

2201641540126_Vinay Yadav - Visual Product Matcher – Assignment - 4

Subject: Technical Assessment Project Submission - Software Engineering Position

Project: Visual Product Matcher

Build a full-stack AI-powered product search engine that allows users to upload an image or paste an image URL and instantly find visually similar products using OpenAI's CLIP model.

Required Features

- Image Upload: Support both file upload and image URL input : Yes
- Search Interface: Users should be able to: Yes
 - View the uploaded image : Yes
 - See a list of similar products : Yes
 - Filter results (e.g., by similarity score) : Yes
- Product Database: Yes
 - Minimum 50 products with images : Yes
 - Each product should have basic metadata (name, category, etc.) : Yes
- Hosting: Live deployment on AWS EC2(Free Tier) (Frontend + Backend)
- Mobile responsive design : Yes

Tech Stack & Architecture

1. **Frontend (React + Vite):** Provides a modern, responsive UI for image uploads and search results.
2. **Backend (Node.js + Express + Python CLIP):** Handles API requests, runs the CLIP model, and computes similarity.
3. **AI/ML (OpenAI CLIP + PyTorch):** Encodes query and product images for similarity matching.
4. **Data Storage: JSON** files for product catalog and embeddings index.
Deployment: Hosted on **AWS EC2**(Free Tier) serving frontend and Node.js+Python backend.

Deliverables

1. Working application URL (Frontend & Backend hosted on AWS EC2):

Live Project Link: <http://13.53.123.138:3000>

2. GitHub repository with source code and README

Github Repository:

<https://github.com/Vinay8git/Visual-Product-Matcher-App>

3. Project documentation and write-up of approach

Google Drive:

<https://drive.google.com/drive/folders/15e6rzS0eq6jURzAfth9ZfLYHlxbp1EAr?usp=sharing>

Evaluation Criteria

- Problem-solving approach
- Code quality
- Working functionality
- Documentation

Best regards,

Vinay Yadav

2201641540126

B.Tech – CS-DS-IV-B

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