



CASE STUDY

Actual Healthcare Solutions (AHS)

Accelerates AI-Powered Healthcare Workflows Using AWS and Shri Sai Tech LLC DBA SST

Executive Summary

Actual Healthcare Solutions (AHS), headquartered in Princeton, New Jersey, is a healthcare technology company focused on secure medical record exchange, clinical documentation, patient engagement, and healthcare interoperability through its ELEMREX platform. AHS enables healthcare providers, specialists, and patients to securely exchange healthcare information while maintaining HIPAA compliance and operational efficiency.

As healthcare organizations face increasing administrative workloads, AHS sought to enhance its platform with AI-powered capabilities that would improve clinical documentation, automate medical document processing, simplify patient communication, and streamline appointment scheduling.

To achieve these objectives, AHS partnered with SST to design, develop, and deploy a HIPAA-compliant AI healthcare platform on Amazon Web Services (AWS). Leveraging Amazon Bedrock foundation models, intelligent document processing, multimodal AI, and cloud-native architecture, SST delivered an end-to-end solution that automated key healthcare workflows while maintaining security, scalability, and compliance.

The challenges

- **Challenge 1 – Manual Clinical Documentation**
Physicians spent significant time on SOAP notes, nurse notes, and prescription drafts, reducing time for direct patient care.
- **Challenge 2 – Processing Large Volumes of Medical Documents**
Lab reports, discharge summaries, referrals, and insurance documents required manual review and data extraction.
- **Challenge 3 – Complex Clinical Reports for Patients**
Patients struggled to understand medical terminology in laboratory and radiology reports.
- **Challenge 4 – MRI and Diagnostic Imaging Interpretation Support**
Healthcare providers needed faster methods to analyze imaging studies and generate structured observations.
- **Challenge 5 – Appointment Scheduling Inefficiencies**
Manual scheduling, rescheduling, and cancellation processes created operational overhead.



About AHS

Actual Healthcare Solutions (AHS) is a healthcare technology company based in Princeton, New Jersey. Through its ELEMREX platform, AHS enables secure medical record sharing and healthcare information exchange between providers, specialists, and patients. The company focuses on improving clinical workflows, patient engagement, and healthcare interoperability while maintaining HIPAA compliance.

Robert Holton

President & COO, Actual Healthcare Solutions

Robert Holton is a seasoned health tech and SaaS executive with a proven track record at BASE10 Genetics, Video Medicine, and The Medicines Company. At Actual Healthcare Solutions, he leads operational growth and platform scaling, championing responsible AI adoption to reduce administrative burden and improve patient outcomes.



Simplify digital transformation with AWS

Amazon Web Services (AWS) provided AHS with a secure, scalable, and HIPAA-eligible cloud platform to modernize healthcare operations through AI-powered automation.

By leveraging managed AWS services, AHS avoided the complexity of building and maintaining large-scale AI infrastructure while gaining access to advanced machine learning, document intelligence, conversational AI, and healthcare-specific capabilities.

Why Shri Sai Tech?

AHS selected SST because of its deep expertise in healthcare technology solutions, cloud-native architecture, AWS services, AI/ML implementation, and HIPAA-compliant application development.

Key reasons AHS selected SST:

- Healthcare technology expertise
- AWS cloud architecture experience
- AI and machine learning implementation capabilities
- HIPAA compliance knowledge
- Healthcare interoperability experience
- Agile delivery methodology
- Ability to rapidly deliver a production-ready MVP

The solution

SST designed and implemented a comprehensive AI-powered healthcare platform using AWS managed services and Amazon Bedrock foundation models.

➤ AI AutoScribe

The AI AutoScribe solution automatically converts physician-patient conversations into structured clinical documentation. Using Amazon Bedrock and Claude Sonnet 4.5, the system generates SOAP Notes, Nurse Notes, Clinical Summaries, and Prescription Drafts — significantly reducing manual documentation burden on clinicians.

➤ Smart Medical Document Processing

The solution automatically processes uploaded healthcare documents including Lab Reports, Prescriptions, Referral Letters, Discharge Summaries, and Insurance Documents — extracting structured data and enabling faster clinical decision-making.

