

PREETHI B [212221220040]

EXP 2. Comparative Analysis of Navie Prompting Versus Basic prompting across various test scenario

AIM:

To test how ChatGPT responds to naïve prompts (broad or unstructured) versus basic prompts (clearer and more refined) across multiple scenarios, analyzing the quality, accuracy, and depth of the generated responses.

1.Zero shot Prompting:

Give me some idea about the smart vision quality control system for ecommerce?

ChatGPT said:

A Smart Vision Quality Control System for e-commerce can revolutionize how product quality is inspected and maintained in warehouses and fulfillment centers. Here's an overview of how this system might function and some ideas for its implementation:

1. Automated Defect Detection

- Use **AI-powered cameras** to inspect products for defects, scratches, misalignments, color discrepancies, or deformities. Machine learning algorithms can be trained to identify product defects in real-time, reducing the need for manual inspection.
- **Use Case:** When products like clothing, electronics, or toys come off the production line or are returned, cameras scan the items to detect any damage. The system flags defective items for further review.

2. Barcode and Label Verification

- Integrate **optical character recognition (OCR)** and barcode scanning to ensure that product labels and barcodes are correct and legible.
- **Use Case:** Before products are packed and shipped, the vision system can scan product labels to confirm that the right item is being shipped with accurate barcoding information, preventing shipping errors.

3. Packaging and Presentation Monitoring

- Deploy smart cameras to ensure that the packaging is sealed properly, free from tears, and meets the company's presentation standards (such as proper alignment of logos or placement of labels).
- **Use Case:** In cases where packaging quality impacts the customer experience (luxury goods or fragile items), the system could check for proper sealing and adherence to packaging guidelines.

2. Interview pattern:

Ask me a question regarding smart vision technology?

Here are various questions related to Smart Vision Technology that cover different aspects, in Times New Roman font:

- Explain the working of a Convolutional Neural Network (CNN) and its applications in smart vision technology.
- How does the YOLO (You Only Look Once) algorithm work, and why is it preferred for real-time object detection in smart vision systems?
- What techniques would you use for edge detection in an image, and how would it help in object segmentation for a smart vision application?
- How can image preprocessing improve the performance of a smart vision system? Can you describe a few techniques you would use?
- How do you handle imbalanced datasets in training models for defect detection in manufacturing processes using smart vision?
- Can you explain the difference between supervised and unsupervised learning and how they can be applied in a smart vision quality control system?
- What are the challenges of implementing a real-time object tracking system in a smart vision solution, and how would you optimize it for speed and accuracy?
- Discuss the role of GPU acceleration in smart vision applications. How would you leverage it for real-time video analysis?

3. Few-shot prompting:

The already existing system based on this smart vision quality control system in the titles of proposed methodology , outcome , result and existing system?

ChatGPT said:

Here's a comparison between a **Smart Vision Quality Control System** and a traditional or **existing quality control system** in the context of e-commerce, based on the categories of *Proposed Methodology*, *Outcome*, *Result*, and *Existing System*:

1. Proposed Methodology

- **Smart Vision Quality Control System:**
 - **AI-powered Cameras & Sensors:** Use AI-driven cameras, machine learning algorithms, and sensors to perform real-time defect detection, label verification, dimensional validation, and packaging monitoring.
 - **Automation & Robotics:** Integrates with robotic arms to automate the identification and removal of defective products. Uses predictive analytics for machinery maintenance.

2. Outcome

- **Smart Vision Quality Control System:**
 - **Enhanced Speed & Accuracy:** Real-time, automated inspection ensures products are evaluated faster and more accurately than by humans, with a much lower error rate.
 - **Scalability:** Easily scalable across multiple warehouses or fulfillment centers, allowing for consistent quality control across a global supply chain.
- **Existing System:**
 - **Labor-intensive:** Human workers are slower and prone to fatigue, leading to inconsistent inspection quality and potential oversight of defects.
 - **Limited Scalability:** Difficult to scale manual inspections, especially across large global operations with hundreds of thousands of products.

3. Result

- **Smart Vision Quality Control System:**
 - **Improved Customer Satisfaction:** With fewer defective products being shipped, customer satisfaction and retention rates increase. The system helps ensure products meet the quality standards expected by customers.
 - **Reduced Returns:** Early detection of defects before shipment leads to fewer returns, saving costs associated with reverse logistics.

Summary of Different Prompting Techniques:

Zero-Shot Prompting:	Interview Pattern Prompting:	Few-Shot Prompting:
Prompt: "Give me some idea about the Smart Vision Quality Control System for e-commerce."	Prompt: "Ask me a question about the required skills and ideology in the perspective of the reviewer."	Prompt: "Compare the already existing system based on this Smart Vision Quality Control System in the titles of proposed methodology, outcome, result, and existing system."
It gives high-level ideas on how the system works , including defect detection, barcode verification, packaging monitoring, etc.	Focuses on interview-style questions about how the user's existing skills, such as working with technologies like AI, ML, or quality control systems, align with the system's requirements.	Few-shot prompting provides a detailed and structured comparison between the existing and the proposed systems.
Zero-shot prompting provides a simple response, focusing on the overview and application of the system without requiring specific prior context.	It contains the form of asking a question like the process of interview and give the answer for the required skillset and tech stack of the given input of question format	Offers richer and more detailed responses by drawing on specific examples or data points, improving the accuracy and relevance of the response.

Zero-shot prompting provides an overview of the Smart Vision Quality Control System, focusing on general functionality like defect detection and packaging monitoring. It generates interview questions that assess basic knowledge, without requiring detailed context. Few-shot prompting, on the other hand, creates in-depth responses by incorporating specific examples or comparisons, offering tailored interview questions that explore the candidate's practical skills and experience. This leads to a richer understanding of how the candidate's expertise aligns with the technology, making it useful for more thorough evaluations.

OUTPUT:

