Project title : SimpliMedi-Assist
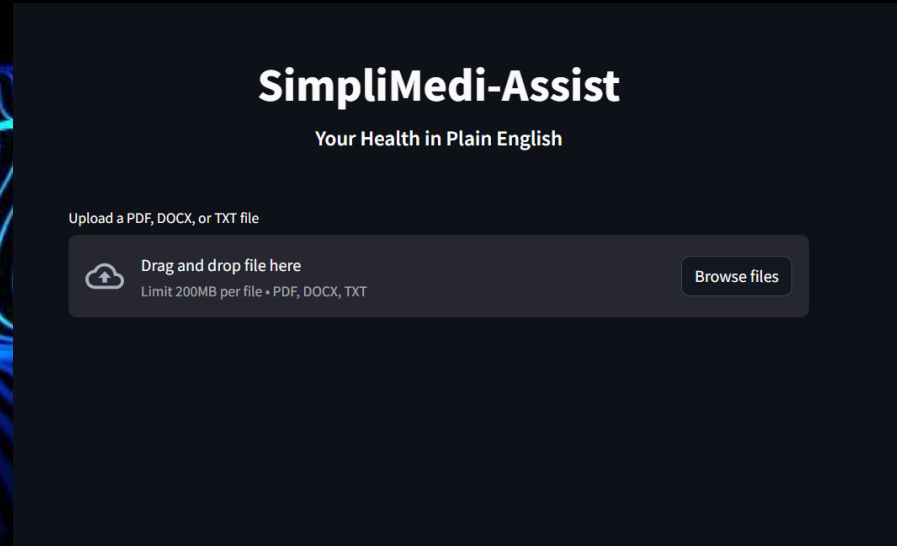
Simplifying medical reports without too much jargon
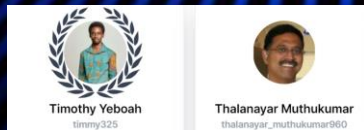
SimpliMedi-Assist

Your Health in Plain English

Upload a PDF, DOCX, or TXT file

☁ Drag and drop file here
Limit 200MB per file • PDF, DOCX, TXT   Browse files

Team Lead : Timothy Yeboah

Member: Thalanayar Muthukumar (Kumar)

Tags: #medical #llama-index, #RAG, #chatGPT, #truLens

Team

TIMOTHY YEBOAH

THALANAYAR MUTHUKUMAR

Medical reports are confusing

FINDINGS:
Assuming normal segmentation, there are 5 lumbar type vertebra with S1 completely incorporated into the sacrum.

Postsurgical changes of L2-L4 laminectomies with posterior instrumented fusion at L2-L5. Susceptibility artifact related to fusion hardware limits evaluation of adjacent structures.

Vertebral Bodies: Chronic-appearing mild anterior wedging of the T12 vertebral body. Vertebral body heights are otherwise maintained. No suspicious marrow signal replacement.
Alignment: No acute lumbar subluxation. Stepwise grade 1 retrolisthesis of L1 on L2 and L2 on L3. Mild lumbar dextrocurvature.

Extradural: There are no abnormal extradural fluid collections or masses. No foci of abnormal enhancement.
Spinal Cord: The distal spinal cord appears normal.
Conus: The conus terminates at approximately L1

Table 1.2. Number of People per Active Physician by Specialty, 2017

Specialty	Total Active Physicians	People Per Physician
All Specialties	892,856	365
Allergy and Immunology	4,774	68,228
Anatomic/Clinical Pathology	12,839	25,370

More complex methodologies are emerging
Simplifying for patients are care givers

The solution

Team Lead : Timothy Yeboah

Member: Thalanayar Muthukumar (Kumar)

Tags: #medical #llama-index, #RAG, #chatGPT, #truLens

- **Project title** : SimpliMedi-Assist
- **Short Description**: SimpliMedi-Assist provides a solution by translating intricate medical reports into clear and understandable language.
- **Long Description**: Leveraging LLMs and RAG, it translates intricate medical terminology into clear, concise language accessible to patients and non-medical professionals. This innovative tool eliminates barriers caused by medical jargon, empowering individuals to comprehend their health information effectively. By bridging the gap between technical medical language and layman's understanding, SimpliMedi-Assist facilitates informed decision-making and promotes health literacy.
- **Key Components**
1. GPT 3.5 Turbo LLM
2. RAG
3. LlamaIndex
4. Truelens
5. Flask

Medical reports in plain English!

