International Conference on Advances in Modern Technology of Research in Engineering Field (AIMTREF) April, 2026
Organized By: SKN Sinhgad Institute of Technology& Science, Kusgaon (Bk), Lonavala, Pune

International Journal of Science, Engineering and Technology
ISSN: 2348-4098, P-ISSN: 2395-4752

Elevate AI": Enhanced Learning Experience & Virtual Assistant Tool for Education

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Absvtract- AI tools are widely used by students for studying, but most of them are general-purpose and don't follow university-specific formats, syllabus, or marking schemes. Because of this, students may understand concepts but still struggle to score well in exams. To address this, we propose ELEVATE AI, a system designed for exam-oriented learning that generates structured answers using syllabus content, textbooks, previous year questions, and diagrams. It also allows students to practice writing answers and get feedback by comparing with ideal responses. With added voice interaction, the system can act like a tutor, making learning more interactive. Overall, it focuses not just on understanding, but also on how to write and present answers effectively in exams.

Keywords- Artificial Intelligence, Large Language Models, Retrieval-Augmented Generation, Exam-Oriented Learning, Intelligent Tutoring System, Previous Year Question Analysis, Educational Chatbot

I. INTRODUCTION

Artificial Intelligence has changed how students' study, especially with the rise of Large Language Models. Tools like ChatGPT and Google Gemini allow students to quickly understand concepts and generate answers.

But there is a problem.

These tools are general-purpose. They give correct answers, but not in the format expected in exams. They don't follow university-specific structure, don't focus on marking schemes, and don't highlight what actually matters for scoring.

Another issue is that they ignore things like:

- previous year questions
- answer presentation
- diagrams
- structured writing

Because of this, students still have to modify answers manually or may lose marks even after studying properly.

So, the gap is clear. Students don't just need correct answers. They need answers written the way examiners expect.

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To solve this, we propose ELEVATE AI, a system designed specifically for exam preparation. It focuses on:

- syllabus alignment
- structured answers
- PYQ importance
- answer writing practice

The goal is simple: not just learn, but write better answers in exams.

II. PROBLEM STATEMENT

Students today widely use AI tools like ChatGPT and Gemini for academic preparation because they help in quickly understanding concepts and generating answers. However, these tools are built as general-purpose systems and do not fully understand the specific requirements of university exams. Even when the answers are factually correct and conceptually accurate, they may not follow the expected structure, terminology, or presentation style defined by the syllabus and marking scheme. They also lack awareness of important aspects like previous year questions, standard answer formats, and the use of diagrams, which play a key role in scoring. Because of this, students often have to spend extra time modifying the answers or may lose marks despite knowing the correct content. Therefore, there is a need for a system that can generate structured, exam-oriented, and syllabus aware answers tailored to academic requirements.

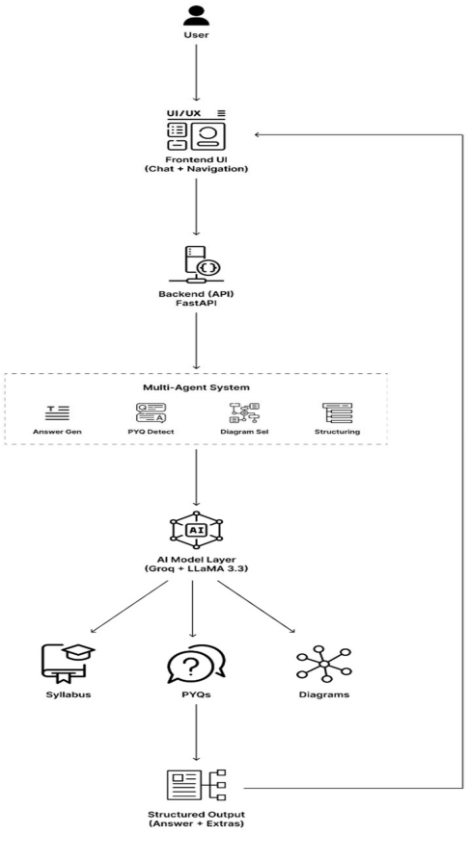

Figure 1: System Architecture of ELEVATE AI

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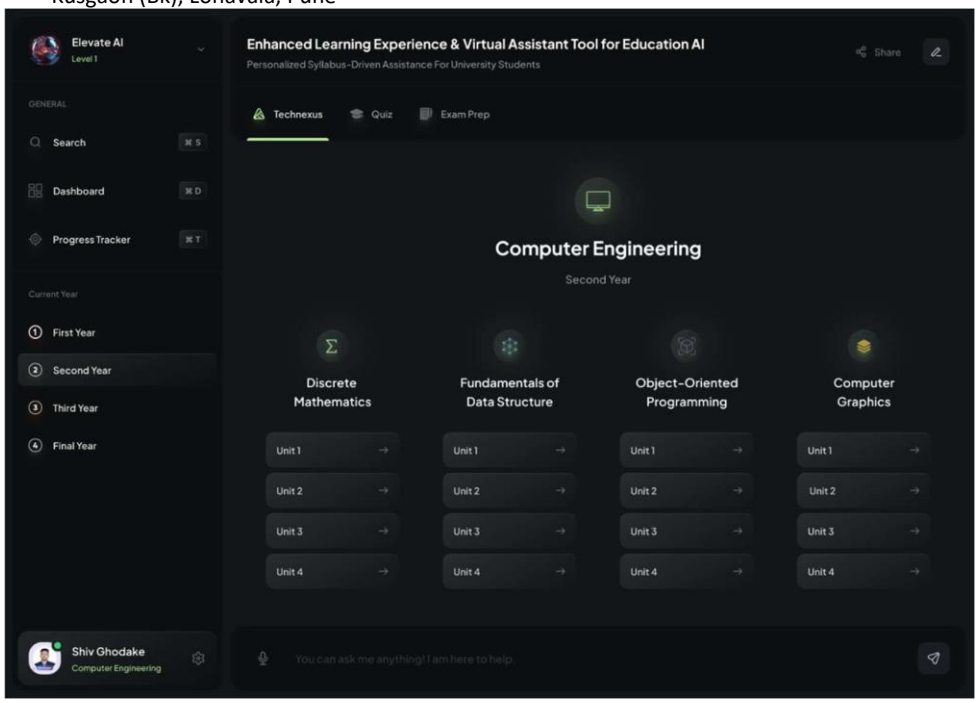

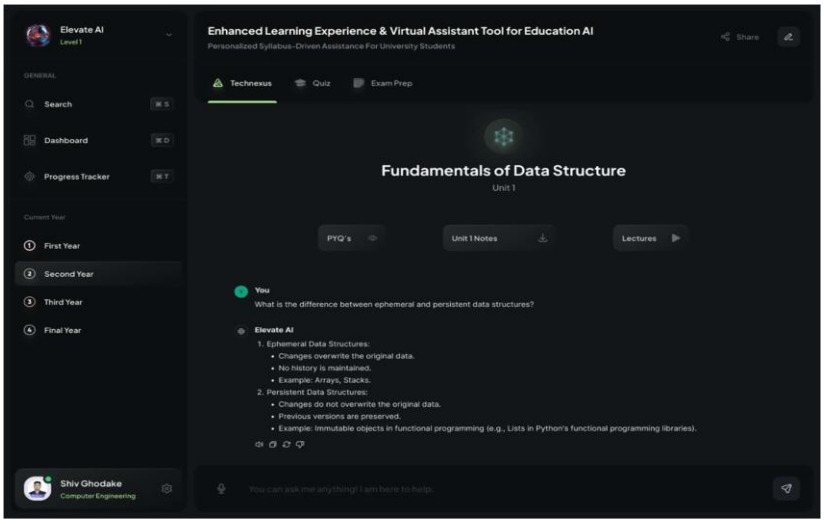

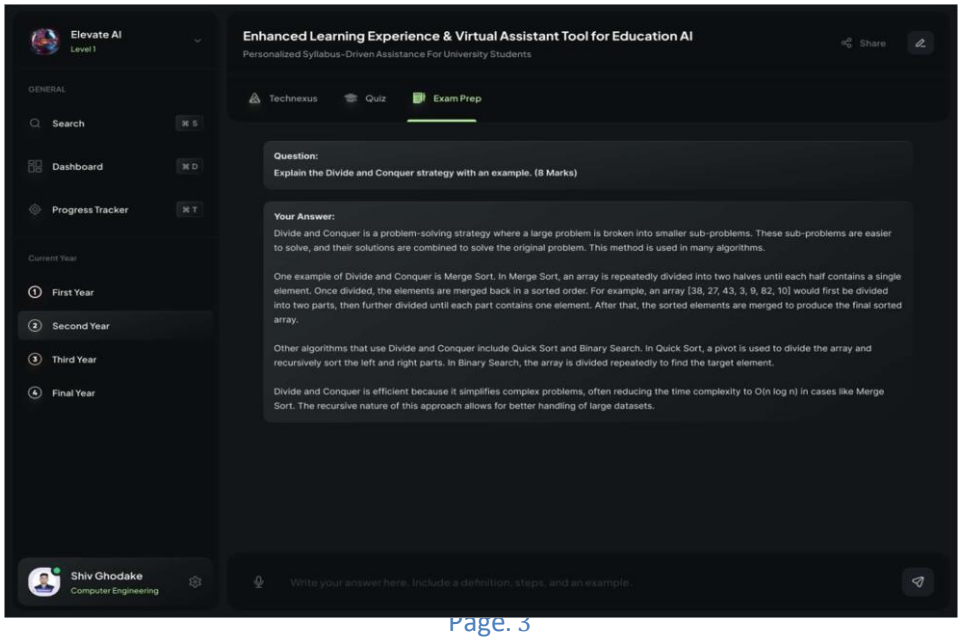

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ISSN: 2348-4098, P-ISSN: 2395-4752

III. CONCLUSION

In this work, we proposed ELEVATE AI, an AI-based educational assistant designed specifically for exam-oriented learning. Unlike general-purpose tools, the system focuses on generating structured answers that are aligned with university syllabus, expected formats, and marking schemes. By integrating features such as previous year question detection, diagram support, and structured response generation, the system helps students not only understand concepts but also learn how to present answers effectively in exams.

The use of a multi-agent architecture along with a RAG-based approach ensures that the responses are consistent, relevant, and grounded in academic data. Additionally, the integration of high-performance inference through Groq improves the overall responsiveness of the system, making it suitable for real-time usage. This combination of techniques allows the system to bridge the gap between general AI tools and actual academic requirements.

Overall, ELEVATE AI provides a more focused and practical solution for students preparing for exams, helping them improve both their understanding and answer presentation. While there are still areas for improvement, the proposed system demonstrates how AI can be adapted to better suit domain specific needs in education.

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