

Presento AI: Your Personal Slide Assistant

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Abstract

An AI based Auto Slide Generator offers significant time and effort savings. Current tools like Microsoft PowerPoint and OpenOffice aid researchers by providing slide outlines and themes, but they fall short in assisting with slide content selection. An academic presentation functions as an advertisement for a paper rather than an exhaustive information dump. In PowerPoint presentations, it's acceptable to include images that encapsulate your research's objectives. Visuals serve as highly effective tools, captivating the audience and sustaining their interest while conveying crucial points or ideas. Proposed project work introduces an automated system that produces presentation slides based on provided topics. Proposed system accepts input as keywords and utilizes them to create corresponding presentation slides. An AI-powered tool that transforms presentation creation has been introduced. The objective is to produce slides more quickly and easily. By using Natural Language Processing (NLP) to understand text and find the important parts. Then, turn these parts into attractive slides. The best part of making presentations with this tool is that it takes less time, and they still look great. It shows how technology and creativity can team up to make things better. It's a glimpse into a future where making presentations is simpler, smarter, and more polished.

Keywords: AI, HTML, CSS, Python, Auto Slide Generator, AI-powered tool

INTRODUCTION

In the domain of knowledge sharing via presentation slides, traditional tools like Microsoft PowerPoint excel in design but fall short in content preparation, making slide generation laborious. The demand for effective communication has driven exploration into AI and NLP-driven solutions. Our project addresses the growing disparity between conventional presentation software capabilities and user expectations. The need for interesting and educational presentations has increased in the digital age in a variety of industries, including business and education. However, making powerful presentations might need a lot of talent and time. By automating the slide generating process, AI-based Auto Slide Generators provide a solution that saves time and ensures consistency and quality. This article examines the features, advantages, and possible uses of AI-based slide generators as well as their underlying technology [3].

It might take a lot of time to create visually appealing presentations that effectively convey your thoughts in the hectic work environment of today. Herein lies the role of Presento AI, a clever technology that facilitates and expedites the creation of slides. Presento uses artificial intelligence (AI) to offer slide layout suggestions, arrange data, and even change styles according to your needs, making your presentations look polished and simply to understand. Presento AI takes care of the design elements so you may concentrate on your message rather than work on the graphics for hours. This post describes the key functions of Presento AI, how it helps users make better presentations more rapidly, and how it works.

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While tools like PowerPoint aid content delivery, challenges persist in content preparation, including time-intensive manual creation, ensuring informative and engaging content, and maintaining consistency and efficiency, especially in larger projects or organizations. Our goal is to bridge this gap with an AI-based PowerPoint presentation generator, streamlining the process, enhancing content quality, and enabling users to focus on delivering their core message without content creation intricacies.

In corporate meetings, conferences, or educational settings, presentations are an essential communication tool. Conventional slide production frequently necessitates a large amount of work to provide a consistent visual appeal, choose relevant content, and develop layouts. Advanced algorithms and machine learning are used by AI-based Auto Slide Generators to automate this process, revolutionizing presentation creation and increasing efficiency [8, 9].

LITERATURE SURVEY

The paper "*PPS Gen: Learning-Based Presentation Slides Generation for Academic Papers*" by Yue Hu and Xiaojun Wan, published in *IEEE Transactions on Knowledge and Data Engineering*, discusses a system that automates making presentation slides for academic papers. The system, called PPS Gen, helps presenters create formal, well-organized slides more efficiently. It does this by using a learning model to score the importance of sentences and then applies a method to choose and arrange the key phrases and sentences in a structured way. This approach makes slide preparation faster and more effective for academic presentations [1].

The paper "*IPPT Gen-Intelligent PPT Generator*" by Priya Ganguly and Dr. Prachi M. Joshi, presented at the 2016 CAST conference, looks at ways to make creating presentation slides easier and more efficient. Presentation slides are a great way to explain a topic but putting together a good slide deck means picking out the most important points that really capture the theme. While tools like MS Office and OpenOffice provide basic slide-making options, this paper introduces a smarter tool that can automatically create slides. The goal is to help people quickly make effective presentations by identifying and organizing the key information for them [2].

Amjad Abu-Jbara et al. developed a method to create easy-to-read summaries of scientific papers by focusing on how other researchers cite the paper. Their process has three simple steps: first, they get rid of unnecessary parts of the citations; then, they choose and arrange the most important points in a sensible order; and lastly, they refine the sentences to make them flow better. Their results showed that this method works better than others, making it a valuable tool for summarizing scientific studies through citations [4].

The paper "*Slides Gen: Automatic Generation of Presentation Slides for a Technical Paper Using Summarization*," by presented at the 2009 Florida AI Research Society Conference, introduces a system that automatically creates slides from technical papers. This tool simplifies presentation prep by summarizing key content into organized slides, making it quicker and easier for presenters to prepare. The proposed framework processes papers with abstracts, structured sections (introduction, related work, model, experiments, conclusions), primarily in LATEX format [5].

