 min per patient for document retrieval.

PAIN

49% burnout. 18%+ no-show rate. 3+ disconnected tools. 15 min per visit reconciling video with EHR.

SOLUTION

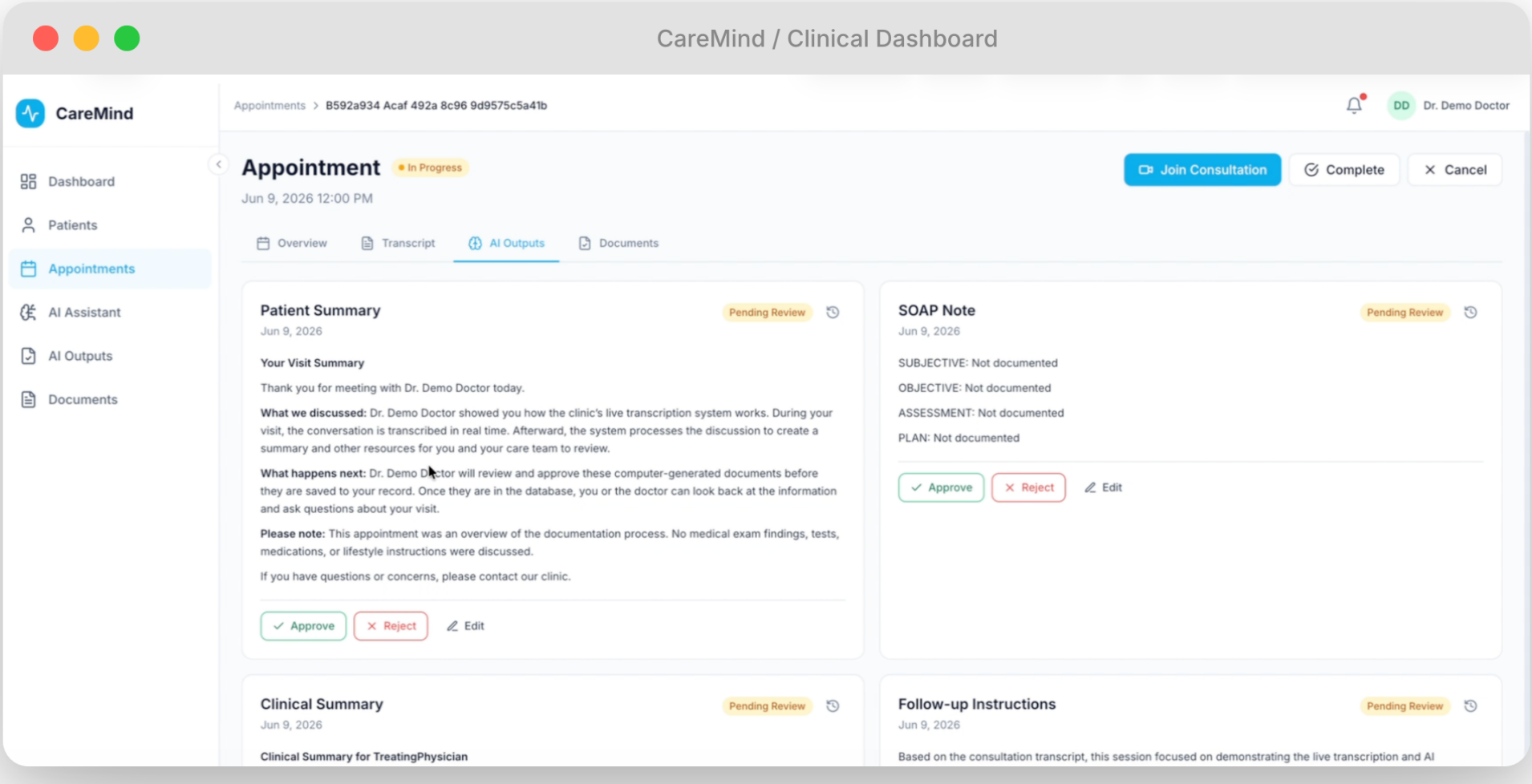
Deepgram STT. AI SOAP note generation. RAG assistant with pgvector. Voyage AI embeddings.

OUTCOME

60% faster documentation. 380 hrs/yr reclaimed per physician. 95% faster audit prep. 40% less tool spend.

