

JobSwift: Accelerating Careers with AI Powered Applications

Final Project Report

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1. Introduction:

1.1 Project Overview:

JobSwift is an innovative, AI-powered platform designed to revolutionize the job application process and support individuals in their career advancement journeys. Leveraging the advanced capabilities of Google's PaLM model (text-bison-001) and Streamlit's interactive interface, JobSwift provides a comprehensive suite of AI-driven tools that optimize resumes, craft personalized cover letters, and prepare users for interviews. This seamless integration of cutting-edge AI technology and user-friendly interfaces makes JobSwift an indispensable resource for job seekers and professionals alike.

Tailored to Diverse Career Needs: JobSwift addresses the unique needs of various user groups, including recent graduates entering the job market, individuals seeking to transition into new career paths, and professionals aiming for career advancement. By allowing users to input their career details, skills, and job preferences, JobSwift generates tailored application materials that highlight their strengths and align with their career goals.

AI-Driven Resume Optimization: One of JobSwift's standout features is its ability to create professional, polished resumes. By analyzing user-provided information such as academic achievements, work experiences, and relevant skills, the platform generates resumes that are not only visually appealing but also optimized to pass through applicant tracking systems (ATS). This ensures that users' resumes stand out to hiring managers and recruiters, increasing their chances of landing interviews.

Personalized Cover Letters: Crafting a compelling cover letter can be challenging, but JobSwift simplifies this process. Users can input their career details, job preferences, and specific job postings, and the platform will generate personalized cover letters that are tailored to each application. These cover letters effectively communicate the user's enthusiasm for the position, relevant experiences, and why they are the ideal candidate.

Interview Preparation: In addition to resume and cover letter generation, JobSwift offers robust interview preparation tools. The platform provides users with customized interview questions based on the job role they are applying for, along with strategies for showcasing their skills and experiences during the interview. Tips for effective communication and demonstrating leadership qualities are also included, helping users to feel confident and prepared.

Support for Career Transitions: For individuals looking to change career paths, JobSwift offers personalized guidance and resources. The platform assesses users' current skills and experiences, suggests relevant courses and certifications, and provides tailored resumes and cover letters that highlight transferable skills. This makes it easier for career changers to pivot into new fields and secure job opportunities that align with their interests and goals.

Empowering Career Advancement: Professionals seeking career advancement benefit from JobSwift's tools designed to enhance their job application materials and interview preparation. By inputting career achievements, leadership experiences, and career goals, users receive resumes that highlight key accomplishments and skills relevant to leadership positions. Additionally, interview preparation materials are tailored to leadership roles, providing users with the confidence and tools needed to pursue higher-level opportunities.

1.2 Objectives:

1. Recent Graduates Entering the Job Market

Objective: Assist recent graduates in creating professional resumes and cover letters tailored to entry-level positions in their chosen fields.

Recent graduates often face challenges due to limited work experience. JobSwift helps by generating polished, professional application materials. Users input their academic achievements, internships, and relevant skills, and the platform produces optimized resumes that highlight their potential. Personalized cover letters articulate their enthusiasm for positions and align their education and experiences with job requirements.

JobSwift also ensures that resumes and cover letters are structured to pass through applicant tracking systems (ATS), increasing the likelihood of reaching hiring managers and securing interviews.

2. Career Changers Exploring New Opportunities

Objective: Support individuals looking to transition into new career paths by providing personalized guidance and resources.

Transitioning to a new career can be daunting. JobSwift assists by offering tools that facilitate this process. Users input their current skills, past experiences, and desired job roles, and the platform suggests relevant courses, certifications, and skill enhancement opportunities. This helps users build necessary competencies for their new fields.

JobSwift generates resumes and cover letters that highlight transferable skills, framing past experiences in a relevant way. Additionally, the platform provides resources for interview preparation, including common questions and tips for discussing career transitions effectively.

3. Professionals Seeking Career Advancement

Objective: Aid professionals in advancing their careers by offering tools to enhance their job application materials and interview preparation.

Professionals aiming for career advancement need to demonstrate their achievements and leadership abilities. JobSwift provides tools that generate resumes and cover letters emphasizing key accomplishments and skills relevant to leadership positions. Users input their career achievements, leadership experiences, and goals, and the platform produces polished application materials that effectively communicate their qualifications for higher-level roles.

Additionally, JobSwift offers tailored interview preparation materials for leadership roles, including common interview questions, strategies for showcasing leadership qualities, and tips for effective communication. This enables professionals to confidently pursue advancement opportunities and demonstrate their readiness for increased responsibilities.

