

# NoteGenius: An Intelligent AI-Powered Note Generation and Collaborative Learning Ecosystem

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**Abstract:** *NoteGenius is an intelligent AI-powered note generation and collaborative learning ecosystem designed to address modern learning challenges. Students are often overwhelmed by vast amounts of academic content and struggle to retain key information. Manual note-taking is inefficient and time-consuming, making knowledge synthesis difficult.*

*The proposed system leverages Artificial Intelligence (AI) and Natural Language Processing (NLP) to automate lecture summarization, slide-to-notes conversion, and question generation. Built on the MERN stack foundation, the platform ensures scalability and real-time functionality. The system integrates audio-to-text transcription, generative summarization, and collaborative features to enhance active learning and academic productivity.*

**Keywords:** Artificial Intelligence, NLP, MERN Stack, Lecture Summarization, Collaborative Learning

