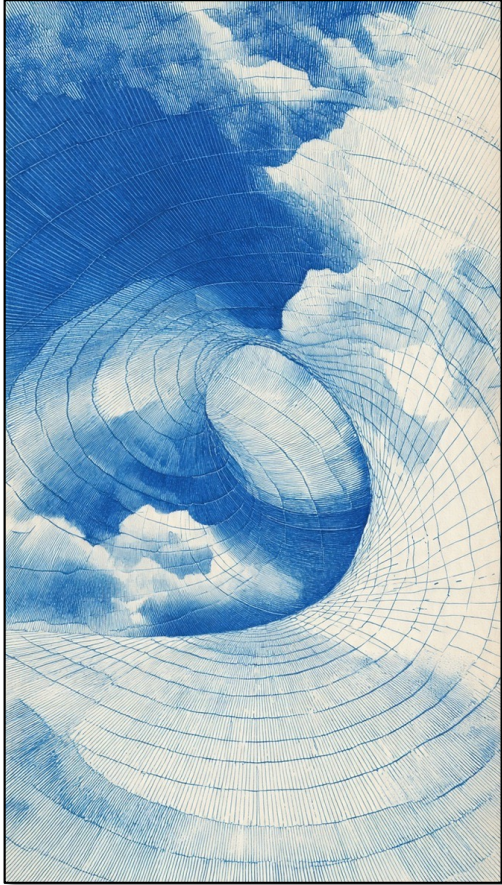
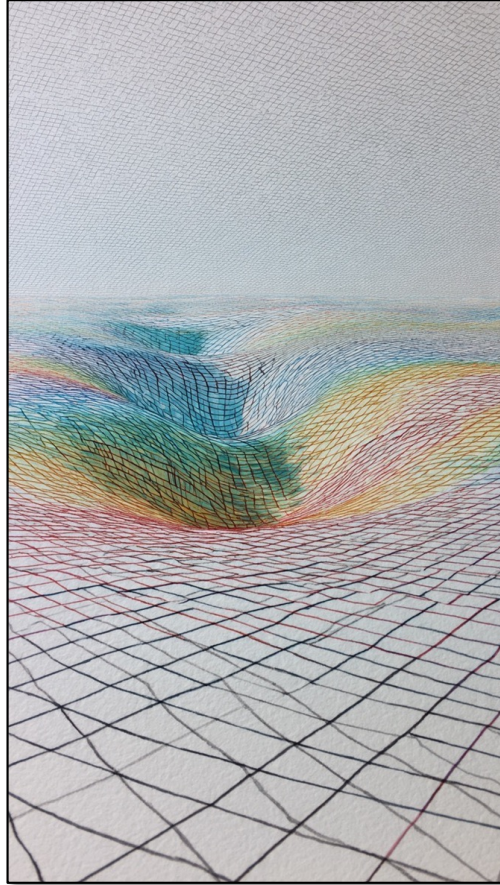




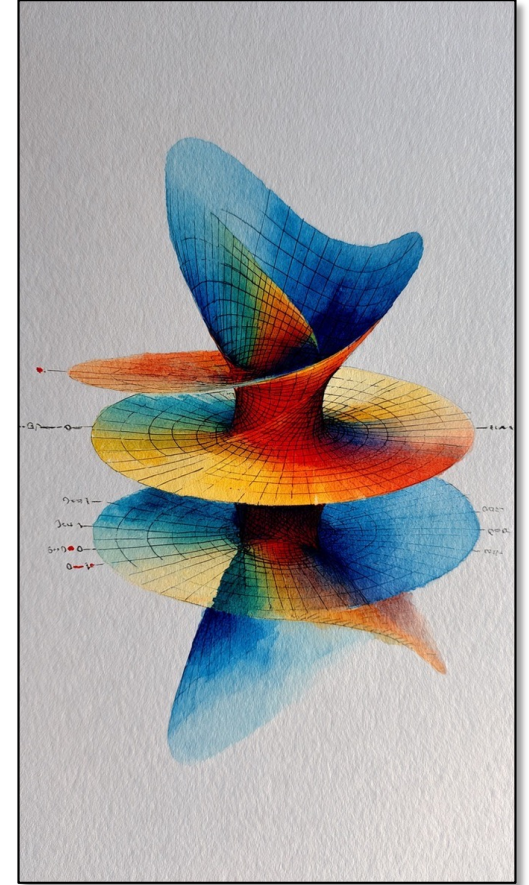
# Further Experiments in Artificial Intelligence

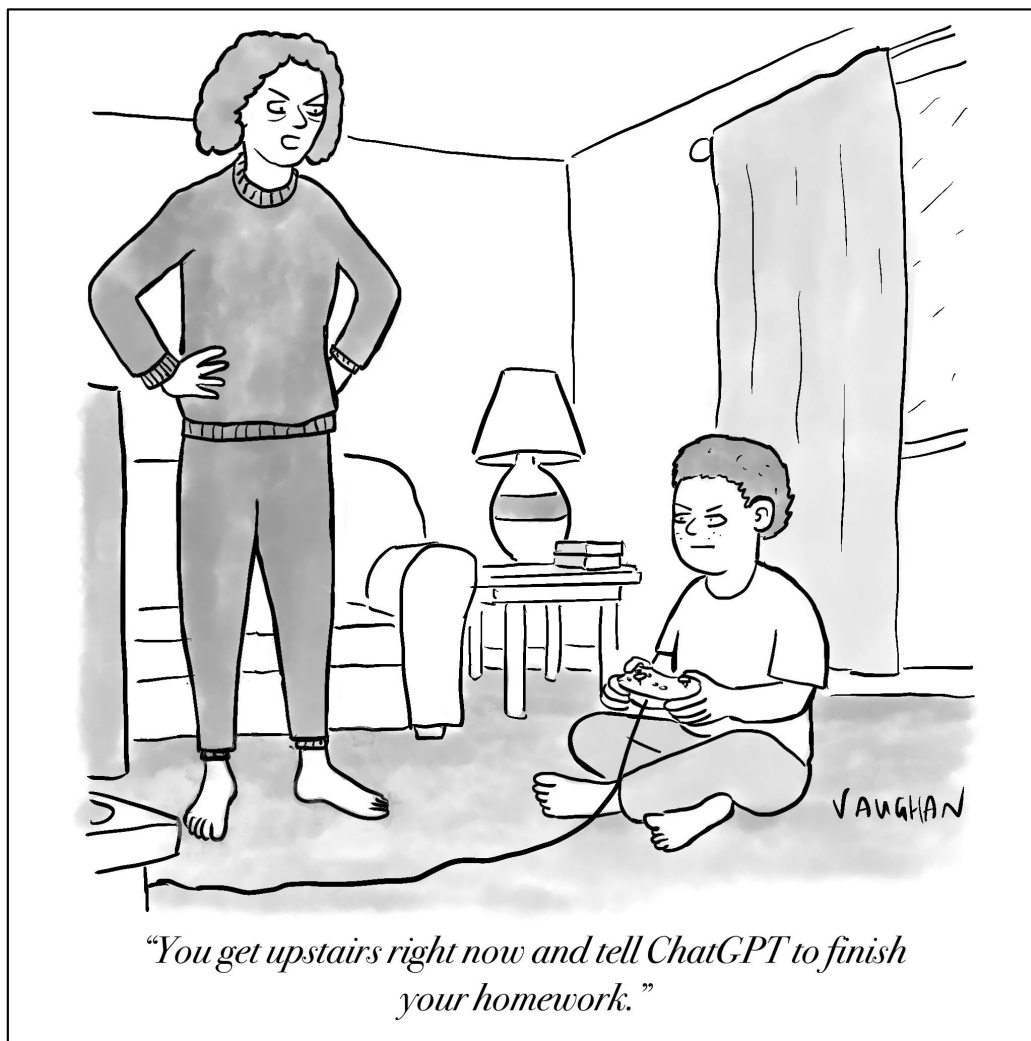


Session #3



October 29, 2025





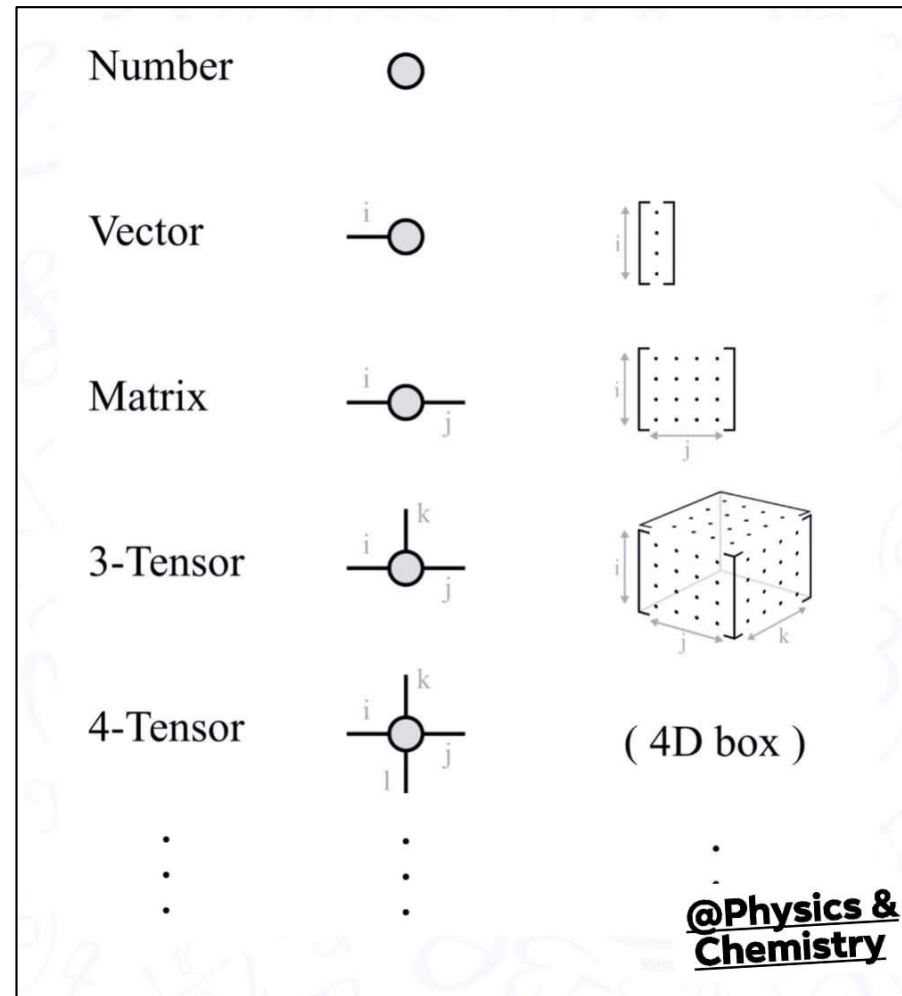
# Matrix and Tensor

Matrix Algebra

Google "Page Rank"

Linear Algebra

Google "Tensor"



# Vocabulary – Acronyms - Nomenclature

Prompt

Inference

LLM – MMLM – SLM

Multimodal

NLP

AGI

RAG

Token

Hallucinations

Algorithm

Corpus

Compute

API



# Vocabulary – Acronyms - Nomenclature

Models

Frontier Models

(values) Alignment

Workflow

Coding

Backpropagation

Bias (Social Bias vs. technical 'bias' (re: weight & bias in neuron))

Cognitive Load

RLHF (Reinforcement Learning from Human Feedback)

Enthusiastic Affirmation

Effective Altruism (EA)

Theory of Mind (ToM)

# Vocabulary – Acronyms - Nomenclature

Context – Attention

Persistent Memory (scenarios – research w/ constant preface, or iterative edit of image)

Contextual framing (context setting, Custom Instructions, Persistent Instructions, Session Parameters)

Suite of Products

Constraints (legal, medical)

Context vs. Symbolism/Algorithmic/if...then

Agent/Agentic

Scale – Hyperscale

Doomer – Boomer

p(doom) – probability of doom scenario

# Vocabulary – Acronyms - Nomenclature

Artifact

Markdown (.md, LaTeX, Lilypond)

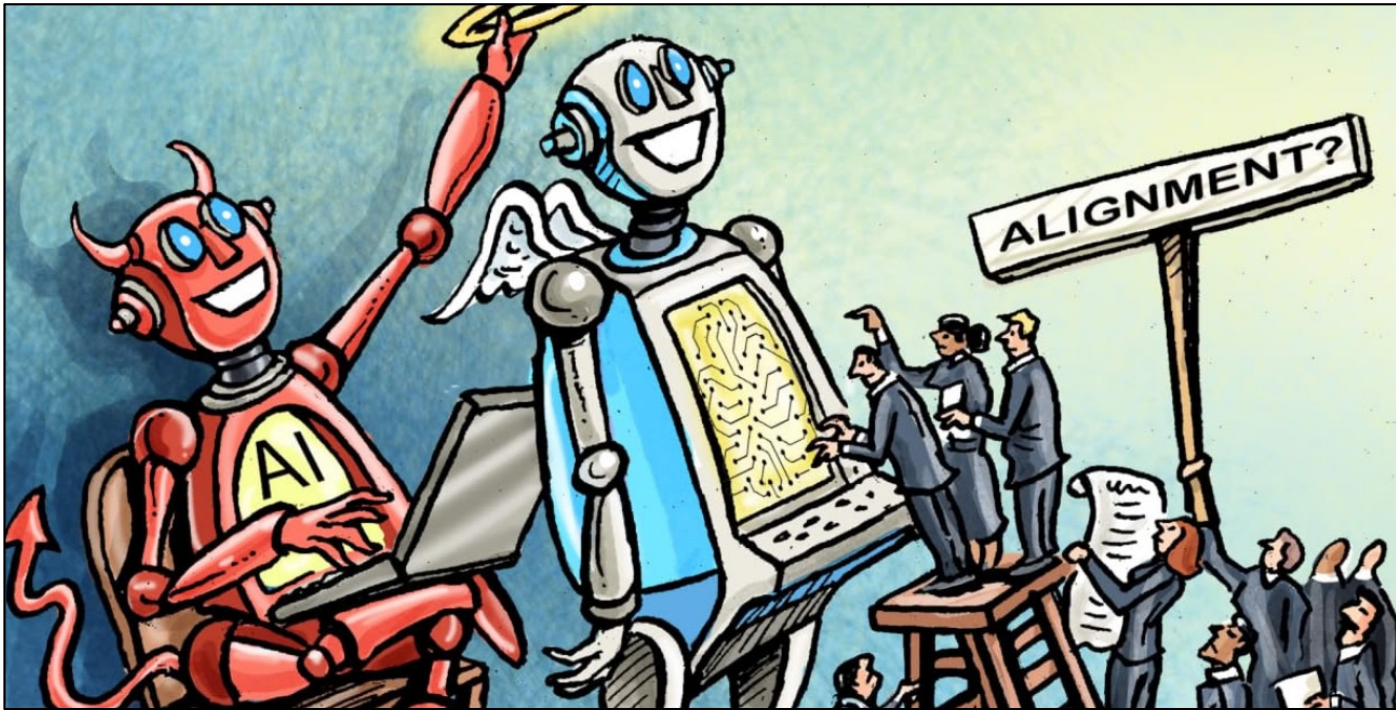
Model Collapse

Misinformation vs. Disinformation

Emergent Behavior (unexpected behavior arising in large models)

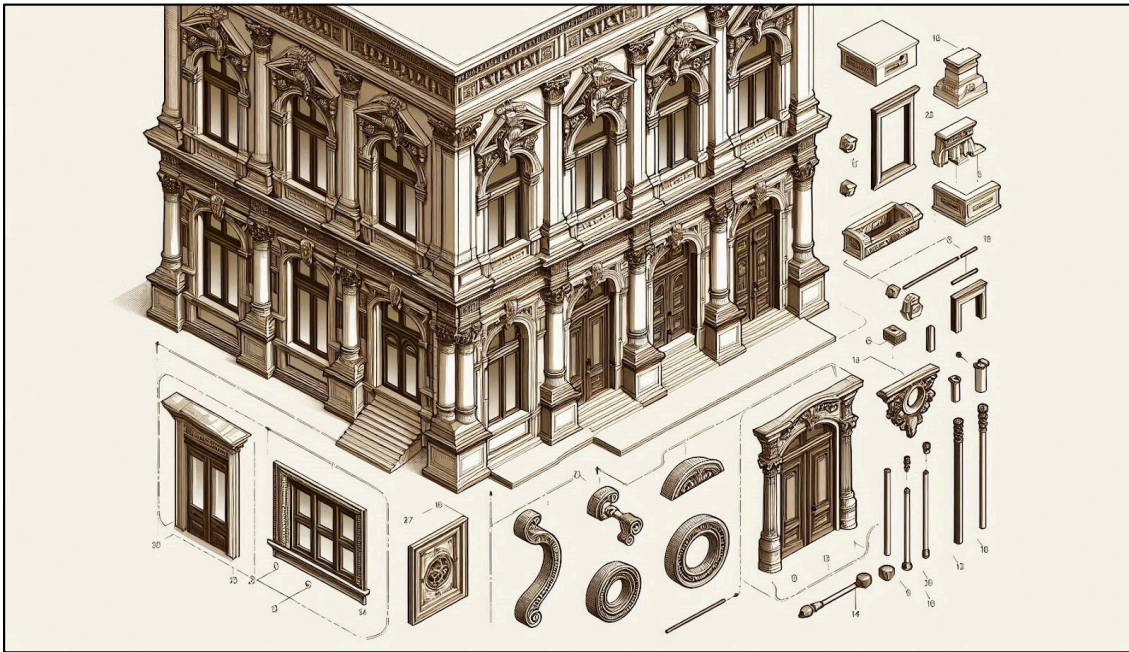
Augmentation (augment human work, not replace humans)

Vector Database

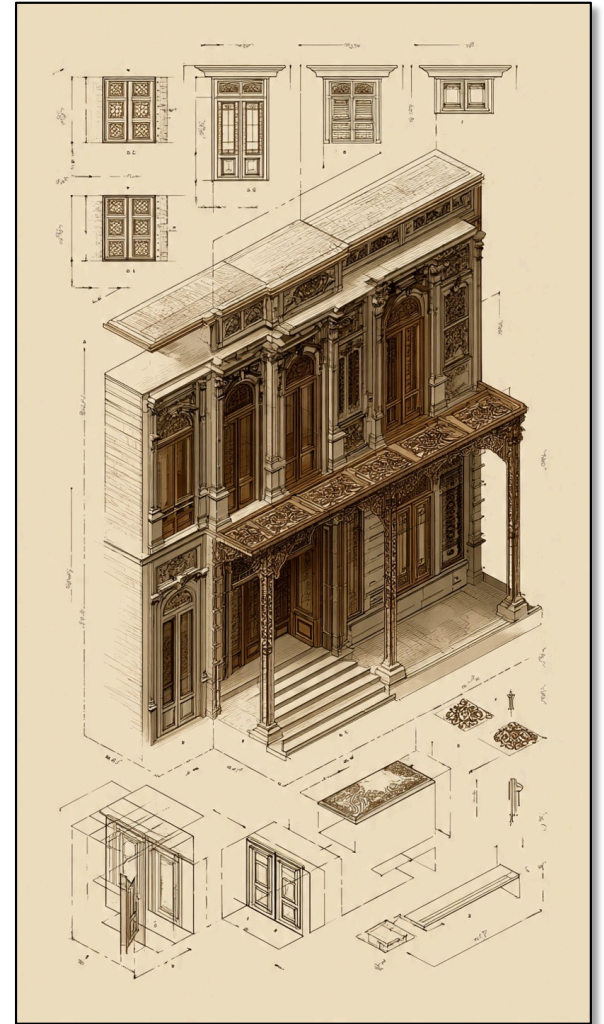
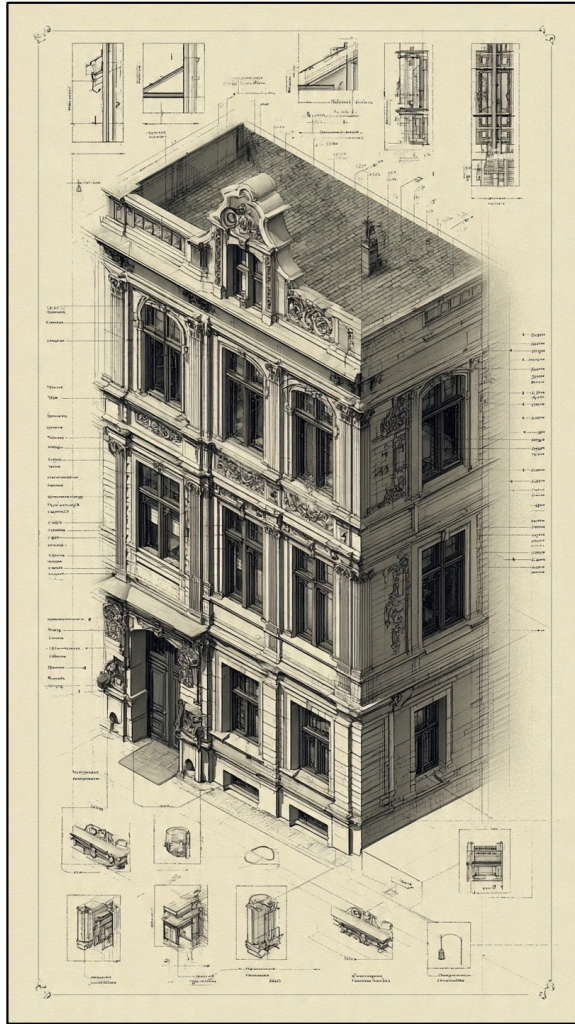




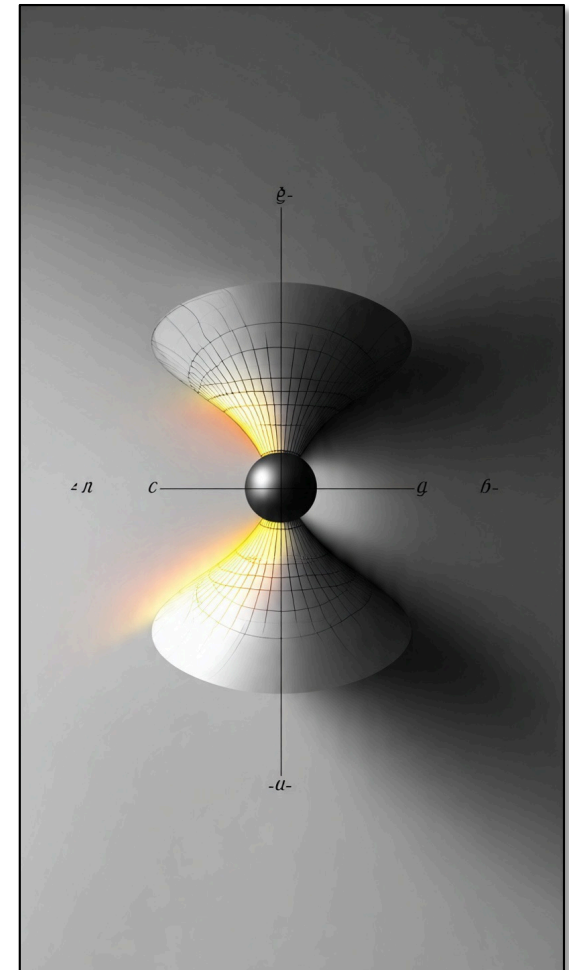
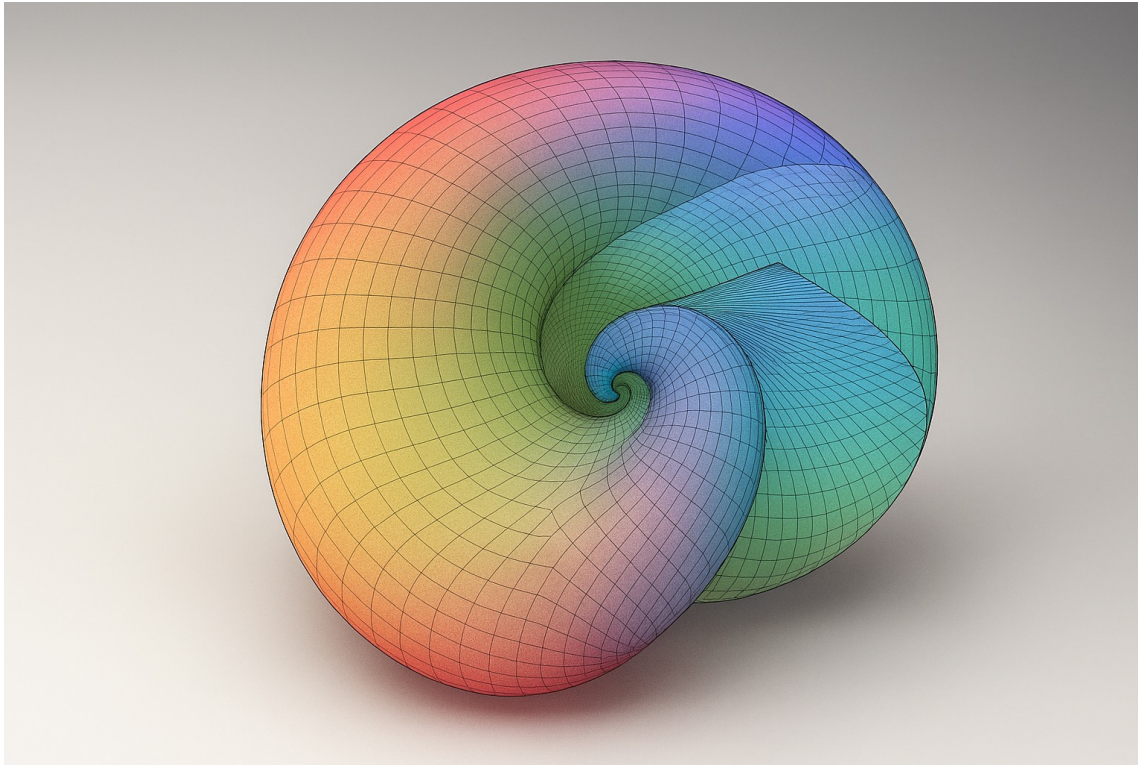
Draw an isometric view of a historical facade with double windows and doors, incorporating triskelion consoles, exploded parts shown separately for clarity. Style: architectural blueprint in sepia tones.



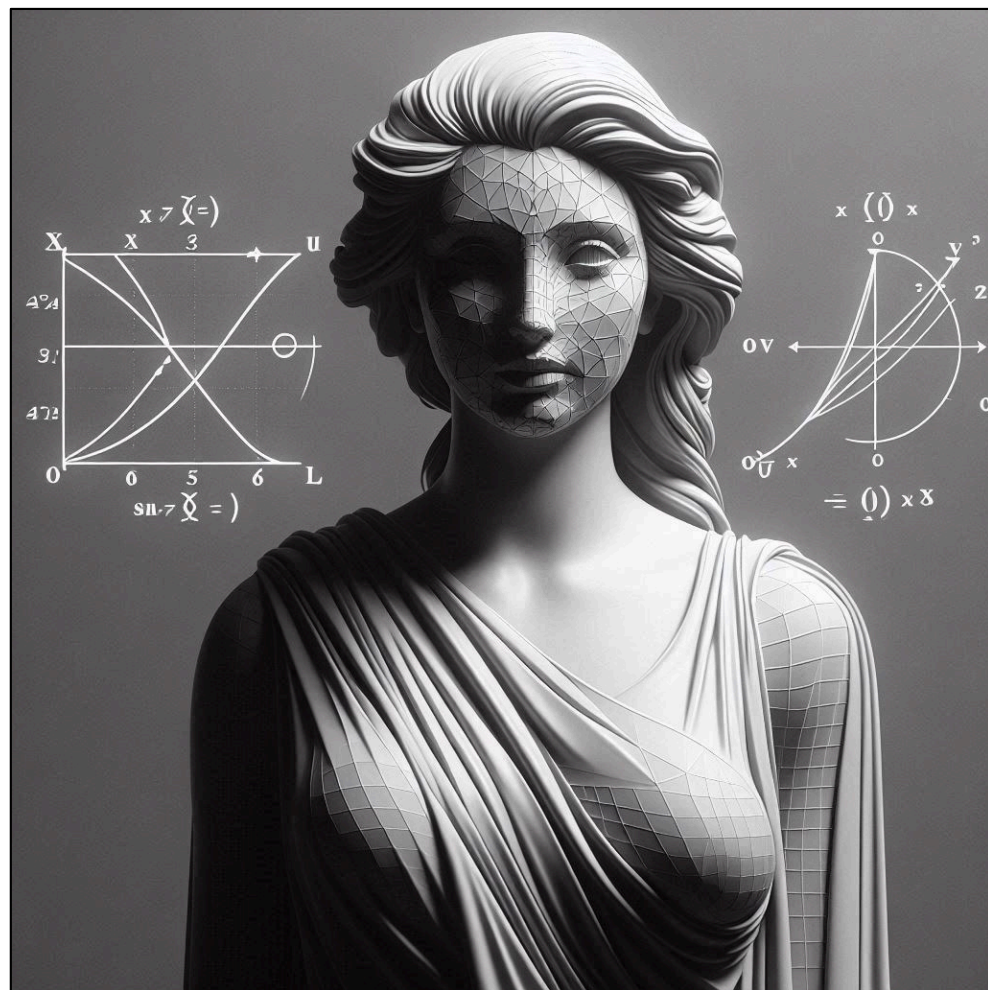
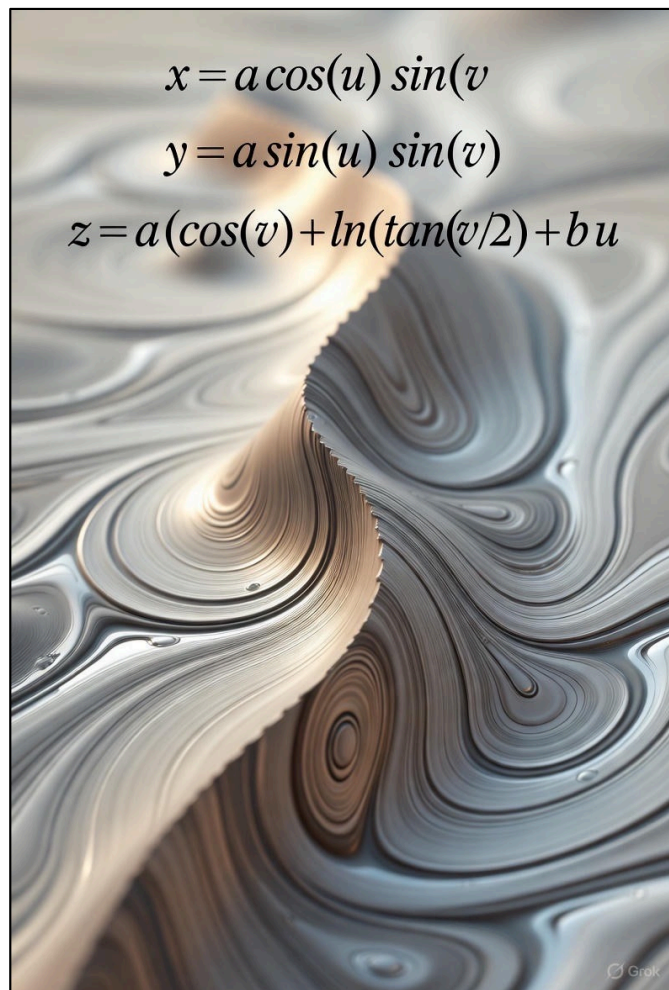




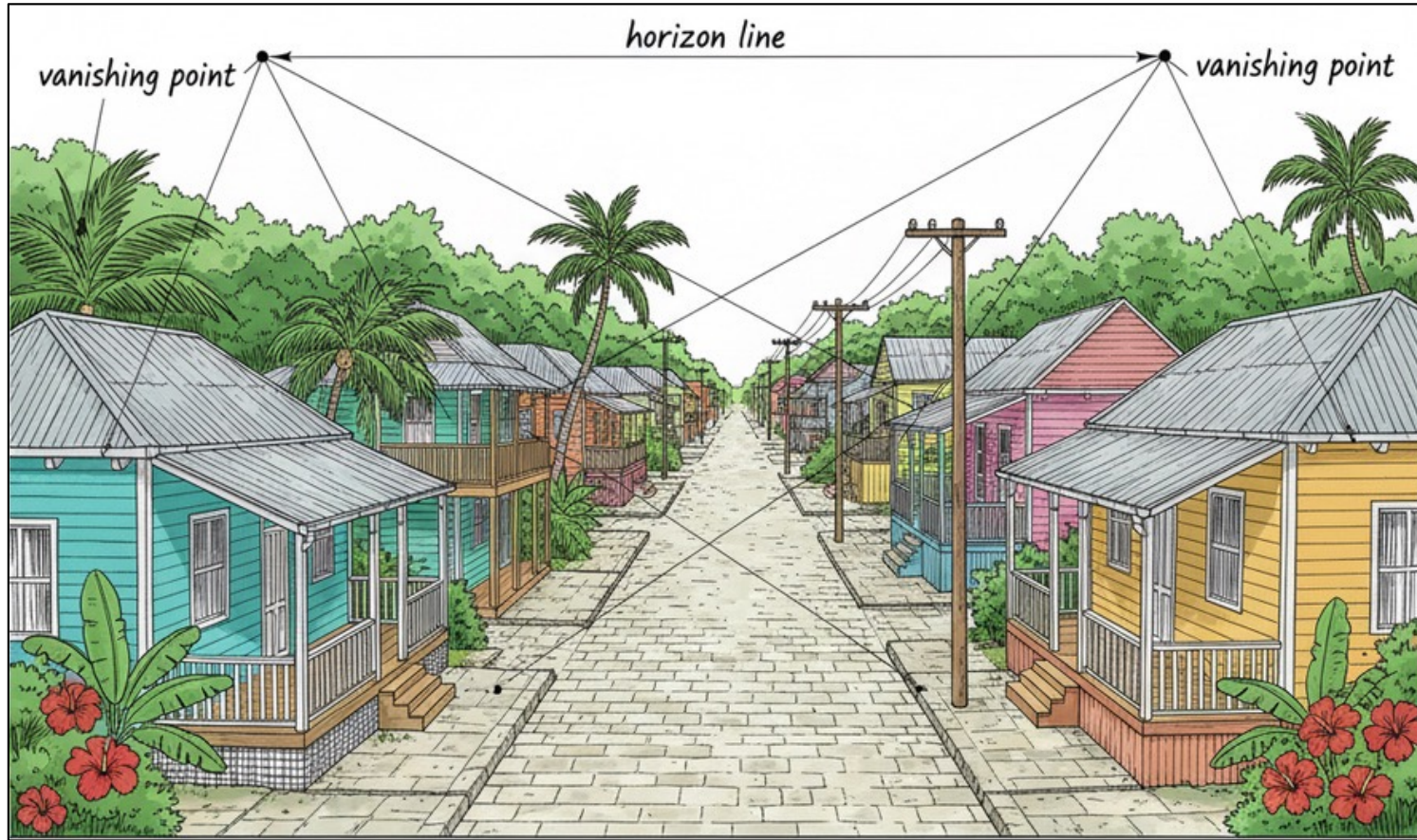
Use following formula to generate a near photorealistic representation:  $x = a \cos(u) \sin(v)$ ,  $y = a \sin(u) \sin(v)$ ,  $z = a (\cos(v) + \ln(\tan(v/2))) + b u$  on a light gray gradient background light from stage left



