



International Journal of Engineering Research and Science & Technology

www.ijerst.org

ISSN : 2319-5991

Vol. 22 No. 2(1) (2026)



ijerst.editor@gmail.com
editor@ijerst.com

Research Paper

AI BASED NOTE MAKER FOR STUDENTS

¹K.uma,²D.Charani,³T.Shivamani,⁴S.Sahithi,⁵V.Nandini

¹Assistant Professor, ²³⁴⁵Students

Department of CSE(AI&ML)

Siddhartha institute of technology & sciences,narapally

umakola_cse@siddhartha.co.in,23TQ1A66B8@siddhartha.co.in,
23TQ1A6695@siddhartha.co.in, 23TQ1A6674@siddhartha.co.in,
23TQ1A6695@siddhartha.co.in

ABSTRACT

In the modern education system, students often face difficulty in managing large amounts of study material such as lecture notes, PDFs, and recorded classes. Manually preparing organized notes from these resources is time-consuming and inefficient. To address this problem, this project proposes an AI-Based Note Maker for Students, an intelligent system that automatically converts educational content into structured and meaningful notes.

The proposed system uses Natural Language Processing (NLP) and Machine Learning techniques to process input from various sources such as lecture audio, text documents, or PDF files. The system performs text preprocessing, keyword extraction, summarization, and question generation to produce concise and useful study material. It can highlight important concepts, generate summaries, create flashcards, and produce practice questions for exam preparation. Additionally, the system can transform lecture recordings into text and organize them into readable notes.

This project aims to improve learning efficiency by reducing the time students spend on manual note-taking and helping them focus more on understanding concepts. The system provides a user-friendly interface where students can upload learning material and instantly receive structured notes. Overall, the AI-Based Note Maker enhances productivity, supports effective revision, and provides a smart learning assistant for modern students.

I INTRODUCTION

In the modern education system, students are exposed to a large amount of study material such as lecture notes, online classes, PDFs, and digital textbooks. Managing and organizing this information into meaningful notes can be difficult and time-consuming. Many students spend

significant time manually writing and summarizing notes instead of focusing on understanding the concepts. As educational content continues to grow in digital form, there is a need for a smart system that can automatically organize and summarize learning materials efficiently.

The **AI-Based Note Maker for Students** is designed to solve this problem by using **Artificial Intelligence (AI), Natural Language Processing (NLP), and Machine Learning techniques** to convert raw educational content into structured notes. The system can analyze text from documents or lectures, extract key points, generate summaries, highlight important keywords, and create practice questions. By automating the note-making process, the system helps students save time, improve their understanding of topics, and prepare more effectively for exams.

II LITERATURE SURVEY

1. Automatic Text Summarization Using Natural Language Processing

This paper explains how Natural Language Processing (NLP) techniques can be used to automatically summarize large amounts of textual data. Students often struggle to read and understand lengthy documents and lecture materials. The proposed system uses text preprocessing, keyword extraction, and summarization algorithms to generate concise notes. Experimental results show that automated summarization systems can significantly reduce the time required for studying while preserving important information.

2. AI-Based Educational Content Summarization System

This research focuses on developing an AI-based system that converts educational content into structured summaries. The system analyzes textual information from study materials and extracts key concepts using machine learning models. It also highlights important keywords to help students focus on the main topics. The study demonstrates that AI-powered summarization tools can improve learning efficiency and help students quickly understand complex subjects.

3. Intelligent Note Generation System for Students

This paper presents an intelligent system that automatically generates notes from digital learning resources such as PDFs and lecture transcripts. The system processes input data using NLP techniques and identifies the most relevant sentences and concepts. It organizes the extracted information into structured notes that are easy to read and revise. The research highlights that automated note generation systems can improve study productivity and reduce manual effort.

4. Question Generation from Educational Text Using Machine Learning

This research discusses the development of a machine learning-based system that generates questions from educational content. The system analyzes sentences, identifies key concepts, and transforms them into meaningful questions for exam preparation. The results indicate that automated question generation can help students practice and assess their understanding of topics more effectively.

5. Smart Learning Assistant Using Artificial Intelligence

This paper introduces an AI-based learning assistant that helps students organize study materials and improve their learning process. The system integrates features such as summarization, keyword extraction, and content analysis to provide structured educational support. The research concludes that AI-powered learning tools can enhance academic productivity and support students in managing large volumes of information efficiently.

