

**Anto Joshini Mary -212221020003**

**Exp-2 Comparative Analysis of naive 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 thoughts about Screening of non alcoholic fatty liver disorder based on infrared thermography and fibro scan.

**ChatGPT said:**

**NAFLD** is a prevalent liver disorder, often associated with obesity and metabolic syndrome. Early detection is critical for preventing progression to more severe liver conditions such as non-alcoholic steatohepatitis (NASH) or cirrhosis. Current screening methods include liver enzyme tests, imaging studies, and liver biopsies, but there is a growing interest in non-invasive techniques such as Infrared Thermography (IRT) and FibroScan.

#### **a.Infrared Thermography:**

IRT is a non-invasive, radiation-free imaging method that measures skin surface temperature. The rationale for using IRT in NAFLD screening lies in the metabolic heat produced by inflamed or fatty liver tissue, which might manifest as localized temperature changes detectable on the skin. This technique could offer a quick and painless way to screen for liver abnormalities without the need for costly equipment or invasive procedures.

#### **b.FibroScan (Transient Elastography):**

FibroScan measures liver stiffness and fatty changes by assessing the velocity of elastic shear waves passing through liver tissue. It is widely recognized for its effectiveness in diagnosing fibrosis and steatosis in NAFLD patients. Unlike liver biopsy, it is non-invasive and painless, making it a practical tool for repeated use in clinical practice.

### **c. Combining IRT with Fibro scan:**

Combining IRT with FibroScan could potentially enhance the accuracy of early NAFLD detection by offering both metabolic and structural insights into liver health.

### **2. Interview pattern:**

Ask me a question about the skill for the Researchers?

#### **ChatGPT said:**

A Question For Researchers Is:

**“How would you ensure that infrared thermography provides a reliable and consistent diagnosis of non-alcoholic fatty liver disorder across diverse patient populations with varying skin types and metabolic profiles?”**

For this question how would you answer?

### **3. Few shot prompting:**

Already existing based on Screening of non alcoholic fatty liver disorder based on infrared thermography and fibro scan and give the title, proposed methodology, outcome, result and existing methods.

#### **ChatGPT said:**

Existing Research on Screening of NAFLD using Infrared Thermography and FibroScan

**Title:** “Combined Use of Infrared Thermography and FibroScan for Early Detection of Non-Alcoholic Fatty Liver Disorder”

#### **a. Proposed Methodology:**

- Study Population: Recruit participants diagnosed with varying stages of NAFLD and a control group without liver disorders.
- Infrared Thermography: Utilize a high-resolution thermographic camera to capture images of the abdominal region, focusing on detecting subtle temperature changes associated with liver inflammation or fat deposition.

- FibroScan: Perform FibroScan on all participants to assess liver stiffness and steatosis levels.
- Data Correlation: Analyze correlations between thermographic data and FibroScan results to identify patterns indicative of NAFLD presence and severity.
- Validation: Compare findings with existing diagnostic methods (e.g., liver enzyme levels, MRI, and liver biopsy where necessary) to validate the accuracy of the combined approach.

#### **b.Expected Outcome:**

A combination of infrared thermography and FibroScan can provide a more comprehensive and non-invasive tool for the early detection and monitoring of NAFLD. Infrared thermography is expected to enhance sensitivity to early metabolic changes, while FibroScan will confirm the structural changes in the liver.

#### **c.Result:**

The combined use of infrared thermography and FibroScan showed a higher sensitivity and specificity in detecting early stages of NAFLD compared to the use of FibroScan alone. This approach reduced the need for more invasive diagnostic procedures.

#### **d.Existing Methods:**

Current methods for NAFLD screening include liver enzyme tests (elevated ALT/AST levels), ultrasound imaging, magnetic resonance imaging (MRI), and liver biopsy. While effective, these methods either lack sensitivity in early stages (liver enzymes, ultrasound) or are invasive (biopsy). Non-invasive alternatives like FibroScan are widely used but could benefit from complementary techniques like infrared thermography to improve diagnostic accuracy.