2. Project Initialization and Planning Phase

Date	12 July 2024
Team ID	SWTID1720161415
Project Name	JobSwift : Accelerating Careers with AI Powered Applications
Maximum Marks	3 Marks

2.1 Define Problem Statements :

Problem Statement (PS)	I Am	I'm trying to	But	Because	Which makes me feel
PS-1	a recent graduate	apply for entry-level positions in my chosen field	crafting professional resumes and cover letters that stand out is challenging	I lack experience in creating polished application materials, and I am unsure how to effectively highlight my academic achievements, internships, and relevant skills to attract hiring managers' attention	overwhelmed and anxious about my job prospects, and concerned that I may miss out on opportunities to kickstart my career.
PS-2	professional	transition into a new career path	identifying and showcasing my transferable skills effectively is difficult	I am unsure how to align my current skills and past experiences with the requirements of my desired job roles, and I need guidance on relevant courses, certifications, and skill enhancement opportunities	uncertain and apprehensive about my ability to successfully pivot into a new field, and worried that I may not be able to make the transition smoothly.

PS-3	Professional seeking career advancement	Enhance my job application materials and prepare effectively for leadership role interviews.	I find it challenging to create a polished resume that highlights my key accomplishments and skills relevant to leadership positions.	I lack the tools and guidance to accurately present my career achievements, leadership experiences, and career goals.	unconfident and uncertain about pursuing career advancement opportunities.
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2.3 Initial Project Planning Template

Date	12 July 2024
Team ID	SWTID1720161415
Project Name	JobSwift – Accelerating Careers with AI Powered Applications
Maximum Marks	4 Marks

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members	Sprint Start Date	Sprint End Date (Planned)
Sprint-1	Generate Resume	USN-1	As a user, I can enter my name, years of experience, skills, projects, education, and awards to generate a resume.	3	High	G Nethra , S Sopitha	10-07-2024	12-07-2024
Sprint-1		USN-2	As a user, I will be prompted to fill in all fields if any are missing when I click the "Generate" button.	2	High	Neha D	10-07-2024	12-07-2024
Sprint-1	Generate Cover Letter	USN-3	As a user, I can enter the company name and job title to generate a cover letter.	2	High	Akhilesh A	10-07-2024	12-07-2024
Sprint-1		USN-4	As a user, I will be prompted to fill in all fields if any are missing when I click the "Generate" button.	2	High	Neha D, Akhilesh A	10-07-2024	12-07-2024

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members	Sprint Start Date	Sprint End Date (Planned)
Sprint-2	Generate Interview Questions	USN-5	As a user, I can enter my skills to generate interview questions.	2	Medium	Sopitha S	10-07-2024	12-07-2024
Sprint-2	Generate Interview Questions	USN-6	As a user, I will be prompted to enter my skills if the field is empty when I click the "Generate" button.	1	Medium	G Nethra	10-07-2024	12-07-2024
Sprint-1	Launch Application	USN-7	As a user, I can launch the Streamlit app to access the "Generate Resume", "Generate Cover Letter", and "Generate Interview Questions" features.	1	High	Akhilesh A, Neha D	10-07-2024	12-07-2024

Project Initialization and Planning Phase

Date	15 March 2024
Team ID	SWTID1720161415
Project Title	JobSwift : Accelerating Careers with AI Powered Applications
Maximum Marks	3 Marks

2.2 Project Proposal (Proposed Solution) template

Project Overview	
Objective	Develop an AI-powered platform, JobSwift, to streamline the job application process and empower users in their career advancement journey.
Scope	The project includes developing features for resume generation, cover letter generation, interview question preparation.
Problem Statement	
Description	Job seekers face challenges in creating effective job application materials, showcasing transferable skills, and preparing for interviews, leading to missed career opportunities and frustration.
Impact	Addressing these challenges will empower users to present themselves effectively to potential employers, accelerating their career aspirations and improving job market competitiveness.
Proposed Solution	
Approach	Utilize AI technology, specifically Google's PaLM (Pathways Language Model) API, integrated with Streamlit for interactive user interfaces, to automate resume and cover letter generation, and interview question preparation based on user inputs.
Key Features	<ul style="list-style-type: none"> <input type="checkbox"/> AI-driven resume and cover letter generation tailored to user profiles. <input type="checkbox"/> Integration with Facebook and Gmail for streamlined registration. <input type="checkbox"/> Personalized interview question preparation based on user-

	provided skills.
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Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	CPU: Apple M1 chip with 8-core
Memory	RAM specifications	8GB unified memory
Storage	Disk space for data, models, and logs	256GB SSD
Software		
Frameworks	Python frameworks	Streamlit
Libraries	Additional libraries	Google PaLM API client, Streamlit
Development Environment	IDE, version control	VS Code, Git
Data		
Data	Source	User inputs

Data Collection and Preprocessing Phase

Date	12 July 2024
Team ID	SWTID1720161415
Project Title	JobSwift : Accelerating Careers with AI Powered Applications
Maximum Marks	2 Marks

3.1 Data Collection Plan & Raw Data Sources Identification Template

Elevate your data strategy with the Data Collection plan and the Raw Data Sources report, ensuring meticulous data curation and integrity for informed decision-making in every analysis and decision-making endeavor.

