

Section 1: Summarization Prompt

- **Initial Prompt**

“Summarize the following article: Global warming”

- **Screenshot of Initial Output**

The screenshot shows a dark-themed text editor interface. At the top left, there is a blue diamond icon followed by the text "Show thinking ▾". Below this, the main content area contains the following text:

Global warming, also known as climate change, refers to the long-term shifts in temperatures and weather patterns primarily driven by human activities since the Industrial Revolution. These activities, particularly the burning of fossil fuels, release greenhouse gases like carbon dioxide and methane, which trap heat in the Earth's atmosphere.

Key aspects of global warming:

- **Causes:** The main cause is the emission of greenhouse gases from human activities across various sectors, including energy, industry, transportation, buildings, agriculture, and land use.
- **Effects:** The consequences are widespread and severe, including:
 - Intensified droughts and water scarcity.
 - Increased frequency of severe fires.
 - Rising sea levels and increased flooding.
 - Melting polar ice and glaciers.
 - More catastrophic storms.
 - Declining biodiversity.
 - Impacts on human health, food security, housing, safety, and work, disproportionately affecting vulnerable communities.
- **Solutions:** Addressing global warming requires a multi-faceted approach focused on:
 - **Cutting Emissions:** This involves a significant reduction in the use of fossil fuels and a transition to renewable energy sources like solar and wind power. The goal is to halve emissions by 2030 to limit warming to 1.5°C.
 - **Adaptation:** Implementing measures to adapt to the unavoidable impacts of climate change, such as developing early warning systems for disasters, is crucial, especially for vulnerable populations.

- **Financing:** Substantial financial investment from governments and businesses, including support from developed to developing countries, is essential to fund these mitigation and adaptation efforts.

For more detailed information, you can refer to the [United Nations article on Climate Change](#).

 Sources

      

- **Refined Prompt**

“Summarise the following article (global warming) in bullet points, focusing on the key arguments, evidence, and conclusion. Use clear, concise language appropriate for a high school student.”

- **Screenshot of Improved Output**



Show thinking ▾

Here's a summary of the global warming article, broken down for a high school student:

- **What is Global Warming?**

- It's the long-term heating of Earth's climate system, mainly since the 1800s.
- It's causing big changes in temperatures and weather patterns around the world.

- **Who's Causing It?**

- Humans are almost entirely responsible.
- The main culprit is burning fossil fuels (like coal, oil, and gas) for energy.
- This releases "greenhouse gases" (like carbon dioxide and methane) that trap heat, making the Earth warmer.

- **What's the Proof/Evidence?**

- The Earth's surface is now about 1.2°C warmer than in the late 1800s.
- We're seeing more intense droughts, water shortages, and severe wildfires.
- Sea levels are rising, leading to more floods.
- Polar ice is melting faster.
- Storms are becoming more powerful and destructive.
- Many plants and animals are losing their homes and dying out.

- **What are the Consequences?**

- It harms people's health, food supply, homes, safety, and jobs.
- Poorer communities are often hit the hardest.

- **What Can We Do (Solutions)?**

- **Cut Emissions:** We need to drastically reduce greenhouse gas pollution, especially from fossil fuels. This means switching to clean energy like solar and wind power very quickly.
- **Adapt:** We also need to prepare for the changes already happening, like setting up early warning systems for natural disasters.
- **Fund It:** Governments and businesses need to invest a lot of money to make these changes happen, especially helping developing countries.
- The goal is to stop the Earth from warming more than 1.5°C above pre-industrial levels to avoid the worst effects.

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- **Reflection**

The initial summarization prompt produced a generic, often vague summary. Refining the prompt to specify format, target audience, and focus areas yielded much clearer and more tailored results.

Insight: LLMs perform significantly better when the summarization task is scoped with structure, tone, and audience in mind.

Section 2: Rewriting Prompt

- **Initial Prompt**

“Rewrite this paragraph to make it sound better: Global warming, also known as climate change, refers to the long-term shifts in temperatures and weather patterns primarily driven by human activities since the Industrial Revolution. These activities, particularly the burning of fossil fuels, release greenhouse gases like carbon dioxide and methane, which trap heat in the Earth's atmosphere.”

