

Facilitators: John Koithan and Maryam Roshanaei
Location: Corpus Christi room
Software: Claude: <https://chatboxapp.ai/claude/>



Introduction to AI Image Analysis and Data-Scraping: This session demonstrates how AI language models can accelerate facility energy audits by extracting structured data from motor nameplates, interpreting utility billing records, and analyzing aerial imagery through carefully engineered prompts using the RICECO framework.

INTRO TO PROMPTING - BASIC INFORMATION AND INSTRUCTIONS

TOOLS WE WILL USE



Claude
<https://claude.ai/>

OTHER TOOLS

Prompt Engineering:

CoPilot
 Perplexity
 Gemini
 ChatGPT
 Grok

AI IS A TOOL NOT A REPLACEMENT

When using these tools, always
 use your engineering judgement



Disclaimer: The Gulf Coast Center of Excellence and DOE do not endorse or advocate the use of any one AI tool over another or take responsibility for their misuse

THE RICECO PROMPTING FRAMEWORK

Use this structure to build
 effective prompts

- R** **ROLE**
Tell the AI who it should act as.
- I** **INSTRUCTION**
Include the specific task or command
- C** **CONTEXT**
Provide essential background or references.
- E** **EXAMPLES**
Provide examples to show, not just tell what you want
- C** **CONSTRAINT**
Set clear limits and rules (tone, length, etc.).
- O** **OUTPUT**
Choose the specific format (list, essay, code).

Tips and Best Practices

Keep Data Secure

- Don't use secure data
- Check generated output
- Consider paying for plans that ensure data and app security



Conserve Tokens

- Be aware of "token" limitations
- Leverage multiple accounts as needed

For workshop
 materials, energy
 saving tips, and more,
 visit our website at
<https://gccoe.org>

The following instructions were created specifically for the IETC 2026 Hands-On AI Workshop, Claude AI was used, this can be adapted for any AI Tool

1

Create Your Accounts

- Create a free account with [Claude](#)

2

Choose Your Path and Download

- Download file of choice or use your own corresponding data.

Nameplate: u.tamu.edu/xeqEA-N-

Utility Bill: u.tamu.edu/EMTHiSsH

3

Copy RICECO Prompt

- Copy the provided RICECO prompts below and paste them into terminal along with corresponding files.

"You are an industrial energy engineer conducting a facility energy audit. I am uploading a multi-page nameplate PDF. Process every page individually without stopping early, and produce exactly one table row per page. Columns: Motor ID, Source (p.[#] · SN:[serial] or [ESTIMATED; not found]), Manufacturer, HP, Voltage (V), FLA (A), Efficiency (%), RPM, Enclosure, Status. Flag non-motor equipment lacking both HP and FLA as "Excluded not a motor" with a one-line reason; mark unreadable fields as [ASSUMED] or [ESTIMATED; reason]. Identify duplicates sharing Manufacturer, HP, Voltage, RPM, and Enclosure keep one as "Qualifying motor (representative)" and mark others as "Duplicate; combined with [Motor ID]." Finally, render an inline horizontal bar chart of HP by Motor ID for unique qualifying motors only."

"You are an industrial energy analyst reviewing a facility electric utility bill. I am uploading a utility bill PDF. Use only the primary electric account, which is the largest-dollar account, and ignore any gas, water, or secondary electric accounts. For each billing period, extract the service period dates, kWh consumed, and total amount due, and present these in a table. Then render an inline line chart of monthly kWh consumption over the full billing period with a dashed trend line overlaid, where both the primary y-axis (kWh) and the secondary y-axis (dollars) must start at zero so that consumption and cost variations are not visually exaggerated. Add a secondary axis showing monthly cost in dollars so the analyzer can see consumption and spend trending together in one view."

4

Explore Further Try formating Utility Bill using Verifi fromat ([link](#)).

"You are an industrial energy analyst preparing utility data for import into ORNL's VERIFI tool (Visualizing Energy Reporting Information and Financial Implications). I am uploading a multi-page utility bill PDF containing monthly electric bills. Use only the primary electric account, which is the largest-dollar account identified by the "EG ELECTRIC" meter line — ignore all water, drainage, and secondary accounts. For each billing period, extract the service period start date, service period end date, meter reading (current and previous), meter units consumed, kWh consumed (from the EG ELEC ENERGY line), total amount due, and the fuel adjustment value. Format the output as a downloadable CSV file structured to match the VERIFI import template at https://verifi.ornl.gov/assets/csv_templates/VERIFI-Import-Data.xlsx, using the following column mapping: Facility Name = "City Wastewater Treatment," Account Name = account number from the bill, Meter Name = "EG ELECTRIC," Energy Type = "Electricity," Unit = "kWh," Start Date and End Date from the service period, Usage = kWh consumed, and Cost = total amount due. Present the table inline first so the data is visible, then provide the CSV as a downloadable file."