CitiusTech

Shaping Healthcare Possibilities

Gen AI powered solution for Automating Kyphoplasty Coding

The client is a Charlotte based healthcare technology company specializing in medical billing automation and revenue cycle management (RCM) solutions. Founded in 2000, it serves over 75,000 physicians across 47 specialties, offering AI-driven platforms that streamline billing workflows, improve financial efficiency, and enhance the patient experience.

CASE STUDY

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Problem Statement

- Accurate and efficient medical coding is critical for billing, patient care, and healthcare data management.
- Kyphoplasty procedures require precise diagnosis and CPT coding to ensure proper reimbursement and clinical documentation.
- The manual coding process is time-consuming and error-prone, leading to financial discrepancies and compromised patient records.
- The project aims to automate the coding process using advanced AI technologies to improve accuracy and efficiency.
  - The goal is to enhance healthcare data quality while reducing human effort and coding errors

Solution Description and Architecture

CitiusTech implemented an AI-powered solution for automating Kyphoplasty medical coding for a Charlotte-based healthcare tech firm. Using Bio_ClinicalBERT via AWS SageMaker, the system interprets clinical text to assign CPT and diagnosis codes, improving coding accuracy to 97% and reducing manual errors by 90%. Integrated via AWS SFTP, the solution achieved 95% AI assist coverage and reduced coding effort by 70%. AWS services used include CloudWatch, SageMaker, ECR, ECS, and S3. The project ran from October 2024 to March 2025, enhancing data quality and streamlining billing workflows.

Outcomes

Increased coding accuracy to **97%** and **90%** reduced manual errors

Provided **95%** AI Assist/Coverage leading to time saving

Reduced the overall effort required for medical coding by **70%**

Lessons Learnt

There is very thin line of difference between vertebroplasty and kyphoplasty procedure description which needs to be handled carefully

Since client is providing structured data in txt sometime parsing it in dataframe causing errors so we have asked client to change input file to csv.

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About CitiusTech

CitiusTech is a global technology services, consulting, and business solutions enterprise 100% focused on the healthcare and life sciences industry. We enable 140+ enterprises to build a human-first ecosystem that is efficient, effective, and equitable. Leveraging deep domain expertise and next-generation technologies including AI, Cloud, Data, and Intelligent Automation, we assist our clients in realizing their vision, accelerate transformation, and achieve business outcomes. With 7,700+ healthcare technology professionals worldwide, CitiusTech powers digital innovation, business transformation, and industry-wide convergence through next-generation technologies, solutions, and products. Follow CitiusTech on Twitter or LinkedIn.

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