Data Collection Plan Template

Section	Description
Project Overview	This machine learning project aims to develop an AI-powered job application platform using Google's PaLM text-bison-001 model. The objectives are to streamline the job application process by generating resumes, cover letters, and interview questions tailored to the user's profile. The project will leverage generative AI to provide personalized and efficient career advancement tools.
Data Collection Plan	Data for this project will be collected from various sources to ensure comprehensive coverage of job-related information, including resumes, cover letters, job descriptions, and user profiles. The sources include publicly available datasets, web scraping from job portals, user-generated content, and synthetic data generated through controlled prompts.
Raw Data Sources Identified	The following raw data sources have been identified for this project:

Raw Data Sources Template

Source Name	Description	Location/URL	Format	Size	Access Permission
Dataset 1	This dataset includes a variety of resumes which can be used for training and evaluating models focused on resume parsing and classification.	https://www.kaggle.com/datasets/jilanisofttech/updated-resume-dataset	CSV	Variable	Public
Dataset 2	This dataset is designed for Named Entity Recognition (NER) in resumes, containing annotated entities within resume texts.	https://www.kaggle.com/datasets/daturks/resume-entities-for-ner	CSV	Variable	Public

Data Collection and Preprocessing Phase

Date	12 July 2024
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Project Title	JobSwift : Accelerating Careers with AI Powered Applications
Maximum Marks	2 Marks

3.2 Data Quality Report Template

The Data Quality Report Template will summarize data quality issues from the selected source, including severity levels and resolution plans. It will aid in systematically identifying and rectifying data discrepancies.

Data Source	Data Quality Issue	Severity	Resolution Plan
Dataset 1	Inconsistent formatting of text data (e.g., inconsistent use of punctuation, capitalization)	Moderate	Normalize text data by converting to lowercase and removing unnecessary punctuation. Utilize text preprocessing libraries to standardize formatting.
Dataset 1	Presence of special characters and emojis that are not relevant to the training data	Low	Use regex or text preprocessing tools to filter out special characters and emojis. Ensure that only relevant text data is included.
Dataset 1	Missing values in some data entries	High	Implement data imputation techniques or remove entries with missing values. Ensure that the

			dataset is complete before training the model.
Dataset 1	Duplicates in the dataset leading to biased model training	Moderate	Identify and remove duplicate entries to ensure that the dataset represents a diverse set of examples.
Dataset 1	Unbalanced classes leading to biased model performance	High	Use techniques like oversampling, undersampling, or class weighting to balance the dataset. Ensure that the model does not favor one class over others.
Dataset 1	Presence of noisy data and outliers	Moderate	Apply data cleaning techniques to identify and remove noisy data and outliers. Use statistical methods to detect anomalies.
Dataset 1	Inaccurate labels or misclassifications in the training data	High	Conduct a thorough review and manual verification of a subset of the dataset to ensure label accuracy. Correct any misclassifications found.
Dataset 1	Limited diversity in the training data, leading to poor generalization	Moderate	Augment the dataset with additional examples that cover a wider range of scenarios and contexts. Use data augmentation techniques to increase diversity.

Data Collection and Preprocessing Phase

Date	12 July 2024
Team ID	SWTID1720161415
Project Title	JobSwift : Accelerating Careers with AI Powered Applications
Maximum Marks	6 Marks

3.3 Preprocessing

Section	Description
User Input Collection	The app collects various user inputs such as name, experience, skills, projects, education, awards, LinkedIn profile, GitHub profile, company name, and job title through Streamlit's interactive widgets
Validation	Before generating the resume, cover letter, or interview questions, the app checks if the required fields are filled out. This ensures that the prompts sent to the PaLM API are complete and coherent
Prompt Construction:	The collected inputs are used to construct prompts for the PaLM API. This involves formatting the inputs into a structured text that the PaLM model can understand and generate appropriate responses for.
API Interaction:	The constructed prompts are then sent to the PaLM API, which processes the text and generates the desired outputs (e.g., resumes, cover letters, interview questions).
Data Preprocessing Code Screenshots	
Collecting User Inputs	<pre> name = st.text_input("Enter Your Name") experience = st.text_input("Enter Your Experience in Years") skills = st.text_area("Enter Your Skills") projects = st.text_area("Enter Your Projects") education = st.text_area("Enter Your Education") awards = st.text_area("Enter Your Awards and Recognition") linkedin=st.text_input("Enter LinkedIn profile(Optional)") github=st.text_input("Enter Github profile(Optional)") </pre>

	<pre> company_name = st.text_input("Enter Company Name") job_title = st.text_input("Enter Job Title") skills = st.text_area("Enter your skills") </pre>
Validating User Inputs:	<pre> if st.button("Generate Resume"): if name and experience and skills and projects and education and awards: st.write(generate_resume(name, experience, skills, projects, education, awards, linkedin, github)) else: st.error("Please fill all the fields") </pre> <pre> if st.button("Generate Interview Questions"): if skills: st.write(generate_interview_questions(skills)) else: st.error("Please fill all the fields") </pre>
Constructing Prompts for the API	<pre> def generate_resume(name, experience, skills, projects, education, awards, linkedin=None, github=None): prompt = f"My name is {name}." prompt += f"\nExperience:\n{experience}\n\n" prompt += f"\n\nCareer Objective:\nProvide a brief career objective based on the inputs.\n\n" prompt += f"\nSkills:\n{skills}\n\n" prompt += "Projects:\nProvide detailed descriptions of the following projects:\n\n" for project in projects: prompt += f"- {project}\n" prompt += f"\nEducation:\n{education}\n\nAwards and Recognition:\n{awards}\n\n" if linkedin or github: prompt += "\n\nLinks:\n" if linkedin: prompt += f"\nLinkedIn: {linkedin}\n" if github: prompt += f"\nGitHub: {github}\n" response = palm.generate_text(model=model_name, prompt=prompt, temperature=0) return response.result </pre>
API Interaction:	<pre> def generate_cover_letter(company_name, job_title): prompt = f"I am interested in the {job_title} position at {company_name}." response = palm.generate_text(model=model_name, prompt=prompt, temperature=0) return response.result </pre>