III SYSTEM ANALYSIS

An AI-Based Note Maker for Students is designed to automatically generate concise, structured, and meaningful notes from various input sources such as textbooks, PDFs, lectures, and videos. The system leverages technologies like **Natural Language Processing (NLP)** and **Machine Learning (ML)** to understand content, extract key points, summarize information, and organize it into easy-to-read formats. It aims to reduce manual effort, improve learning efficiency, and provide personalized study materials based on student preferences and learning patterns.

Existing system

In the existing system, students manually create notes by reading textbooks, attending lectures, or copying content from online sources. This process is time-consuming and often leads to incomplete or unstructured notes. Some digital tools like note-taking apps exist, but they mainly rely on manual input without intelligent summarization or automation.

DisAdvantages of Existing system

- Time-consuming and effort-intensive
- Lack of proper structure and organization
- Human errors and missed important points
- No personalization of notes
- Difficult to revise large volumes of content

Proposed system

The proposed AI-Based Note Maker automates the note-generation process using advanced AI techniques. It takes input in multiple formats (text, audio, video), processes the data using NLP algorithms, and generates summarized, structured notes. The system can highlight key points, generate headings, create bullet points, and even provide keyword extraction. It also adapts to individual learning styles by offering personalized summaries, making studying more efficient and interactive.

Advantages of Proposed System

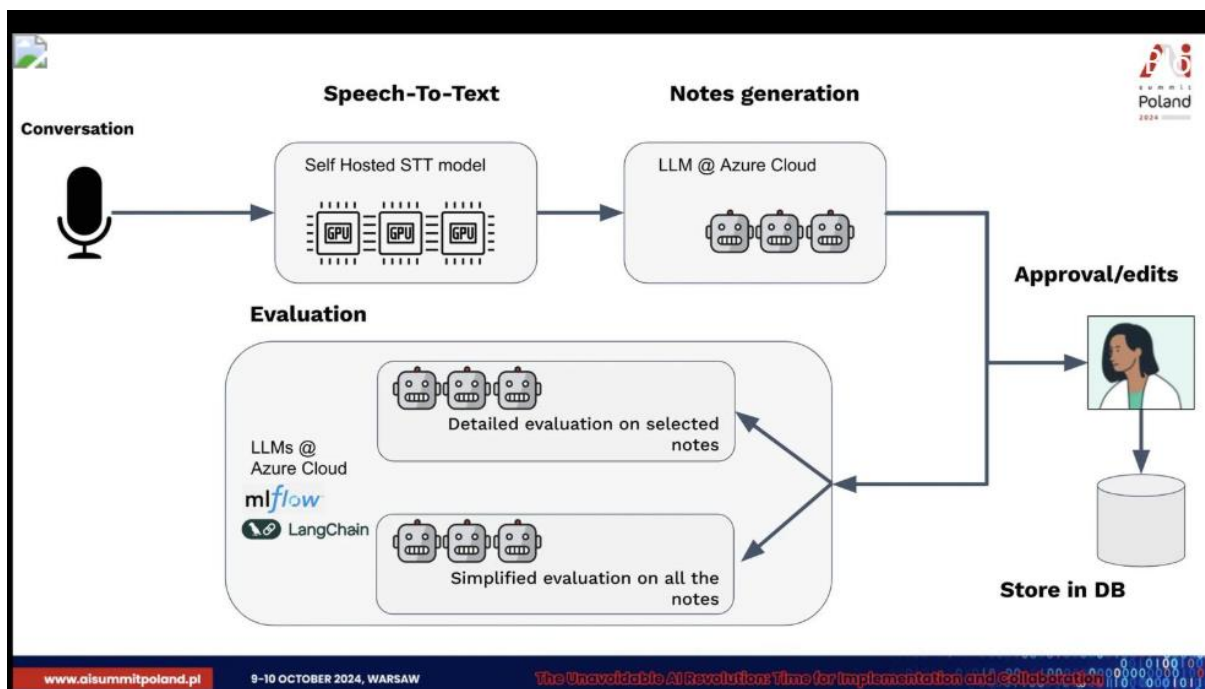
- Saves time and effort
- Automatically generates structured notes
- High accuracy using AI algorithms
- Personalized learning experience

- Supports multiple input formats (PDF, audio, video)

IV METHODOLOGY

The system is based on Natural Language Processing (NLP) and Machine Learning (ML) techniques. It uses text preprocessing (tokenization, stop-word removal), followed by text summarization algorithms such as extractive and abstractive summarization. Deep learning models like transformers (e.g., BERT-like architectures) help in understanding context and generating meaningful summaries. Speech-to-text conversion is used for audio/video inputs. The processed data is then structured into notes using formatting techniques like headings, bullet points, and keyword extraction.