Min-Yen Kan has built an SlideSeer, a digital library that connects presentations with matching documents. It has three key parts: first, it finds resources using info from research databases like DBLP and CiteSeer; then, it carefully pairs up related content; finally, it offers an easy-to-use interface. This tool helps researchers and teachers quickly find and use presentations alongside their related documents [6].

Advancements in Slide Creators

The Technology Underpinning AI-Powered Slide Creators NLP, or natural language processing

Natural Language Processing (NLP) enables AI systems to understand and process human language. NLP algorithms are used in presentation creation to examine incoming language, identify important points, condense material, and arrange data into logical slides. By doing this, it is ensured that the slides that are produced are accurate and pertinent to the original content.

Machine Learning (ML) Machine learning techniques have improved the performance of slide producers over time.

These algorithms learn to recognise the best text arrangement, suitable graphics, and efficient slide layouts by examining enormous databases of presentations. AI systems can produce slides that adhere to strict functional and aesthetic requirements because of this ongoing learning process [7].

Recognition of Images and Videos: AI algorithms can choose pertinent images to go along with the slide content thanks to advanced picture and video recognition skills. The AI may suggest or automatically insert pictures, charts, and videos that improve the content by examining the text's context. Application of Templates and Design Principles: AI-powered slide makers make use of a pre-made template collection with designs that follow accepted design guidelines. These templates guarantee that slides have a polished appearance and are aesthetically pleasing.

These templates can be altered by the AI system to meet the needs of the presentation.

Characteristics of AI-Powered Auto Slide Creators

1. *Synopsis and Content Analysis:* To discover important aspects and provide summaries, AI algorithms examine the input content. This makes it possible to create targeted, succinct slides that emphasise the most crucial information.
2. *Automatic Layout of Slides:* Using the best design techniques, the AI system intelligently arranges text, photos, and other elements on the slides. It eliminates the need for manual adjustments and ensures a well-balanced and aesthetically pleasing configuration.
3. *Possibilities for Customisation:* The generated slides can have their layout, colour palettes, fonts, and other design components changed by users. This adaptability enables customisation while maintaining the advantages of the AI's automation.
4. *Utilisation of Current Instruments:* AI-powered slide makers can be integrated with well-known presentation programmes like Google Slides and Microsoft PowerPoint. AI-generated content may be easily incorporated into presentations by using this connection, which makes it easy for users to import and export slides.
5. *Instantaneous Cooperation:* Multiple users can collaborate in real-time on a presentation using the real-time collaboration features found in many AI slide generators. This is especially helpful for groups that have slides to produce and review together.

IMPLEMENTATION

The term "generative AI," which stands for "generative artificial intelligence," is the branch of artificial intelligence that focuses on developing systems that can produce new content—such as text, images, audio, and even videos—that is identical to information produced by humans. In the NLP AI-based Auto Slide Generator, the different parts and how they interact are illustrated. The essential components are shown in this condensed diagram:

LLM's role involves ensuring legal compliance in content creation, collaborating with AI engineers to develop algorithms for extracting and presenting information, analysing and curating content, designing an intuitive user interface, conducting testing and validation, preparing documentation and training materials, and considering ethical implications. The LLM works to create a tool that not only generates visually appealing slides but also adheres to legal standards and ethical principles. Block diagram of the proposed system is shown in Figure 1.

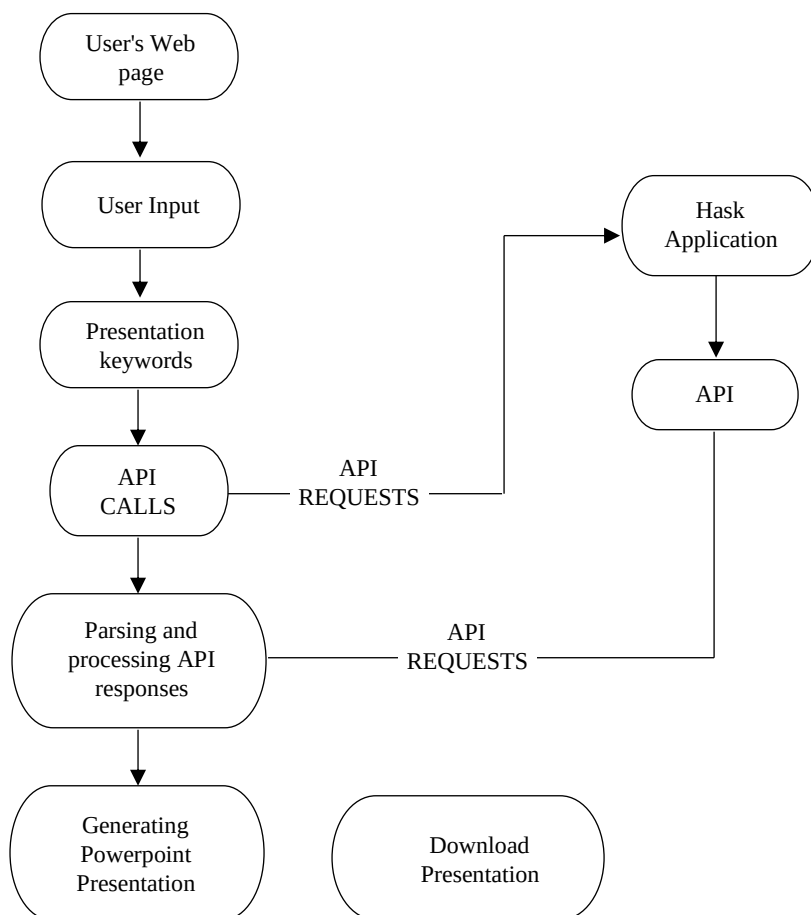


Figure 1. Block diagram of the proposed system.