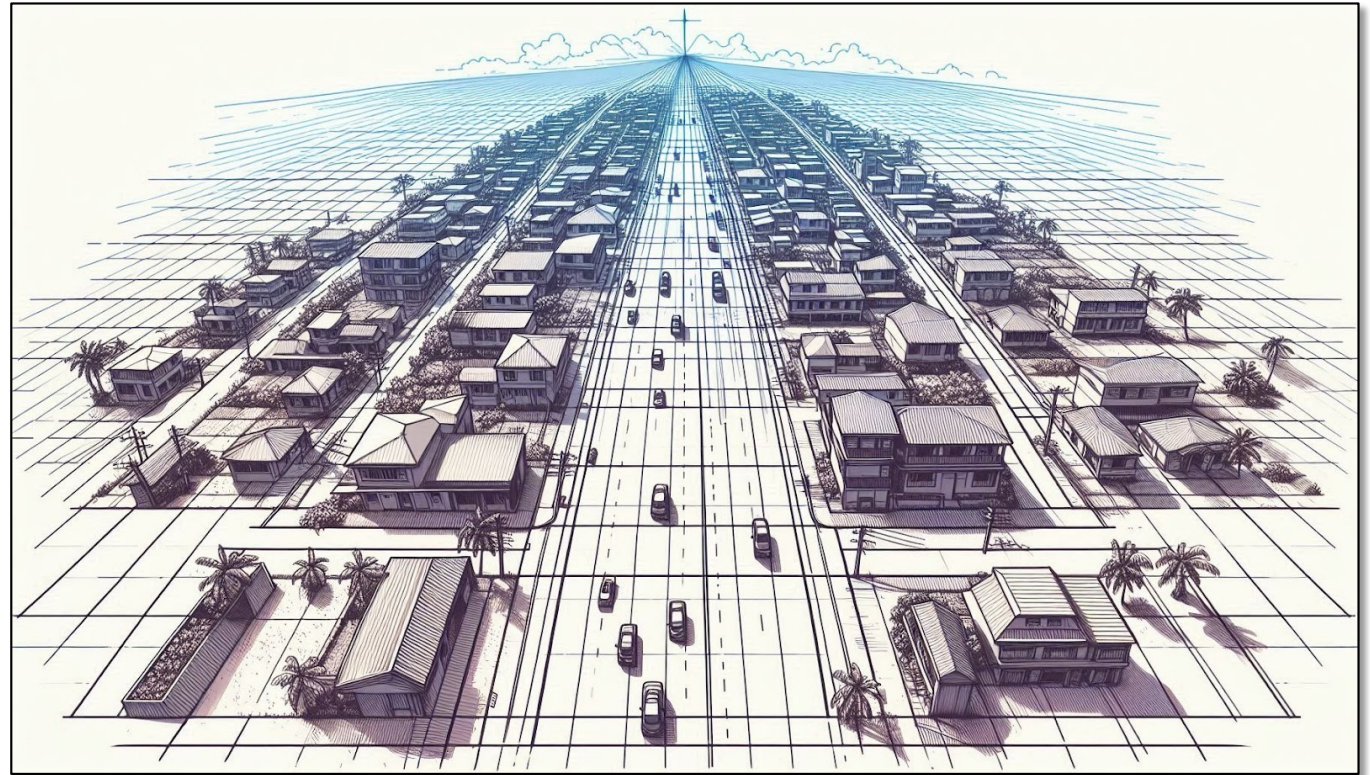




Draw a realistic approximation within a technical diagram of Caribbean village grid layout in two-point perspective viewed from 15° above eye level, with streets and buildings converging to horizon points, labeled with 'horizon line' and 'vanishing points'. Style: clean line art in color ink on white background.

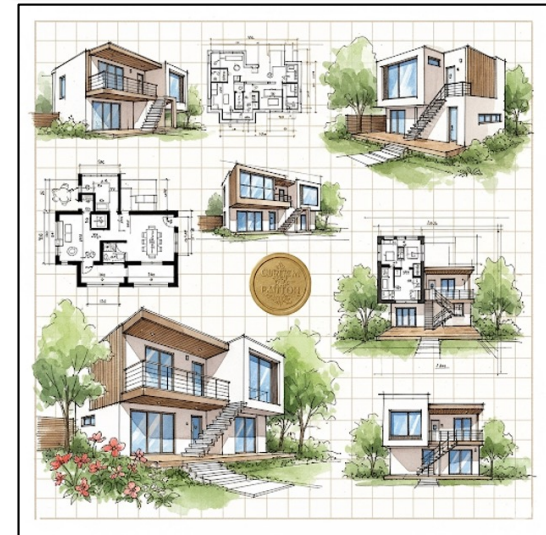
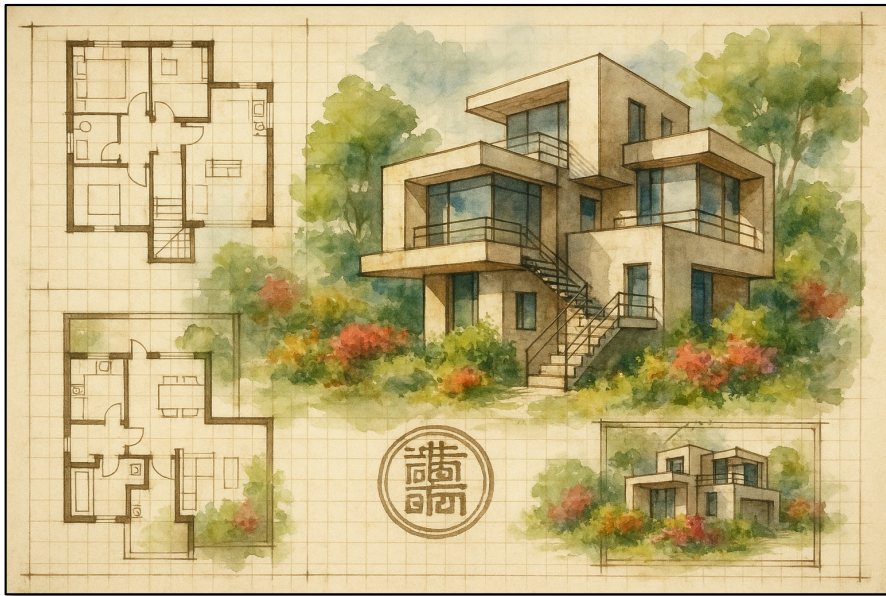




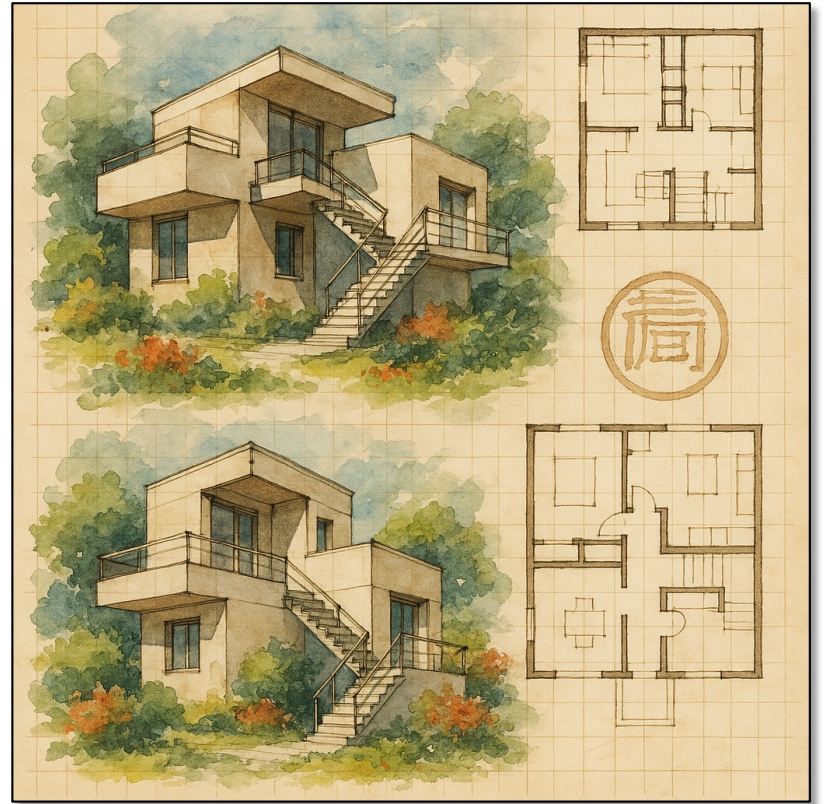


# Personal Studies











@Talks with Crows



October 28, 2025





## Prompt Editor – General Definition

SIDEBAR

MAIN CONTENT AREA

Enter your prompt here...

SEND

Generate a vibrant watercolor of a European narrow street at dusk in two-point perspective, vanishing points on left and right of the horizon line at eye level, buildings tilting inward, people and lamps adding scale, background fading into twilight. Style: loose brushstrokes with warm lighting.

## Summarize

### Prompt – Text

Act as a grant writer. Draft a summary paragraph and a needs statement for a grant application for a [non-profit organization] that provides [services].