- **Screenshot of Initial Output**

- ◆ Global warming, or **climate change**, describes the significant, long-term shifts in our planet's temperatures and weather. These changes have been mainly driven by human activities since the **Industrial Revolution**, especially burning **fossil fuels**. This process releases **greenhouse gases** like carbon dioxide and methane, which then trap heat in Earth's atmosphere.

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- **Refined Prompt**

“Rewrite the following paragraph to make it more persuasive and formal, targeting a business audience: Global warming, also known as climate change, refers to the long-term shifts in temperatures and weather patterns primarily driven by human activities since the Industrial Revolution. These activities, particularly the burning of fossil fuels, release greenhouse gases like carbon dioxide and methane, which trap heat in the Earth's atmosphere.”

- **Screenshot of Improved Output**

The Urgency of Climate Change for Business

Global warming, often referred to as **climate change**, represents a profound and enduring transformation in global temperatures and weather systems. This phenomenon, predominantly instigated by human endeavors since the **Industrial Revolution**, warrants immediate attention. Specifically, the combustion of **fossil fuels** releases substantial quantities of **greenhouse gases**, such as carbon dioxide and methane, which subsequently accumulate in the Earth's atmosphere, leading to an undeniable and detrimental warming effect. Addressing this critical environmental challenge is not merely an ecological imperative but a strategic business necessity, demanding proactive engagement and innovative solutions.

- **Reflection**

Rewriting without specifying purpose or tone results in changes that may not align with the user's intent. Adding direction led to more stylistically appropriate rewrites.

Insight: Rewriting prompts benefit from context and constraints just telling the model to “make it better” is too ambiguous.

Section 3: Code Generation Prompt

- **Initial Prompt**

“Write Python code to sort a list of numbers.”

- **Screenshot of Initial Output**

Show thinking ▾

Here's the Python code to sort a list of numbers.

Python List Sorter
Jul 20, 9:25 PM

Try again without Canvas

This code defines a function `sort_numbers` that uses Python's built-in `sorted()` function to return a new sorted list without modifying the original. I've also included example usage to demonstrate how it works.

```
1 def sort_numbers(numbers):
2     """
3         Sorts a list of numbers in ascending order.
4
5     Args:
6         numbers: A list of integers or floats.
7
8     Returns:
9         A new list containing the sorted numbers.
10    """
11    return sorted(numbers)
12
13 # Example usage:
14 my_list = [34, 12, 56, 7, 89, 23, 1]
15 sorted_list = sort_numbers(my_list)
16
17 print(f"Original list: {my_list}")
18 print(f"Sorted list: {sorted_list}")
19
20 # Another example with negative numbers and floats
```

- **Refined Prompt**

“Write a Python function that takes a list of integers and returns the list sorted in ascending order using the merge sort algorithm. Include comments explaining each step.”

- **Screenshot of Improved Output**

Show thinking ▾

I've created a Python function `merge_sort` that implements the merge sort algorithm to sort a list of integers in ascending order.

Python Merge Sort
Algorithm
Jul 20, 9:26 PM

The code includes:

- The `merge_sort` function, which recursively divides the list and then merges the sorted sub-lists.

```
1 def merge_sort(arr):
2     """
3         Sorts a list of integers in ascending order using the Merge Sort algorithm.
4
5     Args:
6         arr: A list of integers to be sorted.
7
8     Returns:
9         A new list containing the sorted integers.
10    """
11    # Base case: If the list has 0 or 1 element, it is already sorted.
12    if len(arr) <= 1:
13        return arr
14
15    # Find the middle point of the list to divide it into two halves.
16    mid = len(arr) // 2
17    left_half = arr[:mid] # First half of the list
18    right_half = arr[mid:] # Second half of the list
19
20    # Recursively sort the two halves.
```

The code includes:

- The `merge_sort` function, which recursively divides the list and then merges the sorted sub-lists.
- A helper `merge` function, which takes two sorted lists and combines them into one.
- Detailed comments explaining each step of the algorithm.
- Several examples to demonstrate its usage with different types of lists.

↳ ↻ ⌂ :

```
1 def merge_sort(arr):
2     # Recursively sort the two halves.
3     # The merge_sort function will continue to divide until the base case is met.
4     left_half = merge_sort(left_half)
5     right_half = merge_sort(right_half)
6
7     # Merge the sorted halves back together.
8     # This is where the actual sorting and combining happens.
9     return merge(left_half, right_half)
10
11 def merge(left, right):
12     """
13         Merges two sorted lists into a single sorted list.
14
15     Args:
16         left: The first sorted list.
17         right: The second sorted list.
18
19     Returns:
20     """
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
```

↳ Python Merge Sort...

