**Foundations of AI for Decision Intelligence**

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## 1. **Introduction to ChatGPT and GPT Settings**

### 1.1 Overview of ChatGPT

Generative Pre-Trained Transformer

### 1.2 ChatGPT Settings and Customization

* Creating **Custom GPTs** with instructions, tone, and knowledge base.
* Using **memory** to let ChatGPT remember user preferences and goals.
* Voice Settings & Archive
* Exploring **GPTs**
  + DALL·E for image generation

## 2. Prompt Engineering with Real-World Use Cases

### 2.a. AI in Agriculture Use Cases

**Crop Disease Prediction**

Upload leaf or crop images.

**Prompt:** Identify the crop and the disease. Suggest some ways to prevent this disease without pesticides and with pesticides as well for Indian sub-continent conditions – Soil, Weather, Insects etc.

* Perplexity is better since image is uploaded for further analysis and based on real time data
* Export as PDF or Word, Desktop & Mobile app etc.

Further detailed analysis prompts in Perplexity:

1. Analyze the disease historical trend in Indian subcontinent and plot an appropriate chart for the disease development timeline based on the crop cultivation period in months using temporal progression model.
2. Plot a correlation Heatmap of Weather (Temp, Humidity, Rainfall) Vs this disease.

**Yield Estimation**

Upload satellite or field images.

**Prompt:**

Estimate the yield based on this sample image of rice paddy. The land covers 10 hectares of rice in India. Account for all expenses and calculate the profit amount in rupees based on the rice wholesale price.

**Weather-Based Recommendations - Real-time weather data integration.**

**Prompt:**

I would like to cultivate sugarcane in 10 acres on land in southern part of Indian sub-continent. Provide in-depth suggestions for cultivating (seasons and weather for better yield without diseases) the crop from plantation till selling to factories for ethanol production. List the factories available in TamilNadu and their average purchase price. Estimate profit based on FRP price and Market price separately.

### 2.b. AI in Healthcare Use Cases

**Predicting Patient Risk - Input:**

Upload blood or culture reports.

**Prompt:**

Predict the long-term risks and diseases the patient may incur based on the attached report.

**Summarizing Medical History**

Upload discharge summary.

**Prompt:**

Summarize the report in 2-3 sentences and identify red flags. Provide medication administration schedule in table format with medicine name Vs Morning, Afternoon & Evening with details of Before or after food. List upcoming appointment with place, date & time.

**Diagnostics using Scans**

Upload X-rays, CT/MRI scans.

**Prompt:**

Diagnose the condition using attached image and suggest me some senior doctors in Chennai who are best to consult for the cure.

## 3. AI for Research Support

### 3.a. Using Perplexity Pro for Research in Agriculture

Query generation for agriculture-specific research. Example: Soil degradation, climate impact, smart irrigation. Citation-based results with sources.

| **Use Case** | **Prompt Example** |
| --- | --- |
| Literature search | *Recent research on precision farming techniques in India with references.* |
| Technology comparison | *Compare AI-based vs satellite-based crop monitoring – with links to peer-reviewed papers.* |
| Research trends | *What are current trends in AI applications for agriculture in Southeast Asia?* |
| Data support | *Latest rainfall and soil moisture datasets for Indian states (2020–2024).* |

### 3.b. Other Research Tools

**Research Rabbit**

| **Use Case** | **Prompt/Action** |
| --- | --- |
| Finding a topic base | ***Remote sensing for crop yield prediction***  *→ track papers and co-authors.* |
| Building research clusters | *Map citations related to*  ***Drone-based fertilizer application***  *to find interconnected studies.* |
| Staying updated | *Create a collection for*  ***Agri-AI in pest prediction***  *and set alerts.* |

**Elicit**

| **Use Case** | **Prompt Example** |
| --- | --- |
| Supporting evidence | *What AI techniques are most effective for detecting crop diseases?* |
| Hypothesis testing | *Does machine learning improve yield estimation in wheat farming* |
| Contradictory research | *Evidence against using AI for irrigation planning in drylands.* |
| Paper filtering | *Upload your own question and filter papers by methodology or region (e.g., India).* |

**SciSpace AI**

Upload a paper and ask relevant questions from the paper.

**Jenni AI**

| **Use Case** | **Prompt Example** |
| --- | --- |
| Abstract drafting | *Write an abstract for a paper on AI for crop disease prediction in banana plantations.* |
| Paragraph expansion | *Expand this point*  ***Any sentence from the abstract generated*** |
| Academic tone | *Rewrite this summary in formal academic tone with passive voice.* |
| Structured research help | *Give 3 key points for a literature review on IoT in irrigation management.* |

## Conclusion

AI tools are becoming indispensable in decision-making. Agriculture, healthcare, and research are key impact areas. Choosing the right tool and prompt is crucial for actionable insights.