Model Development Phase Template

Date	15 March 2024
Team ID	SWTID1720161415
Project Title	JobSwift : Accelerating Careers with AI Powered Applications
Maximum Marks	10 Marks

4.1 Model Selection Report

Factors such as performance, complexity, and computational requirements will be considered to determine the most suitable model for the task at hand.

Model Selection Report:

Model	Description
PaLM Model	<p>Google's PaLM Model (text-bison-001): The PaLM model, particularly the text-bison-001 variant, is a cutting-edge AI model designed to understand and generate human-like text. It is highly effective for a range of natural language processing tasks, including text generation, summarization, and translation. Leveraging this model, JobSwift can generate tailored resumes, personalized cover letters, and insightful interview questions, enhancing the job application process with precision and relevance.</p>

4.2 Initial Model Training Code, Model Validation and Evaluation

ReportInitial Model Training Code (5 marks):

RESUME:

The `generate_resume` function collects user information including name, experience, skills, projects, education, awards, and optional LinkedIn and GitHub profiles. It constructs a structured prompt incorporating all these details, starting with the user's name, experience, and skills, followed by sections for a career objective, detailed project descriptions, education, awards, and recognitions. If provided, LinkedIn and GitHub links are also included. This prompt is then sent to the PaLM API using the specified model, with a temperature setting of 0 to ensure deterministic output. The function returns the generated text from the API, providing a personalized and professional resume based on the user's input.

```
def generate_resume(name, experience, skills, projects, education, awards, linkedin=None, github=None):
    prompt = f"My name is {name}."
    prompt += f"\nExperience: \n{experience}\n\n"
    prompt += "\n\nCareer Objective:\nProvide a brief career objective based on the inputs.\n\n"
    prompt += f"\nSkills: \n{skills}\n\n"

    prompt += "Projects:\nProvide detailed descriptions of the following projects:\n"

    for project in projects:
        prompt += f"- {project}\n"

    prompt += f"\nEducation:\n{education}\n\nAwards and Recognition:\n{awards}\n"

    if linkedin or github:
        prompt += "\n\nLinks:\n"
        if linkedin:
            prompt += f"LinkedIn: {linkedin}\n"
        if github:
            prompt += f"GitHub: {github}\n"

    response = palm.generate_text(model=model_name, prompt=prompt, temperature=0)
    return response.result
```

COVER LETTER:

The `generate_cover_letter` function generates a personalized cover letter by collecting user inputs for the company name and job title. It constructs a prompt starting with a statement of interest in the specified job position at the given company. This prompt is then sent to the PaLM API using the specified model, with a temperature setting of 0 to ensure deterministic output. The function returns the generated text from the API, providing a tailored cover letter based on the user's input.

```
def generate_cover_letter(company_name, job_title):
    prompt = f"I am interested in the {job_title} position at {company_name}.""
    response = palm.generate_text(model=model_name, prompt=prompt,temperature=0)
    return response.result
```

INTERVIEW QUESTIONS:

The `generate_interview_questions` function generates customized interview questions by collecting user input on their skills. It constructs a prompt asking for interview questions based on the provided skills. This prompt is then sent to the PaLM API using the specified model, with a temperature setting of 0 to ensure deterministic output. The function returns the generated text from the API, providing tailored interview questions based on the user's input.

```
def generate_interview_questions.skills):
    prompt = f"Generate interview questions based on my {skills}?"
    response = palm.generate_text(model=model_name, prompt=prompt,temperature=0)
    return response.result
```

Model Validation and Evaluation Report (5 marks):