### Prompt – Image

### Prompt - Video

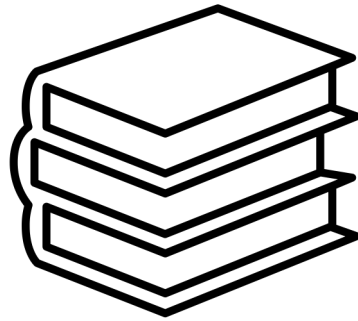
### Retouch Images – Video from Image

Spiraling chaos streams, evoking quantum flows of consciousness through nonlinear time.

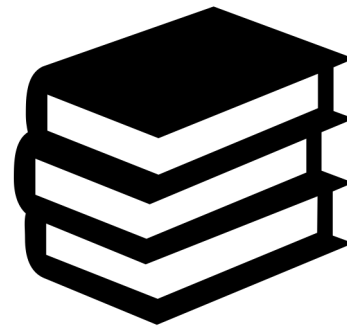
$$dx/dt = -y - z, \quad dy/dt = x + a y, \quad dz/dt = b + z(x - c)$$

Rössler Attractor

## Summarize Voluminous Reports



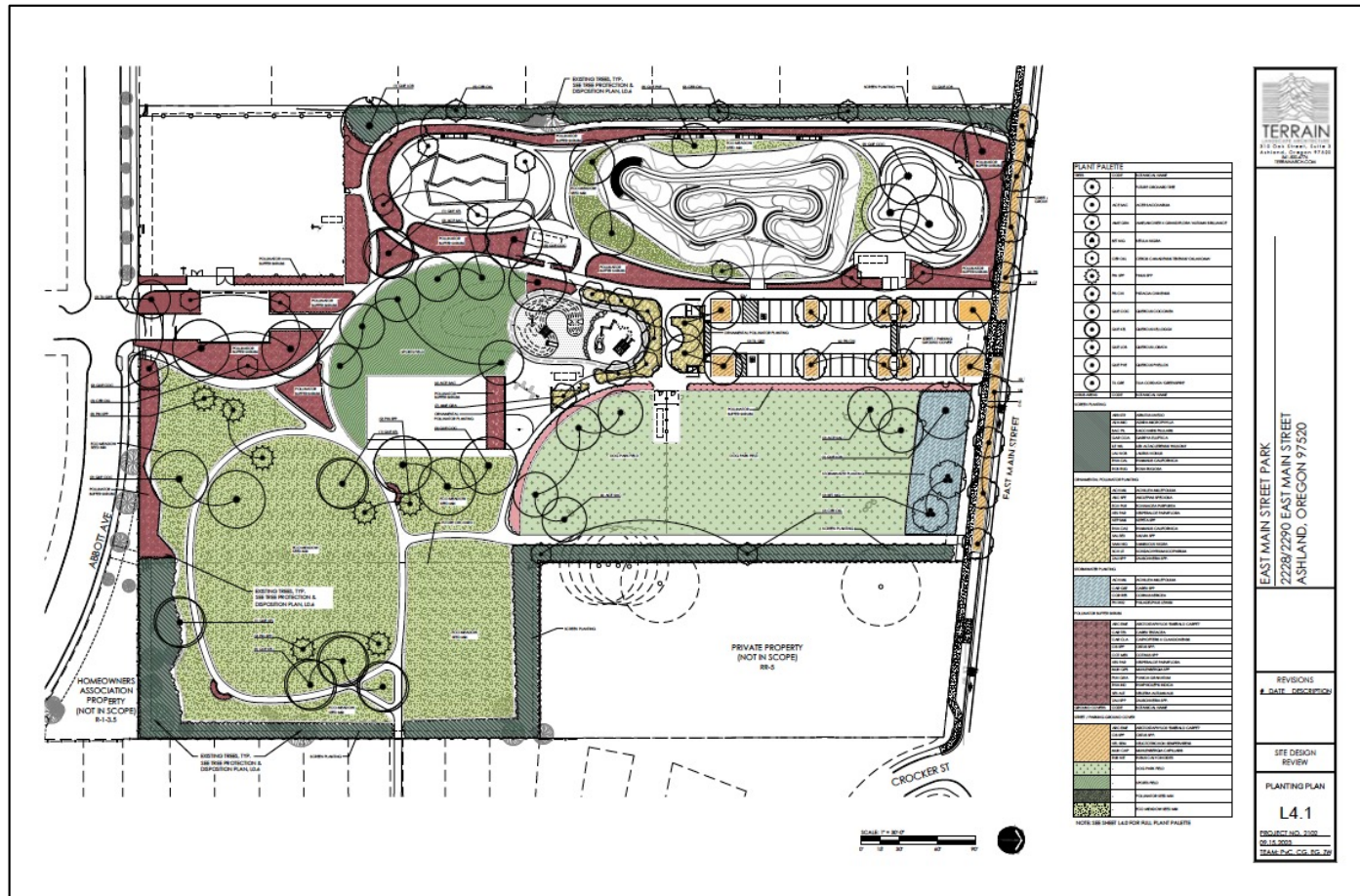
HHS Gender Dysphoria Report

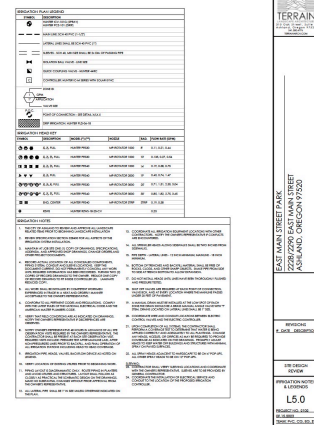
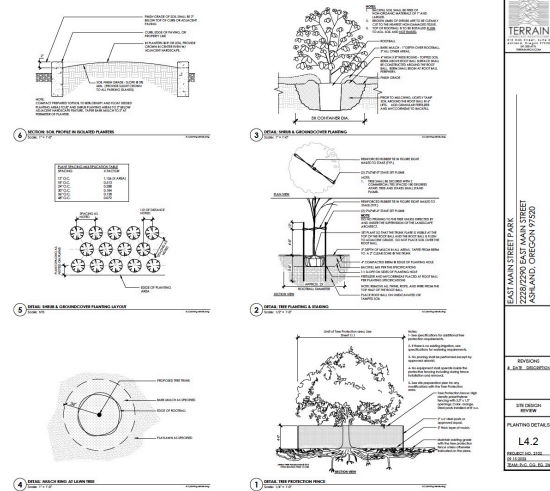


