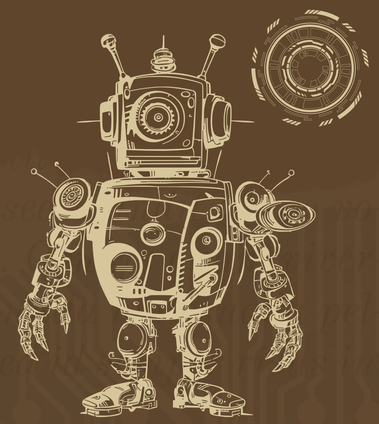
PROMPT TECHNIQUES CHEATSHEET

Explicit Instructions

Provide clear, detailed instructions to guide the model's response.



Overview: Provide clear and detailed guidelines to effectively direct the model's response.

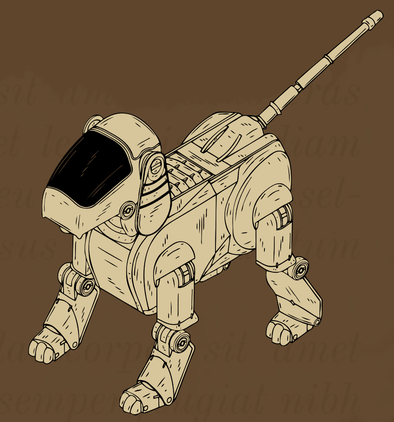
a. Stylization:
- Overview: Tailor the response's tone, style, or manner to suit a specific audience or purpose.
- Prompt:
  - "Explain this like a children's educational show."
- Prompt:
  - "Summarize for a software engineer in under 250 words."

b. Formatting:
- Overview: Specify how the response should be structured or presented to meet your needs.
- Examples:
  - Prompt: "Use bullet points."
  - Prompt: "Return the response as a JSON object."

c. Restrictions:
- Overview: Impose specific limitations or rules on the model's response.
- Examples:
  - Prompt: "Only use academic papers."
  - Prompt: "Never give sources older than 2020."

Zero-shot Learning and Few-shot Learning

Do you want to give an example or not?



Zero-Shot Learning

- Overview: Instruct the model without providing any prior examples, relying on its ability to generalize from the instructions alone.
- Prompt:
  - "Text: This was the best movie I've ever seen! The sentiment of the text is: "
- Explanation
  - The model uses its understanding of language and context to generate a response without needing specific examples.

Few-Shot Learning

- Overview: Provide a few examples of the desired output to guide the model towards more accurate and consistent responses.
- Prompt:
  - "You are a sentiment classifier. For each message, give the percentage of positive/neutral/negative."
- Explanation
  - The model uses provided examples to learn the expected output format and content, resulting in more precise and consistent answers.

Gencay I from medium

Role Prompting

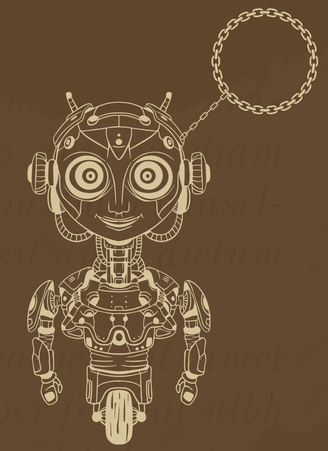
Act like a teacher!

Role Prompting

- Overview: Assign a specific role to the model to guide the type of response it generates, ensuring more consistent and relevant outputs.
- Prompt:
  - "Your role is a machine learning expert. Explain the pros and cons of using PyTorch."
- Explanation:
  - By assigning a role, the model tailors its response to the specified expertise, providing more relevant and detailed information based on the role.

Chain-of-Thought

Step 1, Step 3 and boom!



Chain-of-Thought Prompting

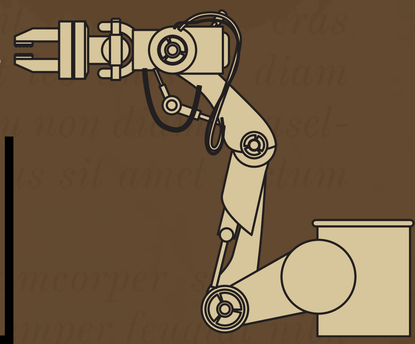
- Overview: Encourage the model to think through problems step by step to improve its ability to perform complex reasoning tasks.
- Example:
  - Prompt:
    - "Analyze the attached BTC-USD and ETH-USD datasets. Follow these steps:
      i. Data Exploration: Summarize key statistics, including mean, median, and standard deviation of prices. Identify missing values or anomalies.
      ii. Data Visualization: Create visualizations such as line plots and histograms to uncover patterns, trends, and relationships in the data.
      iii. Data Modeling: Apply relevant algorithms (e.g., linear regression, ARIMA) to predict future price movements or categorize data points.
  - Execute each step one by one, and present the results after completing each step. Ask for approval before proceeding to the next step."
  - Explanation
    - A structured and step-by-step analysis of the datasets, requesting approval before moving on to the next step.

Self-Consistency

Which one is the best?

- Overview: Which one is the best? You can guess, but you can not be sure before seeing the result. With this method, you force the model to choose the best one after creating a multiple response.
- Prompt:
  - "You are analyzing the BTC-USD and ETH-USD datasets to predict the closing prices for each day over the next week. Generate multiple daily predictions using different approaches or models (e.g., linear regression, moving averages, and ARIMA). After generating these predictions, identify the prediction that appears most frequently or is closest to the average prediction for each day, and present this as your final prediction."
- **Explanation:**
  - Multiple Predictions: The prompt asks the model to generate multiple predictions using different approaches or models, simulating different reasoning paths.
  - Consistency Selection: Instead of explicitly mentioning "self-consistency," the prompt guides the model to identify the most consistent prediction. This approach helps ensure the final prediction is robust and reliable by averaging or selecting the most frequent outcome.