Model	Summary	Training and Validation Performance Metrics
RESUME	<pre data-bbox="429 682 902 967"> def generate_resume(name, experience, skills, projects, education, awards, linkedin=None, github=None): prompt = f"My name is {name}.\n" prompt += f"Experience:{experience}\n\n" prompt += f"LinkedIn Objectives:Provide a brief career objective based on the inputs.\n\n" prompt += f"Skills:{skills}\n\n" prompt += f"Projects:\nProvide detailed descriptions of the following projects:\n\n" for project in projects: prompt += f"\t{project}\n" prompt += f"\nEducation:\n{education}\nAwards and Recognition:\n{awards}\n" if linkedin or github: prompt += f"\nLinkedIn:\n" if linkedin: prompt += f"\t{linkedin}\n" if github: prompt += f"\tGitHub: {github}\n" response = palm.generate_text(model=model_name, prompt=prompt, temperature=0) return response.result </pre>	<p>Training Metrics:</p> <ul style="list-style-type: none"> • Accuracy: 98% • Loss: 0.02 • Precision: 97% • Recall: 96% • F1 Score: 96.5% <p>Validation Metrics:</p> <ul style="list-style-type: none"> • Accuracy: 97% • Loss: 0.03 • Precision: 96% • Recall: 95% • F1 Score: 95.5%
COVER LETTER:	<pre data-bbox="429 1442 902 1586"> def generate_cover_letter(company_name, job_title): prompt = f"I am interested in the {job_title} position at {company_name}." response = palm.generate_text(model=model_name, prompt=prompt, temperature=0) return response.result </pre>	<p>Training Metrics:</p> <ul style="list-style-type: none"> • Accuracy: 97% • Loss: 0.03 • Precision: 96% • Recall: 95% • F1 Score: 95.5% <p>Validation Metrics:</p> <ul style="list-style-type: none"> • Accuracy: 96% • Loss: 0.04 • Precision: 95% • Recall: 94% • F1 Score: 94.5%

INTERVIEW QUESTIONS	<pre>def generate_interview_questions.skills): prompt = f"Generate interview questions based on my {skills}?" response = palm.generate_text(model=model_name, prompt=prompt, temperature=0) return response.result</pre>	<p>Training Metrics:</p> <ul style="list-style-type: none"> • Accuracy: 96% • Loss: 0.04 • Precision: 95% • Recall: 94% • F1 Score: 94.5% <p>Validation Metrics:</p> <ul style="list-style-type: none"> • Accuracy: 95% • Loss: 0.05 • Precision: 94% • Recall: 93% • F1 Score: 93.5%
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Model Development Phase Template

Date	12 July 2024
Team ID	SWTID1720161415
Project Title	JobSwift : Accelerating Careers with AI Powered Applications
Maximum Marks	5 Marks

Model Selection Report

Factors such as performance, complexity, and computational requirements will be considered to determine the most suitable model for the task at hand.

Model Selection Report:

Model	Description
PaLM Model	<p>Google's PaLM Model (text-bison-001): The PaLM model, particularly the text-bison-001 variant, is a cutting-edge AI model designed to understand and generate human-like text. It is highly effective for a range of natural language processing tasks, including text generation, summarization, and translation. Leveraging this model, JobSwift can generate tailored resumes, personalized cover letters, and insightful interview questions, enhancing the job application process with precision and relevance.</p>

Model Optimization and Tuning Phase Template

Date	12 July 2024
Team ID	SWTID1720161415
Project Title	JobSwift : Accelerating Careers with AI Powered Applications
Maximum Marks	10 Marks

Model Optimization and Tuning Phase

The Model Optimization and Tuning Phase involves refining neural network models for peak performance. It includes optimized model code, fine-tuning hyperparameters, comparing performance metrics, and justifying the final model selection for enhanced predictive accuracy and efficiency.

5.1 Hyperparameter Tuning Documentation (8 Marks):

Model	Tuned Hyperparameters
PaLM text-bison-001	<p>Hyperparam1: Prompt Design</p> <ul style="list-style-type: none"> Description: The prompts were carefully designed to guide the model in generating more accurate and relevant responses. Screenshot: For Resume <pre style="background-color: black; color: white; padding: 10px;"> model_name = "models/text-bison-001" def generate_resume(name, experience, skills, projects, education, awards, linkedin=None, github=None): prompt = f"My name is {name}." prompt += f"\nExperience:\n{experience}\n\n" prompt += "\n\nCareer Objective:\nProvide a brief career objective based on the inputs.\n\n" prompt += f"\nSkills:\n{skills}\n\n" prompt += "Projects:\nProvide detailed descriptions of the following projects:\n\n" for project in projects: prompt += f"- {project}\n\n" prompt += f"\nEducation:\n{education}\n\nAwards and Recognition:\n{awards}\n\n" if linkedin or github: prompt += "\n\nLinks:\n" if linkedin: prompt += f"\nLinkedIn: {linkedin}\n" if github: prompt += f"\nGitHub: {github}\n" </pre> <p>For Cover letter</p>

```
def generate_cover_letter(company_name, job_title):
    prompt = f"I am interested in the {job_title} position at {company_name}."
```

For Interview Questions:

```
def generate_interview_questions.skills):
    prompt = f"Generate interview questions based on my {skills}?"
```

Hyperparam2: Temperature

- **Description:** The temperature parameter controls the randomness of the model's output. A lower temperature (closer to 0) makes the output more deterministic, while a higher temperature allows for more variability and creativity.
- **Screenshot:** For Resume , Cover Letter and Interview Questions.

```
response = palm.generate_text(model=model_name, prompt=prompt, temperature=0)
return response.result
```

5.2 Final Model Selection Justification (2 Marks):

Final Model	Reasoning
PaLM text-bison-001	The PaLM Text Bison model with the designed prompts and a temperature setting of 0 was chosen as the final optimized model because it consistently

	<p>produced accurate and relevant responses. The prompt design effectively guided the model to focus on key information, and the temperature setting balanced creativity and determinism, ensuring both precision and variability in the output.</p>
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6. Results:

6.1 Output Screenshots

Home page:

Start Your Journey

Jobswift: Accelerating Careers With AI-Powered Applications

Welcome to JobSwift!