System Architecture

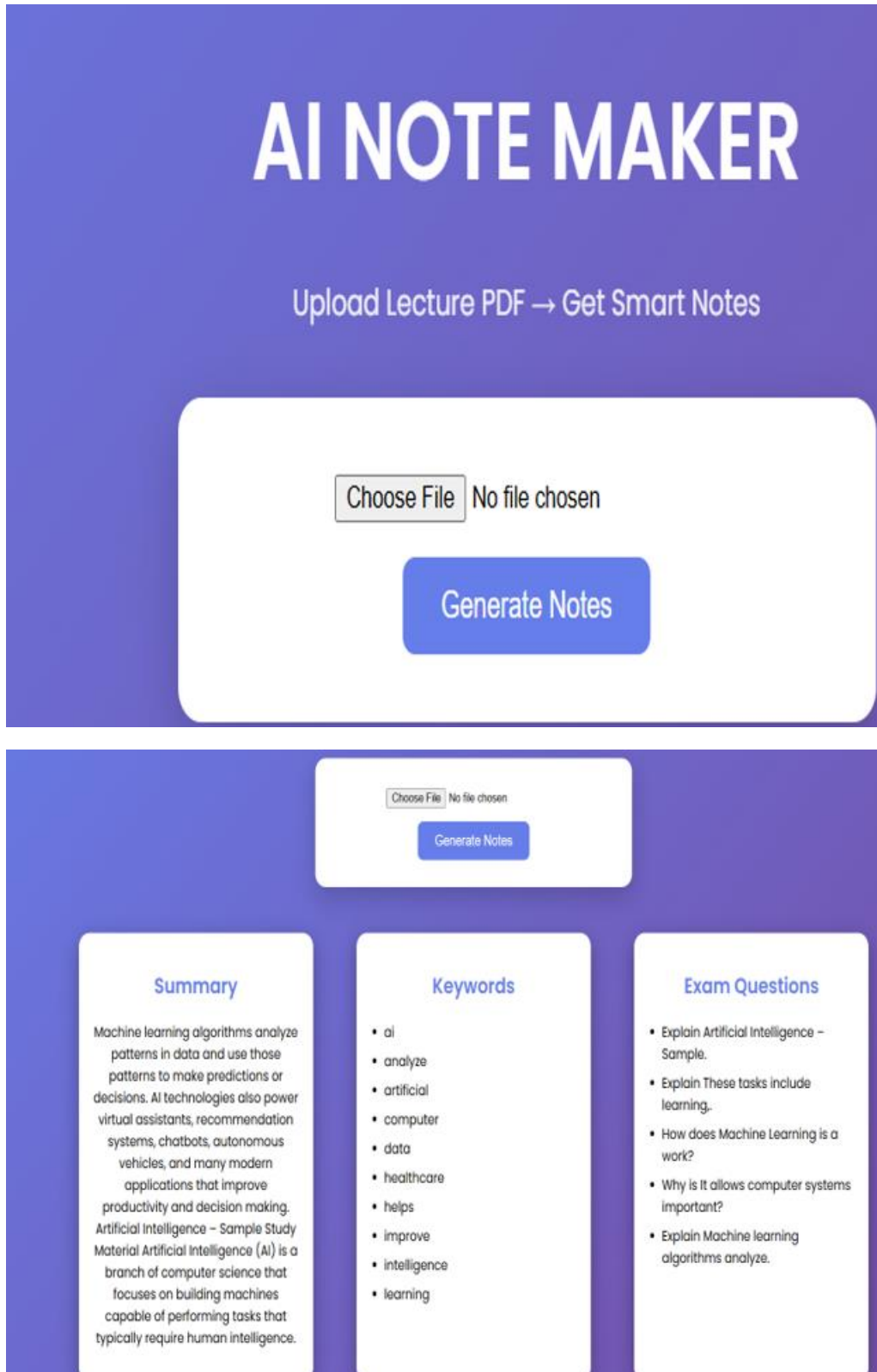


- **Input Layer** – Accepts data (PDFs, text, audio, video)
- **Preprocessing Module** – Cleans and prepares data
- **AI/NLP Engine** – Performs summarization and keyword extraction
- **Database/Storage** – Stores generated notes
- **User Interface** – Displays notes in structured format
- **Feedback Module** – Improves system based on user input