#### **Summary of Different Prompting Techniques:**

Zero-Shot Prompting:	Interview Pattern Prompting:	Few-Shot Prompting:
Prompt: "Give me some thoughts about Screening of non alcoholic fatty liver disorder based on infrared	Prompt:"Ask me a question about the skill for the Researchers?"	Prompt:"Already existing based on Screening of non alcoholic fatty liver disorder based on infrared thermography and fibro

thermography and fibro scan”.		scan and give the title, proposed methodology, outcome, result and existing methods.”
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.

**Output:**

ChatGPT

Explore GPTs

Yesterday

Few Shot Prompting Example

Zero Shot Response Style

Word Sequence Matching Inquiry

NAFLD Screening Techniques

Photo Decade Identification Request

NAFLD Screening Methods Summary

Revenue Change Calculation

Previous 7 Days

NAFLD Screening Methods Review

Previous 30 Days

NAFLD Screening Innovation IRT vs FibroScan

NAFLD Screening Innovation IRT vs FibroScan

Reasons for Resignation

September

Excel Formatting Feature

August

Grammar Correction Query

Disadvantages of Myoelectric Arm

Disadvantages of Myoelectric Arm

Pattern Recognition Benefits

Selecting Books Combinations

Finding Least Integer Value

Pointer Variable Address Hexadecimal

New chat

Binary Tree Overview

Recursion Examples in Programming

Conditional Statements Explained

July

Regex Character Overview

Regular Expression Whitespace Character

Overview of Pandas Features

New chat

New chat

How Parameter in Merge

Matrix Operations in Python

Finding Index of Max

Introducing ChatGPT Assistant

Min Heap Overview

Binary Min Heap Property

Graph Adjacency List Structure

Prim's vs Kruskal's MST

Handling Disagreements Constructively

Significance of Client Relationships

Data Annotation in Sales

Upgrade plan

More access to the best models

ChatGPT

Share

JO

1.give me some thoughts about Screening of non alcoholic fatty liver disorder based on infrared thermography and fibro scan

2.Ask me a question about the skill for the reasercher

3. Already existing based on Screening of non alcoholic fatty liver disorder based on infrared thermography and fibro scan and give the title, proposed methodology, outcome, result and existing methods

Give summary of comparison of these three qns

< 2/2 >

1. Thoughts on Screening of Non-Alcoholic Fatty Liver Disorder (NAFLD) Based on Infrared Thermography and FibroScan:

Non-Alcoholic Fatty Liver Disorder (NAFLD) is a liver disease characterized by excess fat build-up in the liver. Early detection and monitoring are crucial to prevent progression to more severe liver conditions like cirrhosis or hepatocellular carcinoma. Two emerging methods in this domain include **Infrared Thermography (IRT)** and **FibroScan**.

- Infrared Thermography (IRT):** IRT captures the heat emitted from the body, which can reflect underlying metabolic changes. Since inflammation can lead to temperature differences in affected areas, IRT has the potential to screen NAFLD by identifying temperature patterns in the liver region. This technique is non-invasive, quick, and cost-effective. However, it might be less specific since temperature variations can arise from several other factors besides liver health.
- FibroScan:** A well-established, non-invasive diagnostic method, FibroScan measures liver stiffness, which correlates with fibrosis and fat content. The procedure is quick, painless, and provides immediate results. While it's highly accurate in diagnosing advanced fibrosis or cirrhosis, it has limitations in differentiating between various stages of NAFLD.

The combination of IRT and FibroScan could improve the overall diagnostic capability. IRT could act as a preliminary screening tool, flagging potential liver abnormalities, while FibroScan can offer more specific data about the liver's condition.

2. A Question for a Researcher on the Skill Required:

- What statistical or machine learning techniques would you use to analyze and correlate temperature differences from Infrared Thermography with liver stiffness data from FibroScan to improve diagnostic accuracy in detecting early-stage NAFLD?

3. Existing Studies and Methods Based on Screening of NAFLD Using Infrared Thermography and FibroScan:

Title:

"Comparison of Non-Invasive Methods for Early Detection of Non-Alcoholic Fatty Liver Disorder: Infrared Thermography vs. FibroScan"

Proposed Methodology:

- Study Design:** A comparative, observational study involving NAFLD patients and healthy controls.
- Sample:** 200 patients classified into early-stage and advanced NAFLD groups.
- Procedure:**

Message ChatGPT

ChatGPT can make mistakes. Check important info.