The report also mentions that the end of your spinal cord is at L1, which is normal. There are no abnormal fluid collections or masses around your spine, and the soft tissues around your spine appear normal. Additionally, a kidney cyst is noted on the right side.
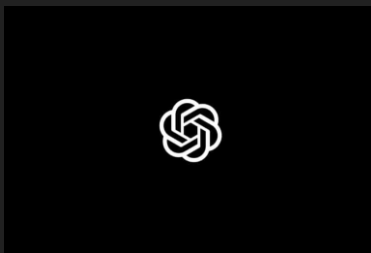
In summary, the MRI shows postsurgical and degenerative changes in your lower back, leading to significant narrowing of the spinal canal and nerve openings at multiple levels. This could be causing your lower back pain. Treatment options may include physical therapy, pain management, or in severe cases, surgery to relieve the pressure on the nerves. It would be best to discuss these findings with your healthcare provider to determine the most suitable treatment plan for you.

How it works

Complex report (pdf/docx/txt) uploaded as input

SimpliMedi-Assist

Your Health in Plain English

Upload a PDF, DOCX, or TXT file

Drag and drop here
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Browse files

Data analyzed by GPT model and augmented with RAG content

+

RAG

Output presented to end user along with suggestions on treatment etc

The report also mentions that the end of your spinal cord is at L1, which is normal. There are no abnormal fluid collections or masses around your spine, and the soft tissues around your spine appear normal. Additionally, a kidney cyst is noted on the right side.

In summary, the MRI shows postsurgical and degenerative changes in your lower back, leading to significant narrowing of the spinal canal and nerve openings at multiple levels. This could be causing your lower back pain. Treatment options may include physical therapy, pain management, or in severe cases, surgery to relieve the pressure on the nerves. It would be best to discuss these findings with your healthcare provider to determine the most suitable treatment plan for you.

Demo

- App link: https://simplimedi-assist-ndtbwnalh3slw4bznftlyy.streamlit.app/
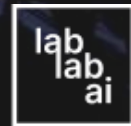
App Leaderboard

Average feedback values displayed in the range from 0 (worst) to 1 (best).

SimpliMedi-Assist-v1 ⓘ

Records	Average Latency (Seconds)	Total Cost (USD)	Total Tokens	groundedness_measure_wi...	qs_relevance	relevance	
1	4	$0.01	4.28k	0.0 🔴 low	0.2 🔴 low	1.0 ✅ high	Select App

SimpliMedi-Assist-v2 ⓘ

Records	Average Latency (Seconds)	Total Cost (USD)	Total Tokens	groundedness_measure_wi...	qs_relevance	relevance	
1	4	$0.01	9.09k	0.0 🔴 low	0.38 🔴 low	1.0 ✅ high	Select App

SimpliMedi-Assist-v3 ⓘ

Records	Average Latency (Seconds)	Total Cost (USD)	Total Tokens	groundedness_measure_wi...	qs_relevance	relevance	
1	4	$0.01	3.81k	1.0 ✅ high	0.86 ✅ high	1.0 ✅ high	Select App

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trulens

- Leaderboard
- Apps
- Evaluations

trulens_eval 0.23.0

Market Opportunity

Table 1.2. Number of People per Active Physician by Specialty, 2017

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2024 opportunity (US market only) – 6M$

Growth – 5% per year for next 3 years

Assumption 2% of physicians and 5% of their patients will buy this offering and pay 55$ per year

Revenue model

Paid for by doctors and their clinics for their patients' yearly subscription

Yearly subscription feed per patient
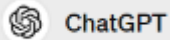
Competitive Analysis

Simple-Medi Assist

- Expertise tailored to different segments of the medical profession, roles and patients
- Social media based marketing leveraged

John Snow LABS

Very medical expertise focused targeted on big sales and not to individual doctors and the practice level and to individual patients

ChatGPT custom

Leverages the ChatGPT channel, which is not medical community focused

YOU

Excellent consumer reach through multiple social media channels. Not medically focused

Future prospects

- Create speciality specific offerings – e.g. Gastrenterologists, PCPs, X-Ray technicians
- Improve response quality.
- Add ability to upload MRI scans directly
- Improve RAG system performance
- Expand to Canada and other markets
- Add support for different languages

Thanks!

OpenAI   new native group   NEXTGRID   lab lab ai