Export to Colab

```
29 def merge(left, right):
30     """
31         Returns:
32             A new list containing all elements from both input lists, sorted.
33     """
34
35     merged_list = []
36     left_index = 0
37     right_index = 0
38
39     # Compare elements from both lists and append the smaller one to merged_list.
40     # Continue until one of the lists is exhausted.
41     while left_index < len(left) and right_index < len(right):
42         if left[left_index] < right[right_index]:
43             merged_list.append(left[left_index])
44             left_index += 1
45         else:
46             merged_list.append(right[right_index])
47             right_index += 1
48
49     # If there are any remaining elements in the left list, append them.
50     # This happens if one list was longer than the other.
51     while left_index < len(left):
52         merged_list.append(left[left_index])
53
54
55
56
```

The screenshot shows a Jupyter Notebook cell titled "Python Merge Sort...". The code implements a merge sort algorithm. It defines a function `merge(left, right)` that merges two sorted lists into one. The main part of the code demonstrates the usage of this function on three different lists: a non-empty list [38, 27, 43, 3, 9, 82, 10], another list [5, 2, 9, 1, 7, 6, 3, 8, 4], and an empty list [].

```
29 def merge(left, right):
30     # If there are any remaining elements in the right list, append them.
31     while right_index < len(right):
32         merged_list.append(right[right_index])
33         right_index += 1
34
35     return merged_list
36
37
38 # Example Usage:
39 my_list = [38, 27, 43, 3, 9, 82, 10]
40 sorted_list = merge_sort(my_list)
41 print(f"Original list: {my_list}")
42 print(f"Sorted list using Merge Sort: {sorted_list}")
43
44
45 another_list = [5, 2, 9, 1, 7, 6, 3, 8, 4]
46 sorted_another_list = merge_sort(another_list)
47 print(f"Original list: {another_list}")
48 print(f"Sorted list using Merge Sort: {sorted_another_list}")
49
50
51 empty_list = []
52 sorted_empty_list = merge_sort(empty_list)
53 print(f"Original list: {empty_list}")
```

- **Reflection**

Asking for code in a vague way leads to simple, sometimes overly generic solutions. By specifying the algorithm, language, and expectations, the model produced cleaner, more educational code.

Insight: Precision and completeness in prompts especially with technical tasks results in code that is easier to understand, customize, and trust.

Section 4: Role-based Prompt

- **Initial Prompt**

“Act like a Data Scientist and explain AI.”

- **Screenshot of Initial Output**



Alright, let's talk AI. As a Data Scientist, when I think about Artificial Intelligence, I don't just see a buzzword or a futuristic concept. I see a powerful suite of tools and methodologies that fundamentally change how we extract insights, automate decisions, and interact with data.

At its core, **Artificial Intelligence is about enabling machines to perform tasks that typically require human intelligence.**

Now, that's a broad statement, so let's break it down from a data scientist's perspective:

1. The "Learning" Aspect: Machine Learning (ML) is the Engine

When we talk about most practical AI applications today, we're almost certainly talking about Machine Learning. ML is the subset of AI that gives systems the ability to **learn from data without being explicitly programmed.**

- **How it works (for us):** As data scientists, we feed algorithms vast amounts of data. The algorithms then identify patterns, relationships, and structures within that data.
- **The Output:** This "learning" results in a "model" – essentially a sophisticated mathematical function that can then make predictions, classifications, or decisions on new, unseen data.

- **Examples we work with daily:**

- **Supervised Learning:** Predicting house prices (regression), classifying emails as spam or not spam (classification) – here, we have labeled data (e.g., house prices with features, emails with "spam" or "not spam" labels).
- **Unsupervised Learning:** Grouping customers into segments (clustering), dimensionality reduction for visualizing complex data – here, we don't have explicit labels, the algorithm finds the inherent structure.
- **Reinforcement Learning:** Training an agent to play a game or control a robot – learning through trial and error, optimizing actions based on rewards.