V RESULTS & OUTPUT

The implementation of the AI-Based Note Maker demonstrates significant improvements in the note-taking process for students. The system successfully generates concise, well-structured, and meaningful notes from large volumes of input

data such as PDFs, lecture transcripts, and audio content. It reduces the time required for note preparation and enhances the overall learning experience. The generated notes maintain high relevance by capturing key concepts, important points, and summaries, making revision faster and more effective. User feedback indicates improved productivity and better retention of information due to simplified and organized notes.



REFERENCE

- [1] Kumar, R. D., Prudhviraaj, G., Vijay, K., Kumar, P. S., & Plugmann, P. (2024). Exploring COVID-19 through intensive investigation with supervised machine learning algorithm. In Handbook of Artificial Intelligence and Wearables (pp. 145-158). CRC Press.
- [2] Swathi, B., Vijay, K., Sushanth Babu, M., & Dinesh Kumar, R. (2024, November). Machine Learning Techniques in Cloud Based Intrusion Detection. In The International Conference on Artificial Intelligence and Smart Environment (pp. 557-564). Cham: Springer Nature Switzerland.
- [3] Sv satyakrishna, shirisha rangu ,bhargavi nalacheruve.(2024) Prospective investigation on colorectal cancer with SMOTE on machine learning Algorithm
- [4] Dr.G.Vishnu Murthy, BhargaviNalacheruve 1Professor, Department of computer Science & engineering, Anurag University, TS, India. 2Student, Department of computer Science & engineering, Anurag University, TS, India.
- [5] V. N. S. Manaswini, K. K, C. Nigam, S. S. Ali, R. Niranjana, and Suman, “Real-Time Object Detection in Drone Surveillance Using YOLOv5,” in Proc. 2025 3rd Int. Conf. IoT, Communication and Automation Technology (ICICAT), Gorakhpur, India, 2025, pp. 1–6, doi: 10.1109/ICICAT68430.2025.11414670.
- [6] B. Soundarya, V. N. S. Manaswini, M. Ayyakrishnan, R. D. Kumar, “Contextual Analysis of Big Data Analytics in Intelligent Transportation Frameworks,” in Intersection of Artificial Intelligence, Data Science, and Cutting-Edge Technologies: From Concepts to Applications in Smart Environment, Lecture Notes in Networks and Systems, vol. 1353, Cham: Springer, 2025, doi: 10.1007/978-3-031-88304-0_79.
- [7] R. D. Kumar, V. N. S. Manaswini, “Applications of blockchain in smart cities: detecting fake documents from land records using blockchain technology,” in Blockchain for Smart Cities, Elsevier, 2021, pp. 105–117, doi: 10.1016/B978-0-12-824446-3.00017-X.
- [8] Tejavath Veeramma, Badarla Anil, Guguloth Ravinder, “An advanced movie recommender using collaborative filtering and sentiment analysis,” International Research Journal of Modernization in Engineering Technology and Science, vol. 7, no. 7, July 2025, doi: 10.56726/IRJMETS81618.
- [9] Ravi Kumar Banoth, Ramana Murthy B V, “Automatic crop recommendation system using LightGBM and decision tree machine learning models,” Journal of Machine and Computing, vol. 5, no. 1, pp. 343, Jan. 2025, doi: 10.53759/7669/jmc202505026.
- [10] Ravi Kumar Banoth, Dr. B.V. Ramana Murthy, “Smart agriculture through IoT and machine learning for analyzing carbon footprints,” in Proc. Int. Conf. Computer Science and Communication Engineering (ICCSCE), Apr. 2025.
- [11] Ravi Kumar Banoth, B. V. Ramana Murthy, “Soil image classification using transfer learning approach: MobileNetV2 with CNN,” SN Computer Science, vol. 5, art. no. 199, 2024, doi: 10.1007/s42979-023-02500-x.