

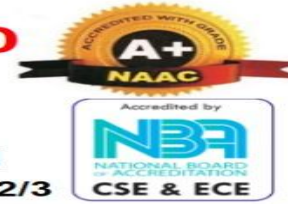


# VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

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Kondapur (V), Ghatkesar (M), Medchal - Malkajgiri (D) - 501 301. Phone: 96529 10002/3



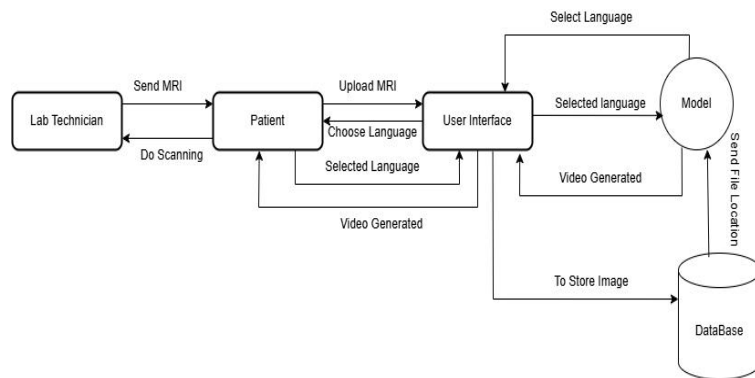
## DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

### WEB BASED VIDEO ANALYSIS AND VISUALIZATION OF MAGNETIC RESONANCE IMAGING REPORTS FOR ENHANCED PATIENT UNDERSTANDING

#### ABSTRACT

MRI reports are often hard for patients to understand due to complex medical terms. We built a smart web tool that uses AI to turn these reports into simple language using techniques like OCR, summarization, and keyword extraction. It also adds helpful voice and video explanations to make things clearer. This helps patients better understand their health and supports communication in multiple languages.

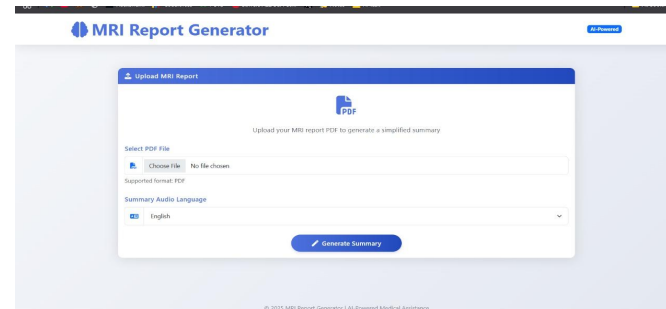
#### SYSTEM ARCHITECTURE



#### METHODS

Users upload an MRI image or PDF report to the system. Smart models use OCR (Tesseract, PyMuPDF) to extract text, then NLP tools summarize the report and highlight key medical terms. The system searches for trusted medical information and creates audio-visual explanations using gTTS and moviepy. This helps users understand their MRI reports in simple language and multiple languages.

#### RESULTS



#### CONCLUSION

We developed an intelligent system that transforms complex MRI reports into easy-to-understand language using advanced NLP and multimedia tools. By combining text extraction, summarization, keyword analysis, and audio-visual generation, the system improves patient understanding. Its multilingual support and user-friendly design show strong potential for making medical information more accessible and enhancing healthcare communication.

#### TEAM MEMBERS:BI

**B.Vennela(21-6610)**

**K.Harika(21-6623)**

**P.Deekshitha(21-6639)**

**U.Nandhini(21-6660)**