2. The "Intelligence" Part: Beyond Simple Rules

What makes AI "intelligent" isn't just following a set of predefined **if-then** rules. It's the ability to:

- **Adapt and Improve:** As more data becomes available, or as the environment changes, AI models can be retrained and refined, leading to better performance over time.

- **Generalize:** A well-trained AI model can apply its learned knowledge to new situations it hasn't directly encountered before.
- **Perceive and Understand:** Through areas like Computer Vision (e.g., recognizing objects in images) and Natural Language Processing (e.g., understanding human language), AI allows machines to interpret complex sensory information.
- **Reason and Decide:** While still an active research area, AI is moving towards systems that can draw inferences, solve problems, and make complex decisions in a more human-like way.

3. The Data Scientist's Role in Building AI:

This is where the rubber meets the road. Our work involves:

- **Data Acquisition and Preparation:** AI models are only as good as the data they're trained on. This means meticulous cleaning, transforming, and feature engineering.
- **Model Selection and Training:** Choosing the right algorithms (from simple linear models to complex deep neural networks) and training them efficiently.

- **Evaluation and Validation:** Rigorously testing model performance, identifying biases, and ensuring generalizability.
- **Deployment and Monitoring:** Putting models into production and continuously monitoring their performance in real-world scenarios.
- **Interpretation and Explainability (XAI):** A crucial and growing area – understanding *why* an AI model made a particular decision, especially in critical applications like healthcare or finance.

4. The Cutting Edge: Deep Learning

Deep Learning, a subfield of Machine Learning, is what has fueled many of the recent breakthroughs in AI. It uses artificial neural networks with multiple layers ("deep" networks) to learn hierarchical representations of data.

- **Impact:** This has revolutionized fields like image recognition (think facial recognition on your phone), natural language understanding (ChatGPT is a prime example), and speech synthesis.
- **Our Challenge:** While powerful, deep learning models can be "black boxes," making

breakthroughs in AI. It uses artificial neural networks with multiple layers ("deep" networks) to learn hierarchical representations of data.

- **Impact:** This has revolutionized fields like image recognition (think facial recognition on your phone), natural language understanding (ChatGPT is a prime example), and speech synthesis.
- **Our Challenge:** While powerful, deep learning models can be "black boxes," making interpretation difficult – an active area of research for us.

In essence, as a data scientist, I view AI as the ultimate goal of leveraging data to create intelligent systems that can automate, predict, and ultimately augment human capabilities. It's about moving from descriptive analytics ("what happened?") to predictive analytics ("what will happen?") and prescriptive analytics ("what should we do?"), all powered by the continuous learning and adaptation that AI enables. It's an exciting field, constantly evolving, and at the heart of nearly every innovative data-driven solution today.



- **Refined Prompt**

"Act like a senior Data Scientist at a tech startup. Explain how machine learning can improve customer retention, using business language and real-world analogies suitable for a team of marketers."

- **Screenshot of Improved Output**

- ◆ Alright team, grab a coffee, let's talk about something incredibly powerful that can directly impact our bottom line: **Customer Retention**.

As a data scientist here at the startup, my job is to extract actionable insights from data. And right now, the biggest opportunity I see for us to supercharge our retention efforts lies in **Machine Learning (ML)**.

Think of it this way:

The "Leaky Bucket" Problem

Imagine our customer base as a bucket, and new customers are the water we're pouring in. If we have holes in that bucket, water is constantly leaking out – these are our churning customers. We can keep pouring in more water (acquiring new customers), but if the holes are still there, we're just working harder for the same amount of water.

Machine Learning helps us patch those holes, making our bucket much more efficient at holding onto the valuable water – our customers.

How ML Does This: From Reactive to Proactive

Traditionally, we've been somewhat reactive. A customer churns, and *then* we might try to understand why. ML flips this on its head.

ML allows us to predict who is likely to churn, when they're likely to churn, and even why they might churn – before it actually happens. 

This gives you, our marketing gurus, a superpower: the ability to intervene proactively and prevent that churn.