User Interface

This is the front-end interface that users utilize to enter their preferences and content. Here the user inputs the topic name for generating the presentation.

Flask Web Server

Flask is a lightweight web application framework, handling user requests, managing routing, and serving as the back-end infrastructure. It provides flexibility for building web-based applications and APIs.

API Call

This module interfaces with the OpenAI API, allowing the system to utilize OpenAI's GPT model for generating presentation content.

Natural Language Processing (NLP) and Data Processing

NLP processes the content provided by users, extracting key information and making it usable for the presentation generation process. This component further processes and analyses the user's input data, making it ready for presentation content generation.

AI Presentation Generator

The core component of the system generates presentation content from the processed data. This module is responsible for integrating with design libraries and templates to create visually appealing slides for the presentation.

APPLICATIONS OF AI PRESENTATION GENERATORS

Time Effectiveness

The time needed to create a presentation is greatly decreased by automating the slide production process. Quicker turnaround times result from users being able to concentrate more on the message and content than the specifics of the design.

Reliability and Excellence

AI makes sure that every slide follows uniform design guidelines, producing a polished and well-organized presentation. It is particularly beneficial for companies that need to maintain a consistent brand image.

Availability

AI-powered slide generators facilitate the creation of excellent presentations even for those with no experience in design. With the democratization of slide creation, more people may express themselves clearly and succinctly.

Enhanced Originality

AI takes care of the technical parts of creating slides, freeing users to concentrate on the artistic parts, including developing gripping stories and interacting with the audience. This may result in presentations that are more creative and powerful.

CONCLUSION

The "AI-Based Automatic Presentation Generation" project highlights the remarkable potential of artificial intelligence in revolutionizing content creation and communication. Through systematic data processing and model development, we've demonstrated that automated presentation generation is not only feasible but can greatly enhance information delivery and streamline content creation. As the project progresses towards deployment, it holds the promise of providing users with a powerful tool for creating dynamic and engaging presentations, aligning with the evolving landscape of data-driven communication. In conclusion, this project signifies a significant advancement at the intersection of technology and content generation, with the potential to redefine the way we create and share information, fostering more effective communication and knowledge dissemination.

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REFERENCES

1. Hu Y, Wan X. PPSGen: Learning-based presentation slides generation for academic papers. IEEE transactions on knowledge and data engineering. 2014 Sep 22;27(4):1085-97.
2. Ganguly P, Joshi PM. Ipptgen-intelligent ppt generator. In2016 International Conference on Computing, Analytics and Security Trends (CAST) 2016 Dec 19 (pp. 96-99). IEEE.
3. Autade Dhanshri P, Prof. Raut S.Y, "SLIDEGen: Approach to automatic Slides Generation in International Research Journal of Engineering and Technology (IRJET) Volume: 03 Issue: 01—Jan2016.

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4. Abu-Jbara A, Radev D. Coherent citation-based summarization of scientific papers. In Proceedings of the 49th annual meeting of the association for computational linguistics: Human language technologies 2011 Jun (pp. 500-509).
 5. Sravanthi M, Chowdary CR, Kumar PS. Slidesgen: Automatic generation of presentation slides for a technical paper using summarization. In Twenty-Second International FLAIRS Conference 2009 Mar 17.
 6. Kan MY. SlideSeer: A digital library of aligned document and presentation pairs. In Proceedings of the 7th ACM/IEEE-CS joint conference on Digital libraries 2007 Jun 18 (pp. 81-90).
 7. Amini MR, Gallinari P. Self-supervised learning for automatic text summarization by text-span extraction. In Proceedings of the 23rd BCS European Annual Colloquium on Information Retrieval (ECIR'01) 2001 (pp. 55-63).
 8. Barrera A, Verma R. Combining syntax and semantics for automatic extractive single-document summarization. In Computational Linguistics and Intelligent Text Processing: 13th International Conference, CICLing 2012, New Delhi, India, March 11-17, 2012, Proceedings, Part II 13 2012 (pp. 366-377). Springer Berlin Heidelberg.
 9. Ferreira R, de Souza Cabral L, Lins RD, e Silva GP, Freitas F, Cavalcanti GD, Lima R, Simske SJ, Favaro L. Assessing sentence scoring techniques for extractive text summarization. Expert systems with applications. 2013 Oct 15;40(14):5755-64.