

Videofolio

Submitted in partial fulfillment of the requirements for the award of degree of

**BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE & ENGINEERING**



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Introduction:

In today's fiercely competitive job market, job seekers encounter the daunting challenge of setting themselves apart from a vast pool of candidates, a challenge that becomes even more pronounced during periods of economic uncertainty, such as layoffs. The traditional paper resume, once the staple of job applications, often falls short in effectively encapsulating the true essence and potential of a candidate. In recognition of this inadequacy, we introduce "VideoFolio" – an innovative engineering project poised to redefine the job application process. The project transcends the limitations of conventional resumes by pioneering the creation of dynamic video resumes derived from existing PDF counterparts. This groundbreaking solution is tailored to empower job seekers who aspire to elevate their job applications by presenting captivating and highly personalized video resumes.

Field of Project:

This project resides within the field of computer science, leveraging advancements in artificial intelligence to create an innovative application. More specifically, it utilizes generative AI, an emerging subdomain of AI focused on automatically generating novel content like images, videos, and text. The core objective is to develop a solution that converts static PDF resumes into dynamic video resumes using AI and other technologies. Overall, it aims to push boundaries in AI-powered content creation and personalization.

Technologies Used:

- **Generative AI:** We parse the textual information from the PDF resumes and feed it as input to generative language models like PALM and GPT. We ask the models questions about the candidate's details like their university or skills, and the AI model generates the relevant text output. This text output is then added to slides in the video resume along with relevant images, animations and visual elements. The generative AI enhances the video resume by automatically summarizing key details about the candidate's qualifications and experience.
- **FFmpeg:** This open-source software library is used for processing and manipulating the generated videos. FFmpeg enables key editing functions like format conversion, resolution adjustments, and compression to ensure the final video resumes have a smooth, professional look and feel.
- **Web Server for API Calls:** A REST API server hosts the core functionality and connects the various components. Users can submit PDF resumes via API calls, which triggers the generative AI to produce a matching video resume. The API layer handles the interface between the front-end and the back-end AI.

In summary, the solution leverages a synthesis of technologies spanning generative AI, video editing, and web services. Together, these components enable the automated generation of engaging video resumes tailored to each user. The end product is a robust pipeline facilitating personalized videos at scale.

Feasibility Study:

The feasibility of the "videoFolio" project is established through a comprehensive assessment of its need and significance:

Need: In a competitive job market, job seekers are constantly seeking innovative ways to stand out from the thousands of other applicants. Traditional text-based resumes are becoming less effective at capturing a candidate's personality and uniqueness. Video resumes offer a modern alternative that can help applicants differentiate themselves.

Significance: Video resumes offer a fresh and engaging approach to job applications. They allow candidates to convey more than just a list of credentials - they can show their communication skills, enthusiasm and fit for the role through visual and audio media. This has the potential to give job seekers a competitive edge over text-only resume submissions.

The significance of this project lies in its potential to redefine how job seekers present themselves to potential employers, making it a valuable and timely endeavor. As companies continue to look for new talent, innovative recruitment tools like video resumes will become increasingly important.

In summary, the "videoFolio" project demonstrates strong feasibility due to the need for job seekers to stand out in today's applicant pools, and the potential significance of video resumes as a differentiating recruitment tool. A video resume platform has the prospects to transform how candidates market themselves and impress hiring managers.

Methodology/Planning of Work:

The project will follow a well-defined methodology to achieve its objectives:

- **Data Input:** Users will be able to upload their PDF resumes and profile details to the web application. This input data will form the basis for generating the video resumes.
 - **Data Processing:** The uploaded PDF resumes will be processed using the generative AI and machine learning models. FFmpeg libraries will be utilized to convert text from the resume into a video format with optimal visual elements, animations and effects.
 - **User Output:** The final video resumes will be delivered to the respective users. They will then be able to download, review and customize the generated video before submitting it as part of their job applications.
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Module & Team Member-wise Distribution of Work:

- **Vishal Kumar (Project Technical Lead):**
 - Integration of Generative AI APIs.
 - Managing overall user experience.
- **Shruti Mishra (Communication & Frontend Developer):**
 - Official communication with co-ordinators.
 - Frontend Development.
- **Swastika Singh (Frontend Design & Documentation):**
 - Frontend Design.
 - Documentation of project progress
- **Abhishek Kumar Singh (Backend Developer):**
 - Backend development for APIs
 - Integration of FFmpeg for video processing

Innovations in Project:

"videoFolio" brings several novel elements that set it apart from traditional resume platforms and previous video resume projects:

- It leverages generative AI models and machine learning to automatically create customized, dynamic video resumes for users. This goes beyond simple video recording and editing tools by incorporating artificial intelligence.
- It addresses the limitations of static PDF resumes by converting the text-based information into a visually engaging and personalized video presentation. The generated video resume can highlight key details in a more memorable and impactful manner.
- The AI system analyzes a candidate's resume and profile and automatically determines the optimal video structure to best showcase the user's skills and qualifications for a given job or industry.

Software and Hardware Requirements:

- Generative AI libraries like Langchain and others for creating the AI models that generate the video resumes.
- FFmpeg and other video processing libraries for manipulating video files, adding effects, transposing text, etc. A web application framework like Express.js or Flask to build the web interface for users to upload their resumes and profile details.
- Standard high-performance server hardware will be required to host the web application and API, and process the large video files during AI model training and video resume generation.

Bibliography:

The development of the project was supported by the following study materials and references:

[Research papers on generative AI](#)

[Documentation for FFmpeg](#)

[Technical documentation for web server setup](#)