Real-World Analogies: Your Daily Life, Powered by ML

Let's make this concrete with examples you encounter every day:

1. The "Netflix Recommendation" for Churn:

- You know how Netflix suggests movies you'll love? It's not magic; it's ML. It looks at your viewing history, what similar users watched, and predicts what you'll enjoy next. 
- **Applied to Retention:** We can build an ML model that looks at a customer's usage

1. The "Netflix Recommendation" for Churn:

- You know how Netflix suggests movies you'll love? It's not magic; it's ML. It looks at your viewing history, what similar users watched, and predicts what you'll enjoy next. 
- **Applied to Retention:** We can build an ML model that looks at a customer's usage patterns, their engagement with our features, their past support interactions, and predicts their "churn score." Just like Netflix says, "You'll probably like this movie," our model can say, "This customer is showing signs they might leave." 
- **Your Action:** Instead of a generic email, you get a heads-up that "Customer X" has reduced their login frequency, stopped using Feature Y, and their churn score just spiked. Now you can craft a targeted campaign – maybe an email highlighting the value of Feature Y, a personalized offer, or even a direct reach-out from support.

2. The "Smart Home Security System":

- Your smart home system doesn't wait for your house to be broken into to warn you. It monitors activity, learns normal patterns, and alerts you to *anomalies* – a window opening at an unusual time, an unexpected motion.

... Applied to Retention: Our ML system acts like that security system for our customer

- **Applied to Retention:** Our ML system acts like that security system for our customer base. It continuously monitors customer behavior. If a customer's usage drops suddenly, or they stop engaging with key features, or their support tickets suddenly escalate – these are "anomalies" that trigger an alert.
- **Your Action:** Instead of discovering a customer is gone weeks later, you get an early warning signal. This empowers you to deploy re-engagement campaigns, offer proactive support, or send personalized tips that might re-ignite their interest.

3. The "Personal Trainer" Analogy:

- A good personal trainer doesn't give everyone the same workout. They analyze your current fitness, your goals, your progress, and then tailor a plan specifically for you.
- **Applied to Retention:** ML allows us to do this at scale for our customers. Instead of blasting every customer with the same "we miss you" email, ML helps us segment our users into highly specific groups based on their behavior and churn risk. ☀️ ☀️
- **Your Action:** You can then develop hyper-targeted retention strategies. For high-value customers at high risk, maybe it's a direct phone call. For others, it might be an in-app message, a tutorial on an underutilized feature, or an exclusive early access offer. It

The Business Value: Why This Matters to You

- **Increased Lifetime Value (LTV):** Keeping customers longer means they spend more with us over time. Simple math, massive impact. ☀️
- **Reduced Acquisition Costs:** It's significantly cheaper to retain an existing customer than to acquire a new one. ML makes your marketing spend more efficient. ☀️
- **Better Product Feedback:** By understanding *why* customers are leaving, we get invaluable insights to improve our product and services, closing the loop. ☀️
- **Stronger Brand Loyalty:** Proactive engagement and personalized care build trust and loyalty, turning customers into advocates. ☀️

My team and I are ready to start building these ML models. We'll work closely with you to identify the key data points, define what "churn" means for us, and then give you the tools and insights to act decisively.

This isn't just about fancy algorithms; it's about giving *you* the intelligence to keep our customers happy, engaged, and part of our success story. Let's make this bucket leak-proof!

- **Reflection**

Generic role prompts produced informative but inconsistent responses. Refining the prompt to define a clear persona, audience, and context made the responses more aligned and persuasive.

Insight: The more detailed the character and audience context, the more natural and human-like the output becomes.

Section 5: Structured Content Prompt

- **Initial Prompt**

“Make a table comparing iPhone and Samsung phones.”

- **Screenshot of Initial Output**



Feature	iPhone (Apple)	Samsung (Galaxy)
Operating System	iOS (proprietary Apple ecosystem)	Android (Google's open-source OS with Samsung's One UI skin)
User Interface	Known for simplicity, intuitiveness, and tight integration within Apple's ecosystem.	Highly customizable, offering more personalization options for widgets, themes, and app launchers.
Processor	Custom-designed Apple Bionic chips (e.g., A18 Bionic), optimized for iOS.	Primarily uses Qualcomm Snapdragon (e.g., Snapdragon 8 Gen 3) or Samsung Exynos chips (region-dependent).
Display	Super Retina XDR OLED, known for	Dynamic AMOLED 2X, often featuring

