Model Development Phase

Date	08 February 2026
Team ID	LTVIP2026TMIDS84978
Project Title	Advancing Nutrition Science through GeminiAI – NutriAssist AI
Maximum Marks	10 Marks

Initial Model Training Code, Model Validation and Evaluation Report

In the **NutriAssist AI** project, no custom model training is performed. Instead, a pre-trained Gemini AI model is integrated to generate personalized nutrition plans and health guidance.

Initial Model Training Code:

Model Selection and Initialization

The **Gemini Flash Lite (models/gemini-flash-latest)** model is selected because:

- It is lightweight and optimized for fast inference
- Suitable for real-time personalized nutrition generation
- Efficient in handling structured health prompts
- Cost-effective for scalable deployment

```
st.markdown("<h1 style='text-align: center;'>🥗 NutriAssist AI</h1>", unsafe_allow_html=True)
st.markdown("<p style='text-align: center; color: gray;'>Smart Nutrition Powered by Gemini 2.5 Flash</p>", unsaf
st.markdown("---")

# Load API key
load_dotenv()
genai.configure(api_key=os.getenv("GOOGLE_API_KEY"))

# Gemini Model (Vision + Text Supported)
model = genai.GenerativeModel("models/gemini-2.5-flash")
```

Model Validation and Evaluation Report:

Model	Summary	Training and Validation Performance Metrics
Gemini Flash Lite	Pre-trained generative language model optimized for fast text generation	Nutritional relevance, medical appropriateness, personalization accuracy, adherence to calorie targets, coherence, clarity, response time