Program-Aided Language Models



Let's python do the math!

- Overview: Use the model's ability to generate code to solve complex problems, particularly for tasks requiring calculations or logical operations.
- Prompt:
  - "Write Python code to calculate: [math problem]."
- Explanation
  - The model generates code that can solve complex problems, leveraging its ability to perform logical operations and calculations more accurately than relying on its internal reasoning alone.

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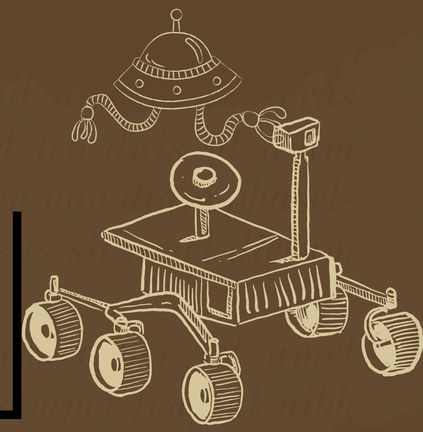
Limiting Extraneous Tokens

Limit yourself!

Overview: Minimize unnecessary tokens or verbose output to ensure the response is concise and to the point.

- Prompt:
  - "Give me the zip code for Menlo Park in JSON format with the field 'zip_code'."
- Explanation:
  - The prompt directs the model to output the specific information requested without adding unnecessary text or filler words, leading to a more efficient and focused response.

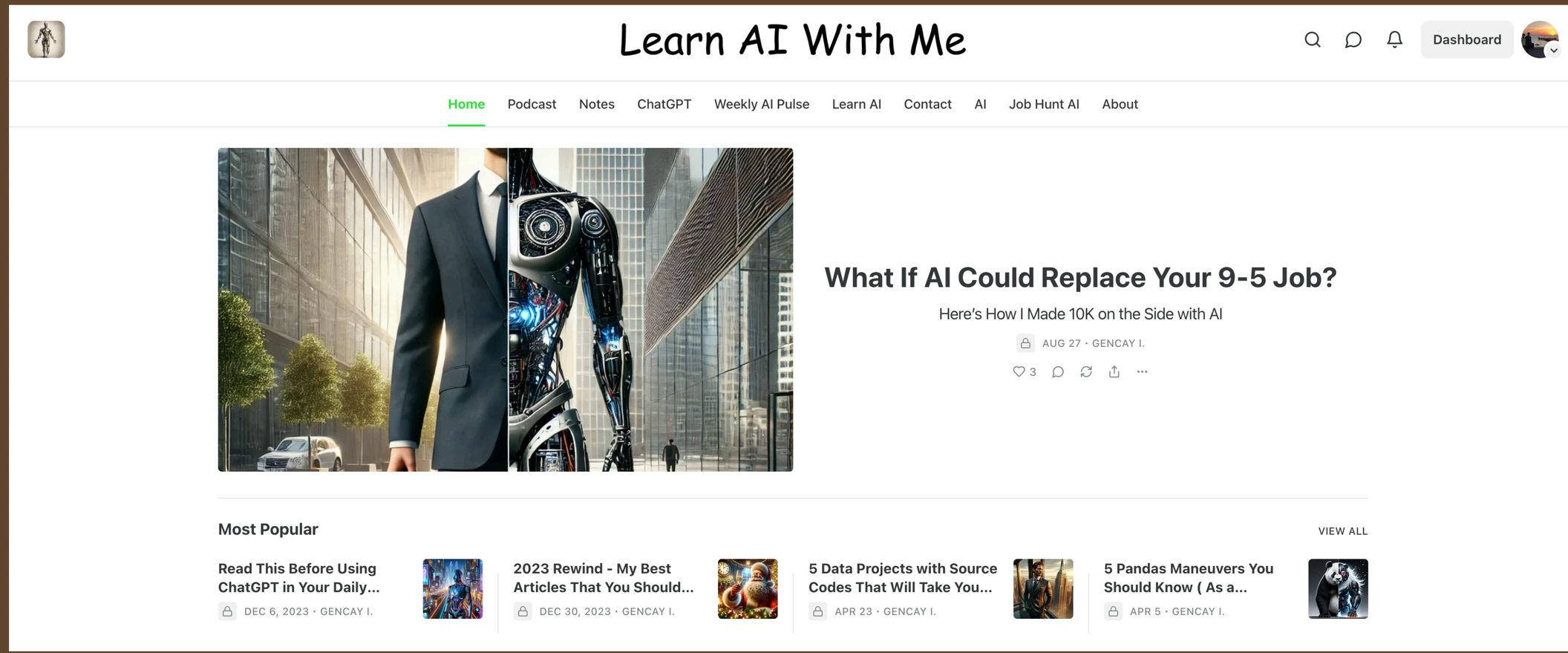
Retrieval-Augmented Generation



Browse please!

Overview: Let's use the power of browsing, because ChatGPT might not be updated and you should use updated information.

- Prompt: "Using the BTC-USD and ETH-USD datasets, predict the prices for the first week of February 2024. After generating these predictions, browse the web to find the actual prices for BTC and ETH during that period. Add the actual prices to the dataset and compare them with your predictions, analyzing any discrepancies."
- Explanation:
- Prediction: The model first generates predictions based on historical data from the dataset.
- Retrieval: After making the predictions, the model simulates retrieving the actual prices (performed by the user in practice) for the specified dates.
- Comparison: The model then compares the predicted prices with the actual prices, providing insights into the accuracy of the prediction and possible reasons for any discrepancies.



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