60%	380 hrs	-95%	-40%
FASTER DOCUMENTATION	RECLAIMED PER PHYSICIAN/YEAR	AUDIT PREP TIME	TOOL SPEND REDUCTION

Deepgram · OpenRouter · pgvector · Voyage AI · Tesseract OCR · LiveKit · BullMQ



PROJECT 05 · FINTECH

DocuPulse

Document Intelligence Platform

Financial professionals processed documents manually. Accuracy hovered at 51 to 60%. A single document took 5 to 10 minutes. Search consumed 3 to 4 hours per week. DocuPulse embedded AI directly into the Excel workflow.

BEFORE

5-10 min per doc. 51-60% manual accuracy. 3-4 hrs weekly search. No cross-referencing.

PAIN

Audit prep took days. Invoice processing cost $12-40 each. Reconciliation was a monthly headache.

SOLUTION

Azure OpenAI. Semantic search. AI cross-reference gen. PDF-to-Excel. Human-in-the-loop validation.

OUTCOME

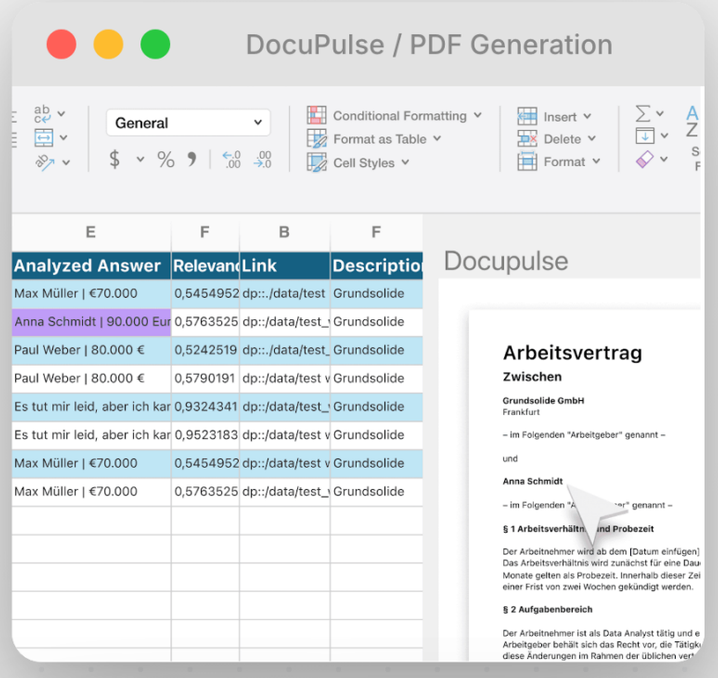
88-99% AI accuracy. 90-99% time reduction. 94% cost reduction. 5x faster analysis. <6 mo payback.

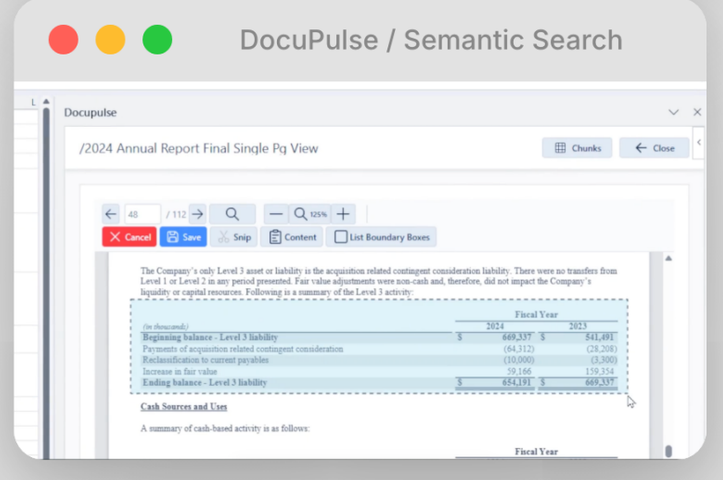
88-99%
AI DATA ACCURACY

90-99%
TIME REDUCTION

94%
COST REDUCTION

Azure OpenAI | ElasticSearch | React | Node.js | PostgreSQL





PROJECT 06 · FITNESS & WELLNESS

Serene Yoga

Voice AI Booking Assistant

Yoga studios spent 8 to 10 hours per day answering phones for bookings. 15 to 20% of after-hours inquiries went unanswered. Rescheduling a single appointment took 15 to 20 minutes. Serene Yoga replaced the phone with an Alexa-style voice AI.