Camera System	Excellent computational photography, consistent image quality, strong video capabilities (e.g., Cinematic Mode, ProRAW). Tend to focus on natural color reproduction.	Highly versatile camera setups, often with higher megapixel counts (e.g., 200MP main sensors), advanced zoom capabilities (e.g., 100x Space Zoom), and a wider range of shooting modes.
Design & Build	Premium materials (glass, aluminum, titanium on Pro models), often with a distinctive notch or Dynamic Island.	Diverse designs, including traditional glass and metal slabs, as well as innovative foldables (Fold and Flip series). Often feature hole-punch front cameras.
Battery Life	Generally good, with optimization between hardware and software. Fast and MagSafe wireless charging.	Often boasts larger battery capacities, sometimes resulting in longer overall usage. Faster wired and wireless charging.
Customization	More limited customization options.	Extensive customization options for interface, widgets, and app behavior.
App Ecosystem	Apple App Store, known for strict app review process, high-quality apps, and strong security.	Google Play Store, offers a vast number of apps, more flexibility in app sideloading.
Peripheral Ecosystem	Seamless integration with Apple products (Apple Watch, AirPods, Macs, iPads), strong continuity features.	Integration with Samsung's own ecosystem (Galaxy Watch, Galaxy Buds), and broad compatibility with other Android devices

Peripheral Ecosystem	Seamless integration with Apple products (Apple Watch, AirPods, Macs, iPads), strong continuity features.	Integration with Samsung's own ecosystem (Galaxy Watch, Galaxy Buds), and broad compatibility with other Android devices and accessories.
Security & Privacy	Strong emphasis on user privacy and data security, with features like Face ID.	Robust security features, including Knox security platform and ultrasonic fingerprint sensors.
Innovation	Focus on refining existing technologies and introducing new, integrated features within their ecosystem.	Known for pushing boundaries with hardware innovations like foldable screens, S Pen integration, and higher camera zoom.
Price Range	Tends to be at the higher end, especially for flagship models.	Offers a wider range of price points, from budget-friendly A-series to premium S-series and Z-series foldables.
Unique Features	Face ID, MagSafe, Dynamic Island, AirDrop, iMessage.	S Pen (on Ultra models), Samsung DeX (desktop experience), Wireless PowerShare, foldable phones.

Export to Sheets

Key Considerations When Choosing:

- **Operating System Preference:** Do you prefer the simplicity and tight ecosystem of iOS, or the flexibility and customization of Android?
- **Budget:** Samsung generally offers more options across different price points.
- **Camera Needs:** Both excel, but Samsung often offers more versatility with zoom and megapixel counts, while Apple is praised for consistent quality and video.
- **Ecosystem:** If you already own other Apple products, an iPhone might offer a more seamless experience. Similarly, Samsung users might find their current devices integrate well with a new Samsung phone.
- **Specific Features:** Are foldable phones or a stylus important to you? Samsung has unique offerings in these areas.

Ultimately, the "better" phone depends on individual preferences and priorities. Both brands offer high-quality devices with cutting-edge technology.



● Refined Prompt

"Create a markdown table comparing the iPhone 15 Pro and Samsung Galaxy S24 Ultra. Include specs like screen size, battery life, camera features, and price."

● Screenshot of Improved Output

- ◆ Here's a detailed comparison of the iPhone 15 Pro and the Samsung Galaxy S24 Ultra in a markdown table format. Please note that prices are approximate and can vary based on region, retailer, storage configuration, and ongoing offers.

iPhone 15 Pro vs. Samsung Galaxy S24 Ultra: Detailed Comparison

Feature	iPhone 15 Pro	Samsung Galaxy S24 Ultra
Release Date	September 2023	January 2024
Operating System	iOS 17 (upgradable)	Android 14 with One UI 6.1 (upgradable)
Processor	Apple A17 Pro (3nm)	Qualcomm Snapdragon 8 Gen 3 for Galaxy (4nm) (Global) / Samsung Exynos 2400 (4nm) (Some regions)
Screen Size	6.1 inches	6.8 inches
Display Type	Super Retina XDR OLED, ProMotion (1-120Hz adaptive refresh rate), Always-On Display, Dynamic Island	Dynamic AMOLED 2X, 1-120Hz adaptive refresh rate, QHD+ resolution, higher peak brightness