EU AI Regulation



# East Main Street Park





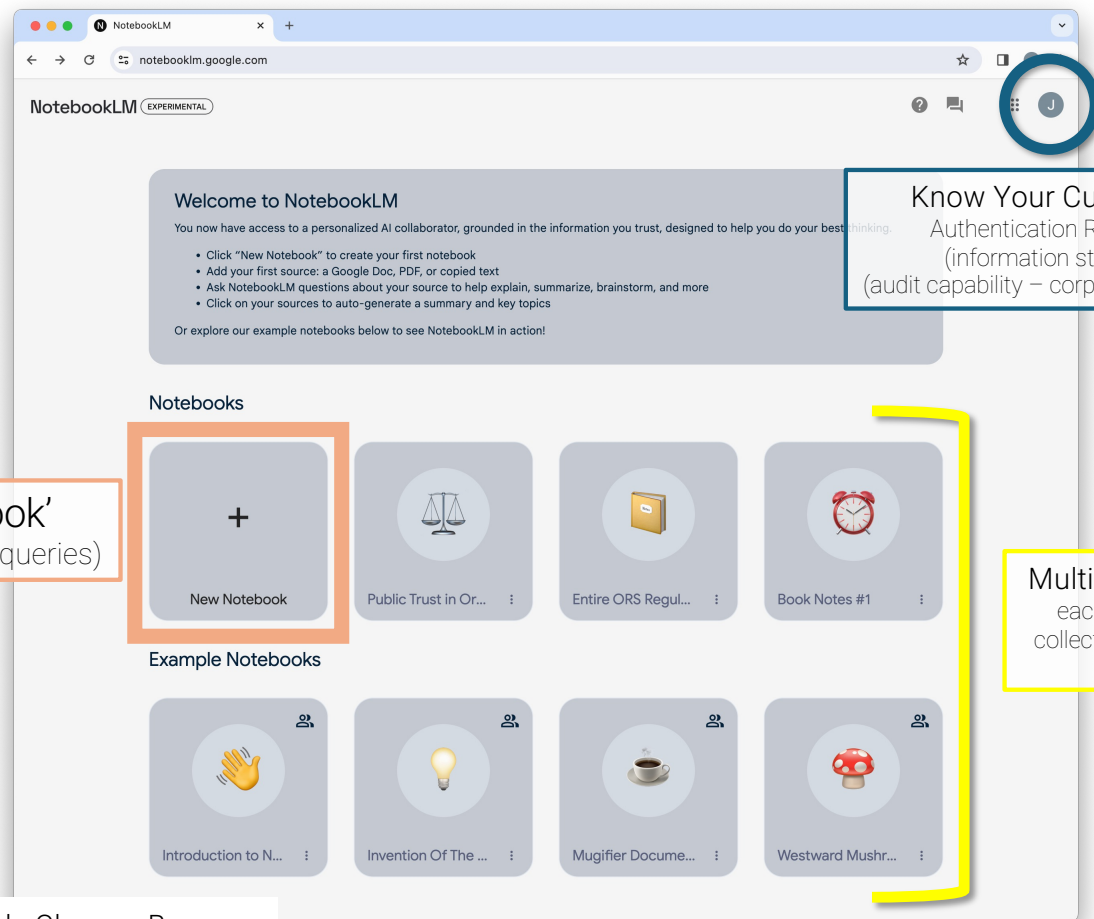


# NotebookLM





# notebooklm.google.com



Know Your Customer

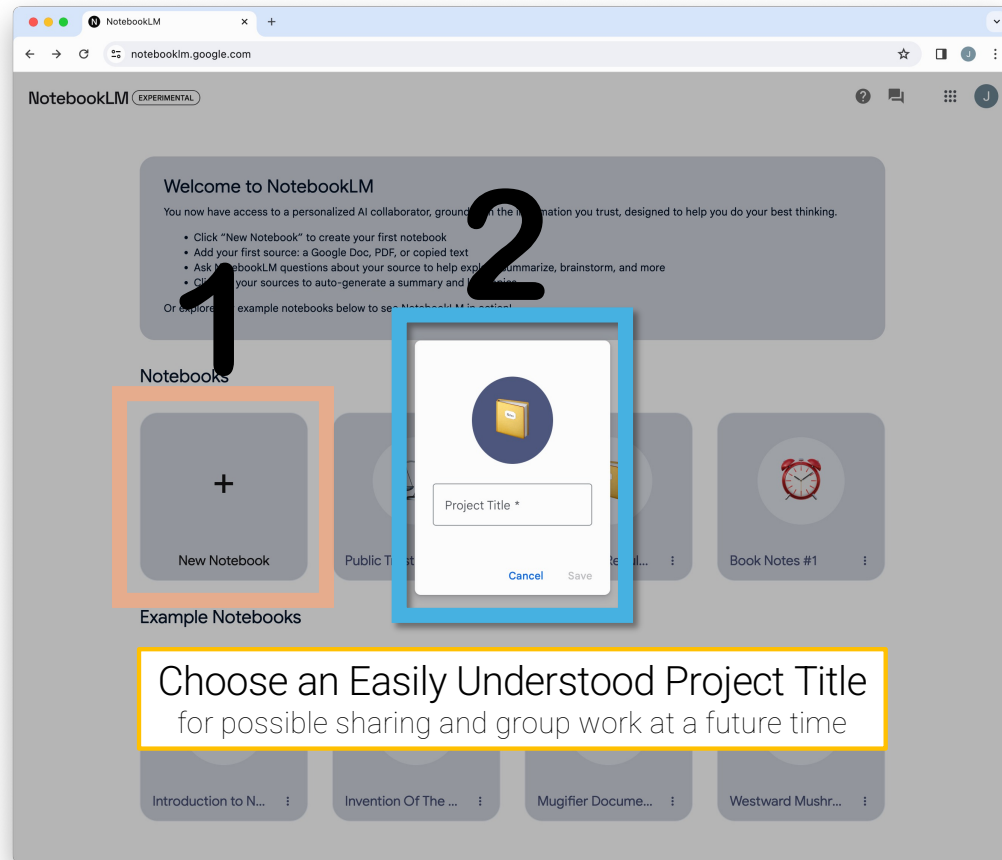
Authentication Required  
(information storage)  
(audit capability – corporate security)

Create New 'Notebook'  
(collection of documents and queries)