BEFORE

8-10 hrs/day on phone bookings. Manual rescheduling. Flat instructor assignment.

PAIN

15-20% of after-hours inquiries lost. Rescheduling took 15-20 min. Staff tied to the phone.

SOLUTION

Deepgram STT/TTS. LiveKit real-time voice. OpenRouter LLM. AI instructor matching by goals.

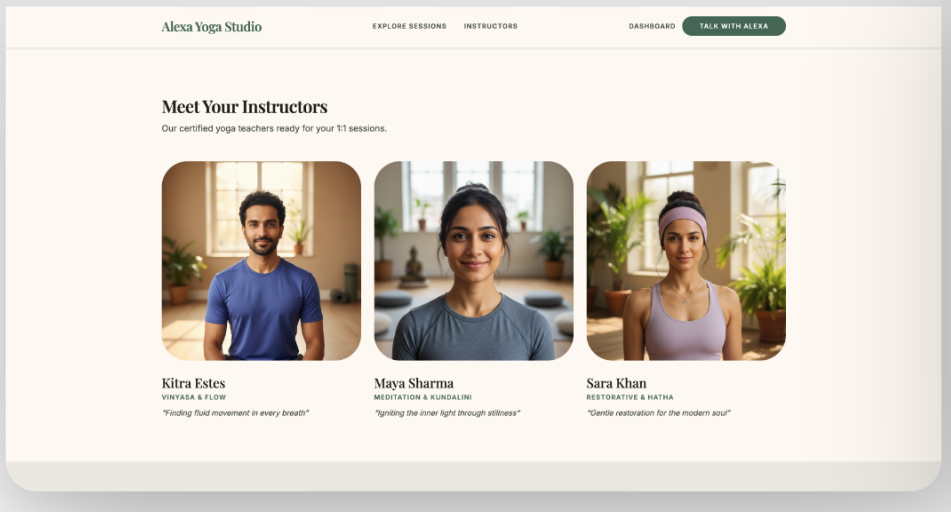
OUTCOME

90 sec booking. 35-45 hrs/week saved per studio. $51K+ annual value. 24/7 hands-free operation.

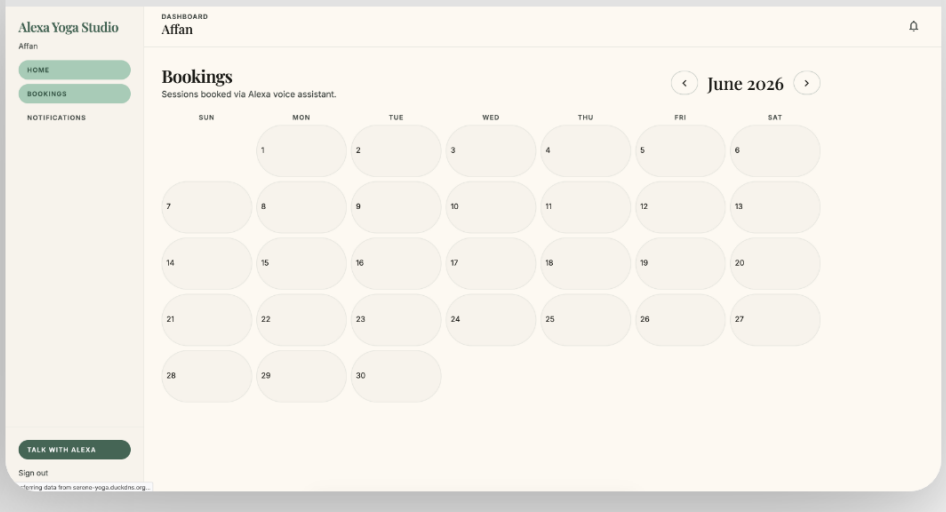
90 sec	35-45 hrs	$51K+	24/7
AVERAGE BOOKING TIME	WEEKLY SAVINGS PER STUDIO	ANNUAL VALUE PER STUDIO	HANDS-FREE BOOKING

