Model Optimization and Tuning Phase Report

Date	17 July 2024
Team ID	
Project Title	CodeXchange – An AI Powered Code Translator Tool using Palm's chat-bison-001
Maximum Marks	10 Marks

Model Optimization and Tuning Phase

The Model Optimization and Tuning Phase involves refining machine learning 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 :

Model	Tuned Hyperparameters
Transformer	```# Defining Model of use
model_name= "models/chat-bison-001"

# Function to translate code
def translate_code(code_snippet, target_language):
    prompt = f"Translate the following code to {target_language}:\n\n{code_snippet}"
    response = palm.chat(
        model = model_name,
        messages = [prompt]
)
    return response.candidates[0]["content"]``` |
| BERT-based Model | ```# Defining Model of use
model_name= "models/chat-bison-001"``` |

| LSTM | ```python
# Function to translate code
def translate_code(code_snippet, target_language):
    prompt = f"Translate the following code to {target_language}:\n\n{code_snippet}"
    response = palm.chat(
        model = model_name,
        messages = [prompt]
    )
    return response.candidates[0]["content"]
``` |
|------|------|
| CNN | ```python
# Function to explain code
def explain_code(code_snippet):
    prompt = f"Explain the following code:\n\n{code_snippet}"
    response = palm.chat(
        model = model_name,
        messages = [prompt]
    )
    return response.candidates[0]["content"]
``` |