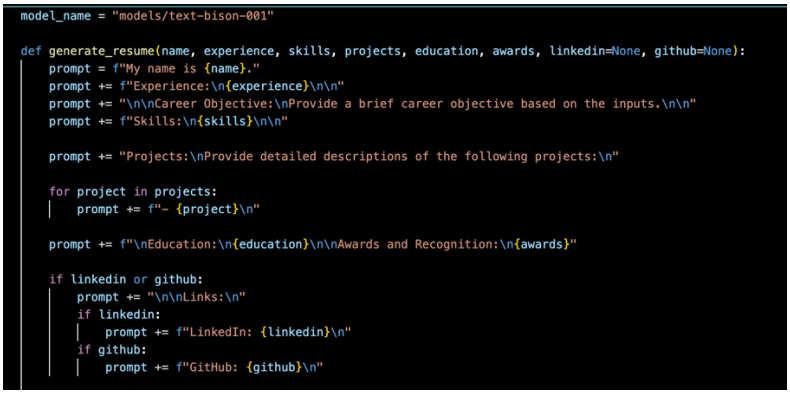
Model Optimization and Tuning Phase Template

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.

Hyperparameter Tuning Documentation (8 Marks):

Model	Tuned Hyperparameters
PaLm text-bison-001	**Hyperparam1: Prompt Design** • **Description**: The prompts were carefully designed to guide the model in generating more accurate and relevant responses. • **Screenshot**: For Resume  For Cover letter

```
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"Experience:\n{experience}\n\n"
    prompt += "\n\nCareer Objective:\nProvide a brief career objective based on the inputs.\n\n"
    prompt += f"Skills:\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}"

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

```
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
```

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

	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.