Deepgram · LiveKit · OpenRouter · ElevenLabs · Python · FastAPI · PostgreSQL

Serene Yoga / AI Instructors



Serene Yoga / Bookings

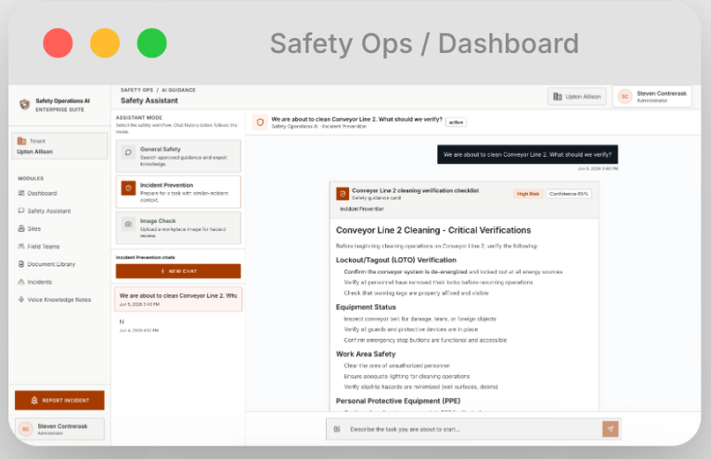


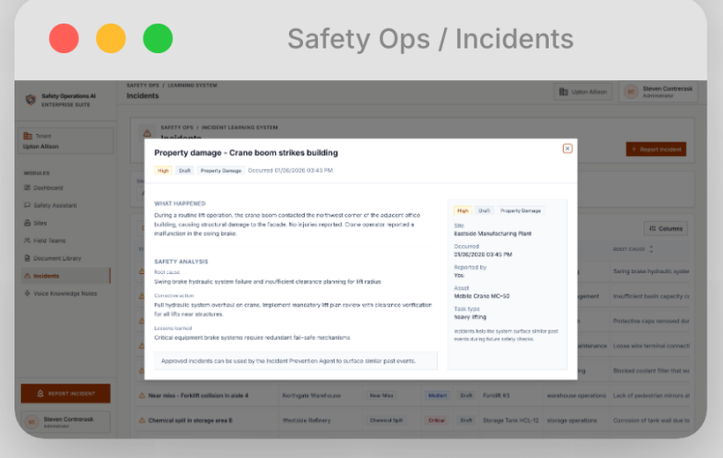
PROJECT 07 · WORKPLACE SAFETY

Safety Operations

AI-Powered Incident Prevention

Safety professionals spent 30 to 50% of their time on administrative tasks. The average medically consulted injury cost $43,000. A fatal incident cost $1.46 million. The platform rebuilt safety around an AI knowledge graph.





BEFORE

Fragmented SOPs. Manual incident reporting. 30-50% of time on admin. Paper-based toolbox talks.

PAIN

$43K per injury. SOPs contained contradictions. Field workers lacked real-time hazard guidance.

SOLUTION

LangChain + Google Vision. Semantic Knowledge Graph. Field Worker Copilot. Conflict Detection Engine.

OUTCOME

75% faster reporting. 87% faster toolbox prep. 99.9% traceability. 20-77% injury reduction.

75%	87%	99.9%
FASTER INCIDENT REPORTING	FASTER TOOLBOX PREP	DOCUMENT TRACEABILITY

LangChain · OpenRouter · Google Vision · pgvector · Celery · Python · PostgreSQL

TECHNICAL FOUNDATION

AI Technology Ecosystem

A consistent set of AI technologies appears across the portfolio. LangChain and OpenRouter lead in adoption, with Claude, Mistral, Deepgram, and Azure OpenAI following.

LLM & AI ORCHESTRATION

- LangChain
- OpenRouter
- Claude
- Mistral AI
- Azure OpenAI
- OpenAI

VOICE & SPEECH AI

- Deepgram
- ElevenLabs
- LiveKit

VECTOR SEARCH & EMBEDDINGS

- PG Vector
- Voyage AI
- ElasticSearch

COMPUTER VISION & DOCUMENT AI

- Google Vision
- Tesseract OCR
- AWS Rekognition

ADDITIONAL AI INFRASTRUCTURE

- Vercel AI SDK
- MCP
- Tavily
- AWS Bedrock
- SageMaker
- Fine-Tuned LLM

✓ THE VERDICT

AI is not a feature.
It is a new way to build software.

Across 7 projects and 6 industries, the same architectural pattern repeats. Unstructured input enters the pipeline. AI processes, matches, and enriches it. Structured, actionable output leaves the other end. The pattern is proven. The technology is accessible. The impact is measurable.

7	20+	6
AI PROJECTS	AI TECHNOLOGIES	INDUSTRY VERTICALS

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