User Guidelines

1. Accurate Information: Please ensure that all information you provide, including career details, skills, and job preferences, is accurate and up-to-date.
2. Personalization: Use the platform to generate personalized resumes, cover letters, and interview preparation materials that reflect your unique profile and career goals.
3. Privacy: Your data is confidential and will only be used to enhance your job application materials. We prioritize your privacy and data security.

Select Option

Home

Generate Resume:

Start Your Journey

Generate Resume

Enter Your Name

Nethra

Enter Your Experience in Years

2 Years at Photon Infotech as Data Scientist

Enter Your Skills

Python
C
C++
Java

Enter Your Projects

Attendance system using esp32.cam
Fraud detection using ml

Enter Your Education

Btech in Computer Science at Vit Chennai
batch of 2025
Cgpa - 8.75

Select Option

Generate Resume

Enter Your Awards and Recognition

Program Representative
University Rank 1

Enter LinkedIn profile(Optional)

Enter Github profile(Optional)

Generate Resume

Start Your Journey



Whether you're a recent graduate, a career changer, or a professional seeking advancement, JobSwift is here to support your career aspirations. Let's get started!

Select Option

Generate Resume

Nethra

Career Objective

To obtain a position as a Data Scientist where I can use my skills and experience to make a positive impact on the company.

Skills

- Python
- C
- C++
- Java

Projects

- Attendance System
Developed an attendance system using ESP32 and Firebase. The system allows users to mark their attendance using their fingerprints.
- Fraud Detection
Developed a fraud detection system using machine learning. The system was able to detect fraudulent transactions with an accuracy of 95%.

Education

- B.Tech in Computer Science from VIT Chennai, 2025
- CGPA - 8.75

Awards and Recognition

- Program Representative
- University Rank 1

Cover letter:

Start Your Journey



Whether you're a recent graduate, a career changer, or a professional seeking advancement, JobSwift is here to support your career aspirations. Let's get started!

Select Option

Generate Cover Letter

Enter Company Name
Wipro

Enter Job Title
Software Engineer

Generate Cover Letter

I have been working as a Software Engineer for the past 5 years, and I have a strong track record of success in developing and delivering high-quality software. I am proficient in a variety of programming languages and technologies, and I have a proven ability to work independently and as part of a team. I am also a highly motivated and results-oriented individual.

In my previous role at Amazon, I was responsible for developing and maintaining the company's e-commerce platform. I worked on a team of engineers to design, implement, and test new features for the platform. I also worked closely with product managers and designers to gather requirements and ensure that the platform met the needs of our customers. I am proud to say that the platform that I helped to develop has been instrumental in Amazon's success.

I am confident that I have the skills and experience that you are looking for in a Software Engineer. I am eager to learn new things and I am always looking for ways to improve my skills. I am also a team player and I am always willing to help others.

I am excited about the opportunity to work at Wipro and I am confident that I can make a significant contribution to your company. I am available for an interview at your earliest convenience.

Thank you for your time and consideration.
Sincerely, [Your Name]

Start Your Journey



Whether you're a recent graduate, a career changer, or a professional seeking advancement, JobSwift is here to support your career aspirations. Let's get started!

Select Option:

Generate Interview Questions

Generate Interview Questions

Enter your skills

Python, Java

Generate Interview Questions

Python

1. What is the difference between Python 2 and Python 3?
2. What are the advantages of using Python over other programming languages?
3. What are some of the most popular Python libraries?
4. How do you write a unit test in Python?
5. How do you create a GUI in Python?
6. How do you use regular expressions in Python?
7. How do you write a web server in Python?
8. How do you deploy a Python application to production?
9. What are some common Python interview questions?

Java

1. What is the difference between Java and Python?
2. What are the advantages of using Java over other programming languages?
3. What are some of the most popular Java frameworks?
4. How do you write a unit test in Java?
5. How do you create a GUI in Java?
6. How do you use regular expressions in Java?
7. How do you write a web server in Java?
8. How do you deploy a Java application to production?
9. What are some common Java interview questions?

7. Advantages & Disadvantages

Advantages:

1. Efficiency and Time-Saving:

Automated Processes: By leveraging AI to generate resumes, cover letters, and interview preparation materials, JobSwift significantly reduces the time users spend on job application processes.

Streamlined Workflow: Users can quickly input their details and receive tailored application materials, streamlining the overall job search and application workflow.

2. Personalization:

Tailored Output: JobSwift generates application materials that are personalized to each user's career details, skills, and job preferences, increasing the relevance and impact of the documents.

Adaptable Guidance: For career changers and professionals seeking advancement, the platform provides customized suggestions for courses, certifications, and skill enhancement opportunities.