Resolution	2556 x 1179 pixels (460 ppi)	3120 x 1440 pixels (505 ppi)
Peak Brightness	2000 nits (outdoor peak)	2600 nits (peak brightness)
RAM	8GB	12GB
Storage Options	128GB, 256GB, 512GB, 1TB	256GB, 512GB, 1TB
Battery Capacity	3274 mAh (typical)	5000 mAh (typical)
Estimated Battery Life	Up to 23 hours video playback, 20 hours streamed video playback	Up to 30 hours video playback, Up to 95 hours audio playback
Wired Charging	Up to 50% in ~30 min (with 20W adapter)	45W Super Fast Charging (Up to 65% in ~30 min)
Wireless Charging	15W MagSafe, 7.5W Qi	15W Fast Wireless Charging 2.0, 4.5W Reverse Wireless Charging
Rear Camera System	Triple Camera System: - 48MP Main (f/1.78, 2nd-gen sensor-shift OIS) <small>10MP Ultra-Wide (f/2.2, 120° FoV)</small>	Quad Camera System: - 200MP Wide (f/1.7, OIS) - 12MP Ultra-Wide (f/2.2, 120° FoV) <small>10MP 3x Telephoto (f/2.4, OIS)</small>

Optical Zoom Range	6x optical zoom range (0.5x, 1x, 2x, 3x)	3x, 5x optical zoom; 2x, 10x optical quality zoom (enabled by Adaptive Pixel sensor)
Digital Zoom	Up to 15x	Up to 100x Space Zoom
Front Camera	12MP TrueDepth (f/1.9, Autofocus)	12MP (f/2.2, Dual Pixel AF)
Video Recording	Up to 4K 60fps (Dolby Vision HDR, ProRes), Cinematic Mode 4K HDR at 30fps, Action Mode 2.8K 60fps, Spatial Video	Up to 8K 30fps, 4K 120fps, Super Steady video, HDR10+, Slow Motion up to 960fps (1080p)
Durability	Ceramic Shield front, Titanium frame, IP68 water and dust resistance	Corning Gorilla Armor front, Titanium frame, IP68 water and dust resistance
Biometrics	Face ID (facial recognition)	Ultrasonic In-display Fingerprint Sensor, Face recognition
Unique Features	Dynamic Island, Action Button, USB-C 3, ProRAW, ProRes, Emergency SOS via Satellite, Crash Detection	Integrated S Pen, Galaxy AI features (Circle to Search, Live Translate, Generative Edit, etc.), DeX desktop experience, Wi-Fi 7
Starting Price (approx.)	₹1,34,900 (128GB) (India) / \$999 (US)	₹1,29,999 (256GB) (India) / \$1,299 (US)

Note on Battery Life: Battery life can vary significantly based on usage patterns, network conditions, and settings. The values provided are estimates based on typical use or manufacturer claims.

Key Differentiators:

- **Size and Form Factor:** The iPhone 15 Pro is significantly more compact, while the S24 Ultra offers a much larger display.
- **Camera System:** The S24 Ultra generally offers more versatile camera hardware with its dual telephoto lenses and 100x Space Zoom. The iPhone 15 Pro excels in consistent image processing, video quality, and dedicated modes like Cinematic Mode.

- **S Pen:** The S24 Ultra includes the integrated S Pen, offering unique productivity and creative capabilities.
- **Ecosystem:** The choice often comes down to personal preference for iOS and Apple's integrated ecosystem vs. Android and Samsung's One UI with more customization and broader device compatibility.
- **AI Features:** The S24 Ultra heavily promotes its Galaxy AI suite of features, offering advanced on-device AI capabilities for various tasks.

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● **Reflection**

Simple “compare this and that” prompts resulted in loose lists or paragraph-style answers. Requesting structured formats and specifying what fields to include generated organized, easy-to-scan outputs.

Insight: LLMs respond exceptionally well to structure-based prompts when you are clear about format and fields, making them great for technical or content-heavy applications.

Final Reflection

Engaging in this prompt-writing and refinement exercise offered valuable insight into how *precise language, context, and intent* shape the effectiveness of large language model (LLM) outputs. By experimenting with different prompt types and iteratively improving them, I gained a clearer understanding of the mechanics behind good prompt engineering and its impact on the clarity, usefulness, and relevance of AI-generated content.

AI Model Used: Google Gemini 2.5 Flash