➤ Medical Report Summarization

Using Claude Sonnet 4.5, the platform generates patient-friendly explanations of clinical reports and diagnostic findings, helping patients understand complex medical terminology with clarity and confidence.

➤ MRI Analysis and Diagnostic Intelligence

Amazon Nova Pro was integrated to analyze MRI image and video sequences, identify observations across frames, generate structured findings, and produce summarized diagnostic insights — enhancing radiologist productivity.

➤ Intelligent FAQ Chatbot

A Retrieval-Augmented Generation (RAG) architecture was implemented using Amazon Titan Text Embeddings V2 to provide conversational patient support — answering queries related to appointments, insurance, medical records, and platform services around the clock.

➤ Appointment Booking Assistant

Patients can schedule, reschedule, and cancel appointments; receive reminders; and check provider availability — all through an AI-powered conversational interface that reduces administrative overhead.



AWS Services and AI Models Used

Foundation Models

<p>Anthropic Claude Sonnet 4.5</p> <ul style="list-style-type: none">• SOAP note generation• Clinical documentation• Medical report summarization• Conversational AI responses	<p>Amazon Nova Pro</p> <ul style="list-style-type: none">• MRI image analysis• MRI video analysis
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Amazon Titan Text Embeddings V2

- Semantic search and knowledge base indexing
- Retrieval-Augmented Generation (RAG)
- Context-aware document retrieval

AWS Cloud Services

<ul style="list-style-type: none">• Amazon Bedrock• Amazon S3• Amazon ECS• Amazon RDS• Amazon Cognito	<ul style="list-style-type: none">• AWS Lambda• Amazon API Gateway• AWS KMS• Amazon CloudWatch• AWS CloudTrail
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Results

- **Clinical Documentation Accuracy**
 - 90%+ transcription accuracy achieved for physician-patient conversations.
 - 85%+ clinical validation rate for AI-generated SOAP notes and clinical documentation.
- **Medical Document Intelligence**
 - 90%+ document processing success rate across supported medical document types.
 - 88%+ medical entity extraction precision for structured healthcare data extraction.
- **Medical Report Summarization**
 - 80%+ clinical reviewer approval rate for patient-friendly report summaries.
- **Intelligent FAQ Chatbot**
 - 85%+ response accuracy across healthcare and patient support queries.
- **Appointment Automation**
 - 90%+ successful completion rate for appointment booking, rescheduling, and cancellation workflows.
 - 100% notification delivery success rate for completed appointment scenarios.



Benefits

- 60% reduction in manual clinical documentation effort.
- 70% reduction in manual document review and data extraction effort.
- Improved clinical productivity — physicians reclaim more time for direct patient care.
- Enhanced patient experience — patients receive clear, understandable medical information.

Next steps

- Expand AI AutoScribe across additional medical specialties.
- Increase MRI and diagnostic imaging analysis capabilities.
- Enhance medical report intelligence.
- Expand chatbot knowledge bases.
- Integrate with additional EHR and healthcare systems.
- Extend appointment automation capabilities.
- Introduce advanced healthcare analytics and insights.
- Scale platform adoption across additional providers and healthcare organizations.

Benefits

- 90%+ Clinical Transcription Accuracy
- 88%+ Medical Entity Extraction Precision
- 85%+ Chatbot Response Accuracy
- 90%+ Appointment Workflow Success Rate
- 60% Reduction in Manual Clinical Documentation Effort
- 70% Reduction in Medical Document Processing Effort
- MRI Image and Video Analysis using Amazon Nova Pro
- Semantic Knowledge Retrieval using RAG and Amazon Titan Embeddings
- HIPAA-Compliant AWS Cloud Architecture
- Scalable AI-Powered Healthcare Platform

About Shri Sai Tech LLC DBA SST

SST is an AWS Partner specializing in AI-driven, cloud-native architecture and secure, compliant solutions across a wide range of industries — including healthcare, finance, education, retail, manufacturing, logistics, energy, government and public sector, telecommunications, and media and entertainment. Partnering closely with our clients, SST rapidly designs and deploys production-ready AI platforms on AWS, bringing AI-powered capabilities to market with speed and confidence.