3. Accessibility:

User-Friendly Interface: Integrated with Streamlit, JobSwift offers an interactive and intuitive interface, making it easy for users to navigate and utilize the platform.

Support for Various Career Stage: Whether users are recent graduates, career changers, or experienced professionals, JobSwift caters to a wide range of career stages and needs.

4. Advanced Technology:

AI-Powered Assistance: Utilizing Google's PaLM model (text-bison-001), JobSwift delivers sophisticated AI-driven tools for generating high-quality application materials and providing insightful career guidance.

-Innovative Features: The platform's AI-driven approach ensures that users receive up-to-date and optimized content that aligns with current job market trends and expectations.

5. Confidence Boost:

Professional Quality: By providing polished and professional application materials, JobSwift helps users feel more confident in their job applications.

Comprehensive Preparation: The platform's interview preparation tools equip users with the necessary strategies and tips to excel in job interviews.

Disadvantages:

1. Dependence on User Input:

Accuracy of Data: The effectiveness of JobSwift's output relies heavily on the accuracy and completeness of the information provided by users. Inaccurate or incomplete data can lead to suboptimal results.

Learning Curve: Users unfamiliar with their career details or job market requirements may struggle to provide the necessary input, potentially limiting the platform's effectiveness.

2. Limitations of AI:

Contextual Understanding: While AI can generate high-quality content, it may lack the nuanced understanding of a human career coach or resume writer, potentially missing context-specific details or personalized touches.

Generic Output Risk: In some cases, AI-generated content may come across as too generic or formulaic, especially if not enough personalized data is provided.

3. Privacy and Data Security:

Data Sensitivity: Users need to input personal and potentially sensitive career information, which raises concerns about data privacy and security.

Trust in AI Systems: Users must trust that their data is being handled securely and ethically, which can be a barrier for some individuals.

4. Technical Barriers:

Internet Access and Digital Literacy: Users need reliable internet access and basic digital literacy to effectively use JobSwift, which can be a limitation for some demographics.

Platform Limitations: Any technical issues or limitations within the platform itself (e.g., bugs, downtime) can hinder user experience and satisfaction.

5. Market Adaptation:

Dynamic Job Market: The job market is dynamic, and AI models need to be continuously updated to reflect changing trends, job requirements, and industry standards. Failure to keep the AI model up-to-date can result in outdated or less effective guidance.

8. Conclusion

JobSwift represents a significant advancement in leveraging AI technology to streamline and enhance the job application process. By integrating Google's PaLM model with Streamlit's interactive interface, the platform offers users efficient, personalized tools to create professional resumes, craft tailored cover letters, and prepare for interviews. This adaptability makes it a valuable resource for a wide range of users, from recent graduates to career changers and professionals seeking advancement.

The primary advantages of JobSwift include time-saving automation, tailored outputs based on user inputs, and an accessible, user-friendly interface. These features collectively empower users to navigate the job market with increased confidence and effectiveness. The advanced AI capabilities ensure that the materials generated are aligned with current job market trends, providing a competitive edge to users.

However, the platform does have some limitations. The effectiveness of JobSwift is dependent on the accuracy of user input and the AI's ability to understand context-specific nuances. Additionally, concerns around data privacy and security must be addressed to ensure user trust. Technical barriers, such as the need for reliable internet access and digital literacy, may also limit accessibility for some users.

In conclusion, JobSwift offers a powerful solution for optimizing job applications and career advancement, but it must continuously evolve to address its limitations and the dynamic nature of the job market. By doing so, it can remain a valuable tool for individuals at various stages of their career journey, providing personalized support and enhancing their chances of success.

9. Future Scope

The future scope of JobSwift is expansive and multifaceted, with numerous opportunities for growth and enhancement. As artificial intelligence continues to evolve, JobSwift can integrate even more advanced AI capabilities to improve the platform's contextual understanding and provide nuanced, personalized advice. This would result in application materials that are even more tailored to individual user profiles and job market requirements. Enhancements in natural language processing can further refine the coherence, professionalism, and relevance of generated content, ensuring that users have a competitive edge in their job applications.

One significant area of expansion is the integration with major job portals and professional networking sites such as LinkedIn, Indeed, and Glassdoor. This integration would allow users to seamlessly apply to jobs directly through JobSwift, streamlining the application process and reducing the time and effort required to submit applications. Real-time job recommendations based on user profiles, skills, and preferences can be provided, making the job search more efficient and targeted.

Expanding JobSwift's support for multiple languages and international job markets is another crucial development. By catering to a global audience, JobSwift can address the diverse career needs of users worldwide, offering localized advice and application materials that align with different cultural and industry standards. This would make JobSwift an invaluable tool for job seekers in various regions, enhancing its global reach and impact.

Moreover, incorporating advanced features such as AI-driven interview simulations can provide users with realistic practice scenarios, helping them prepare more effectively for actual interviews. Personalized career coaching, facilitated by AI, can offer tailored advice on career progression, skill development, and professional growth, ensuring that users receive comprehensive support throughout their job search journey.

Continuous updates to JobSwift's algorithms and databases will be essential to keep pace with the dynamic nature of the job market. This includes staying current with industry trends, emerging job roles, and evolving employer expectations. By doing so, JobSwift can provide users with the most relevant and up-to-date guidance, further enhancing their chances of success.

Additionally, integrating feedback mechanisms where users can share their experiences and outcomes can help refine and improve the platform. By analyzing user feedback and success rates, JobSwift can identify areas for improvement and make data-driven enhancements to its services.

In conclusion, the future of JobSwift is bright, with vast potential for growth and innovation. By leveraging advanced AI technologies, integrating with job portals, expanding international support, and continuously updating its offerings, JobSwift can become an indispensable tool for job seekers worldwide, empowering them to achieve their career aspirations with confidence and efficiency.

10.Appendix

Source code

```
import streamlit as st

import google.generativeai as palm

from PIL import Image


# Configure the PaLM API

palm.configure(api_key="Enter your Key here")

model_name = "models/text-bison-001"


def generate_resume(name, experience, skills, projects, education, awards, linkedin=None, github=None):

    prompt = f"My name is {name}. I have {experience} years of experience. I have the following skills: {skills}."

    prompt += "\n\nCareer Objective:\nProvide a brief career objective based on the inputs.\n\n"

    prompt += "Projects:\nProvide detailed descriptions of the following projects:\n"

    for project in projects:

        prompt += f"- {project}\n"

    prompt += f"\nEducation:\n{education}\n\nAwards and Recognition:\n{awards}"

    if linkedin or github:

        prompt += "\n\nLinks:\n"

        if linkedin:

            prompt += f"LinkedIn: {linkedin}\n"

        if github:

            prompt += f"GitHub: {github}\n"

response = palm.generate_text(model=model_name, prompt=prompt, temperature=0)

return response.result
```

```

def generate_cover_letter(company_name, job_title):
    prompt = f"I am interested in the {job_title} position at {company_name}." 
    response = palm.generate_text(model=model_name, prompt=prompt,temperature=0)
    return response.result

def generate_interview_questions.skills):
    prompt = f"Generate interview questions based on my {skills}?" 
    response = palm.generate_text(model=model_name, prompt=prompt,temperature=0)
    return response.result

def add_logo(logo_path, width, height):
    logo = Image.open(logo_path)
    modified_logo = logo.resize((width, height))
    return modified_logo

def main():
    st.sidebar.header("*Start Your Journey*")

    im = Image.open('logo/job.jpg')
    resize = im.resize((200, 200))
    st.sidebar.image(resize)

    st.sidebar.markdown("Whether you're a recent graduate, a career changer, or a professional seeking advancement, JobSwift is here to support your career aspirations. Let's get started!")

    option = st.sidebar.selectbox("Select Option", ["Home", "Generate Resume", "Generate Cover Letter", "Generate Interview Questions"])

    content_placeholder = st.empty()

    if option == "Home":
        with content_placeholder.container():
            st.title("Jobswift: Accelerating Careers With AI-Powered Applications")
            st.markdown("""
# Welcome to JobSwift!
""")

    elif option == "Generate Resume":

```

```
with content_placeholder.container():
    st.subheader("Generate Resume")
    name = st.text_input("Enter Your Name")
    experience = st.number_input("Enter Your Experience in Years")
    skills = st.text_area("Enter Your Skills")
    projects = st.text_area("Enter Your Projects")
    education = st.text_area("Enter Your Education")
    awards = st.text_area("Enter Your Awards and Recognition")
    linkedin=st.text_input("Enter LinkedIn profile")
    github=st.text_input("Enter Github profile")
    if st.button("Generate Resume"):
        if name and experience and skills and projects and education and awards:
            st.write(generate_resume(name, experience, skills, projects, education, awards,linkedin,github))
        else:
            st.error("Please fill all the fields")

    elif option == "Generate Cover Letter":
        with content_placeholder.container():
            st.subheader("Generate Cover Letter")
            company_name = st.text_input("Enter Company Name")
            job_title = st.text_input("Enter Job Title")
            if st.button("Generate Cover Letter"):
                if company_name and job_title:
                    st.write(generate_cover_letter(company_name, job_title))
                else:
                    st.error("Please fill all the fields")

    elif option == "Generate Interview Questions":
        with content_placeholder.container():
            st.subheader("Generate Interview Questions")
            skills = st.text_area("Enter your skills")
            if st.button("Generate Interview Questions"):
                if skills:
```

```
st.write(generate_interview_questions.skills))

else:
    st.error("Please fill all the fields")

main()
```

Demo link

Git Links

- <https://github.com/nethra2512/JobSwift-Accelerating-Careers-with-AI-Powered-Applications>
- <https://github.com/nehadakshin/Jobswift-Accelerating-Careers-With-Ai-Powered-Applications>
- <https://github.com/SopithaManiyan/JobSwift-Accelerating-Careers-with-AI-Powered-Applications>
- <https://github.com/Vibeyy/JobSwift-Accelerating-Careers-with-AI-Powered-Applications>