Multiple Notebooks  
each with their own  
collection of documents  
and queries

Using a Google Chrome Browser

## Creating a New Notebook



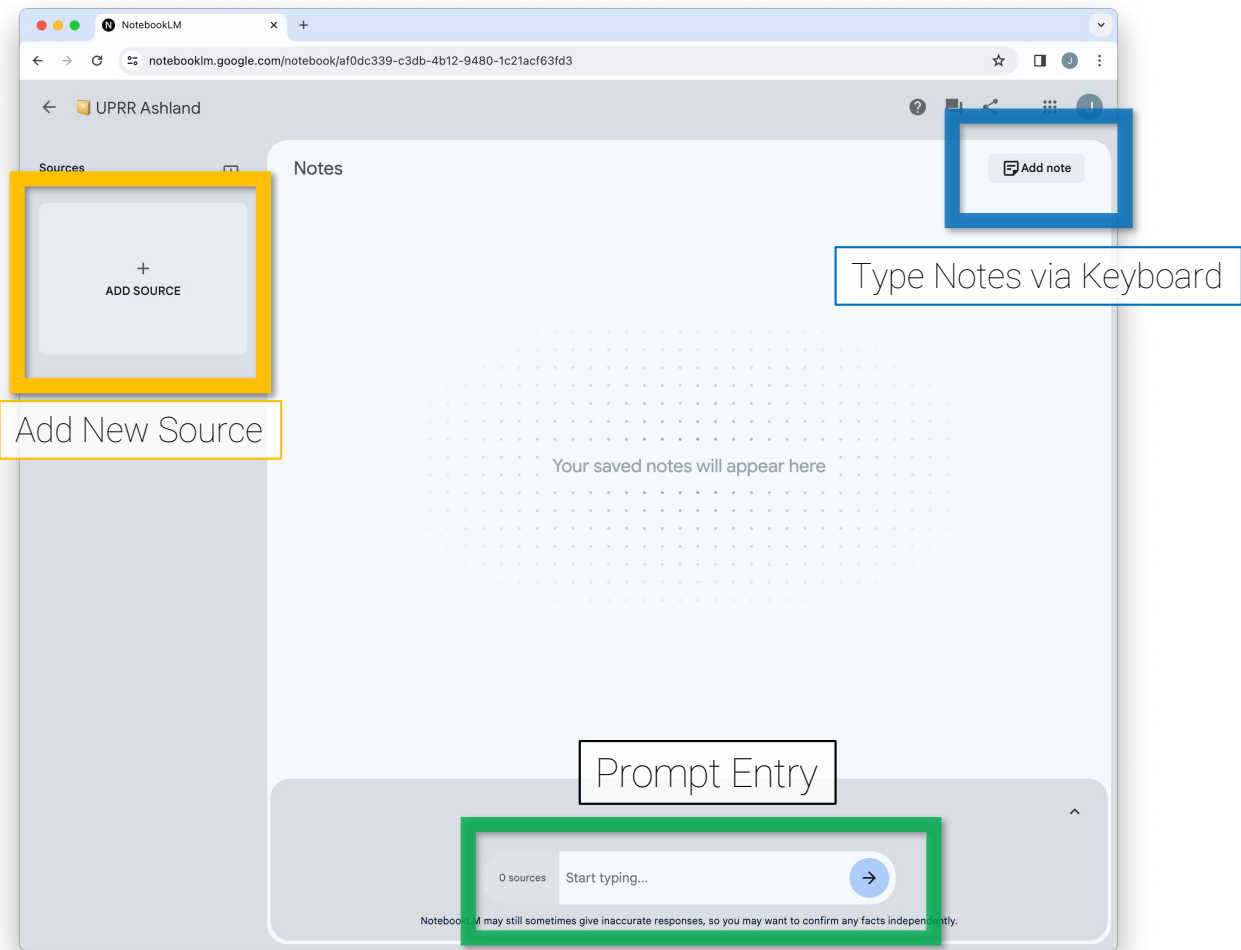
## Blank New Notebook

### Somewhat Similar Products:

OneNote – Microsoft

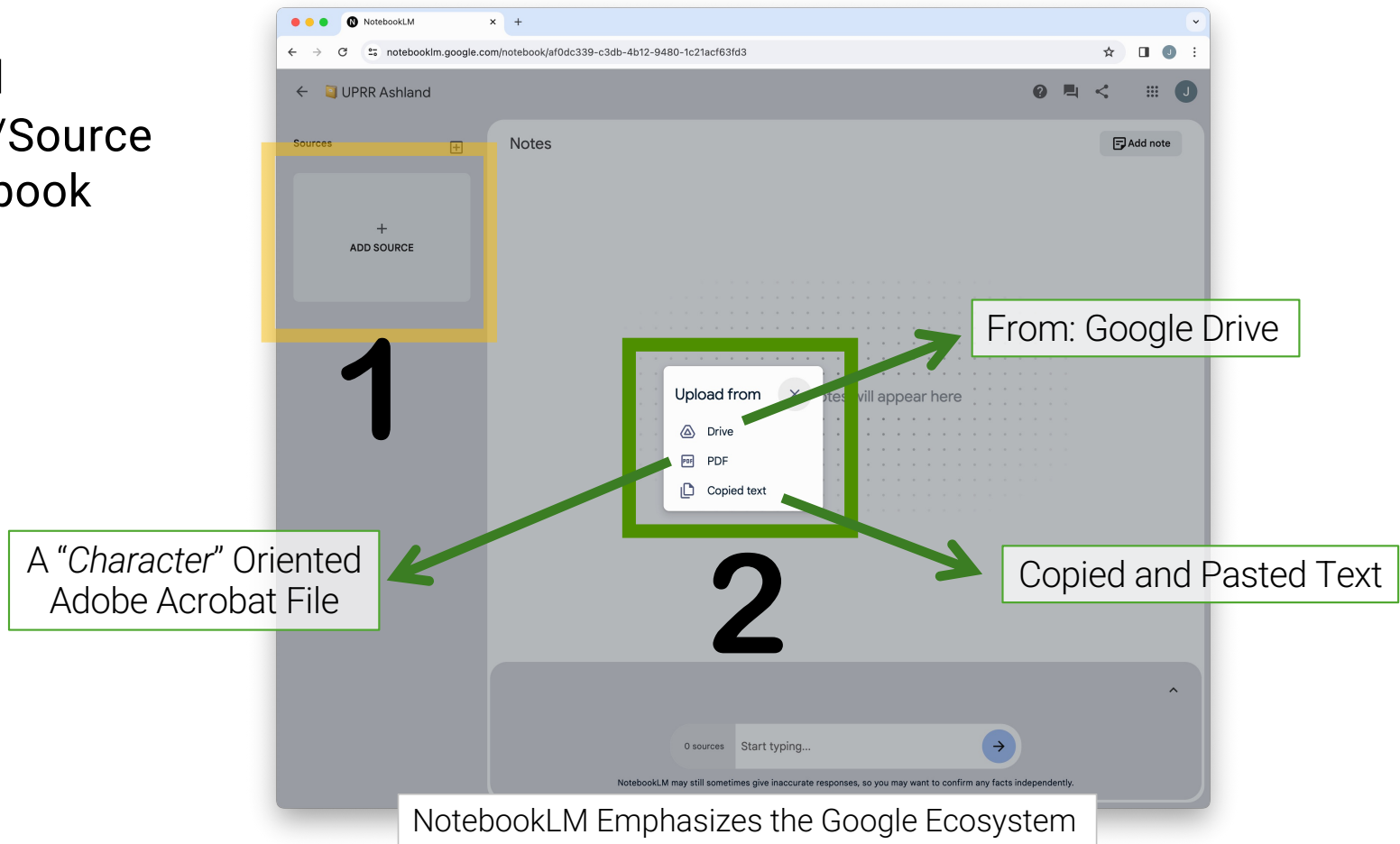
Notes – Apple

Keep - Google





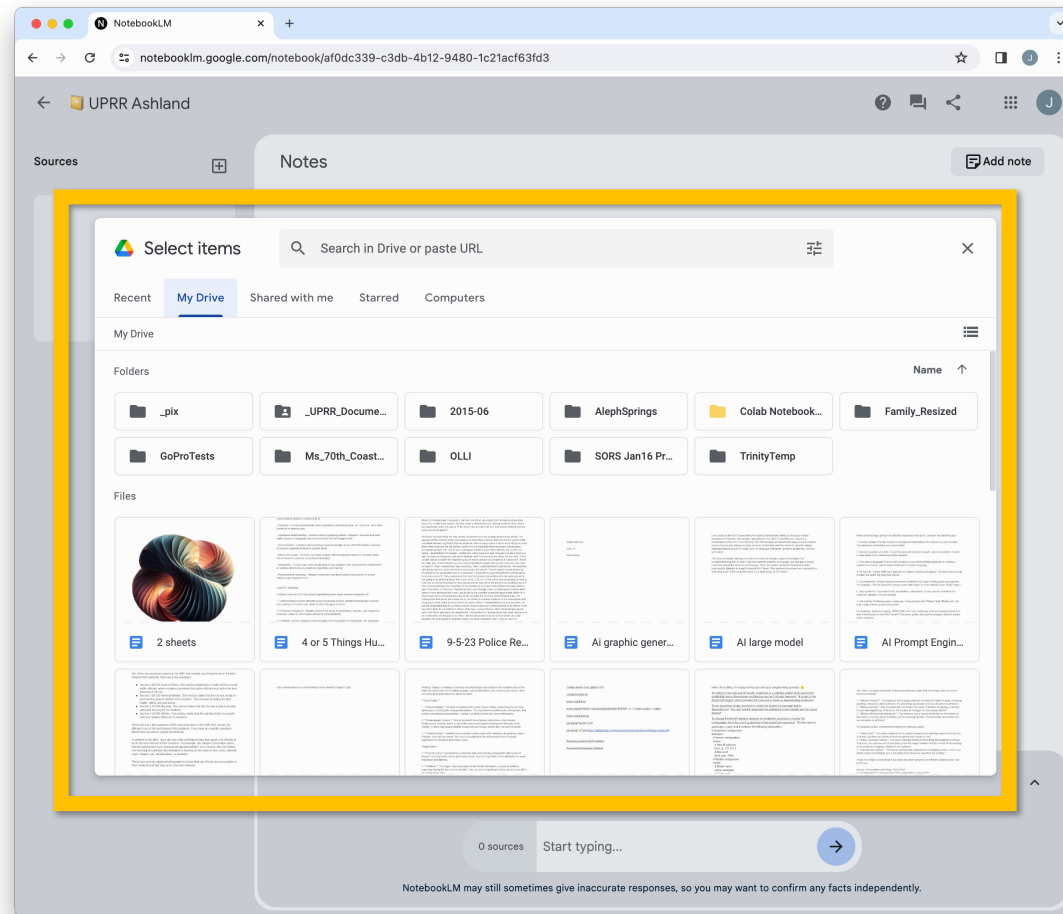
## Add Document/Source to Notebook



## Select Document/File from Google Drive

Many of these files are word processing documents from Google's Docs app.

Notice, too, the way the directories are organized at the top of the list of documents



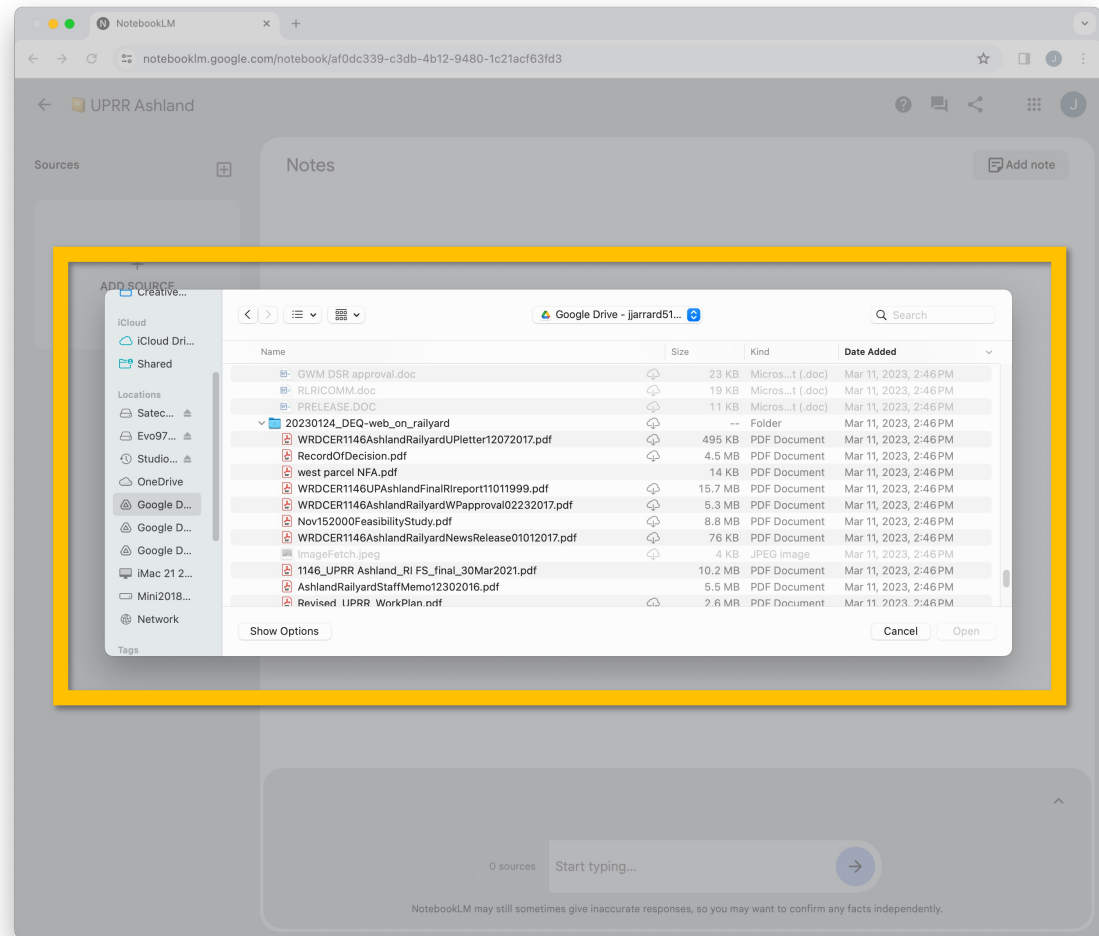
## Select PDF File from Computer Disk Drive

Acrobat PDF files might require considerable preparation prior to submitting to a notebook.

PDF files need to be text oriented. This is problematic if the document was originally scanned.

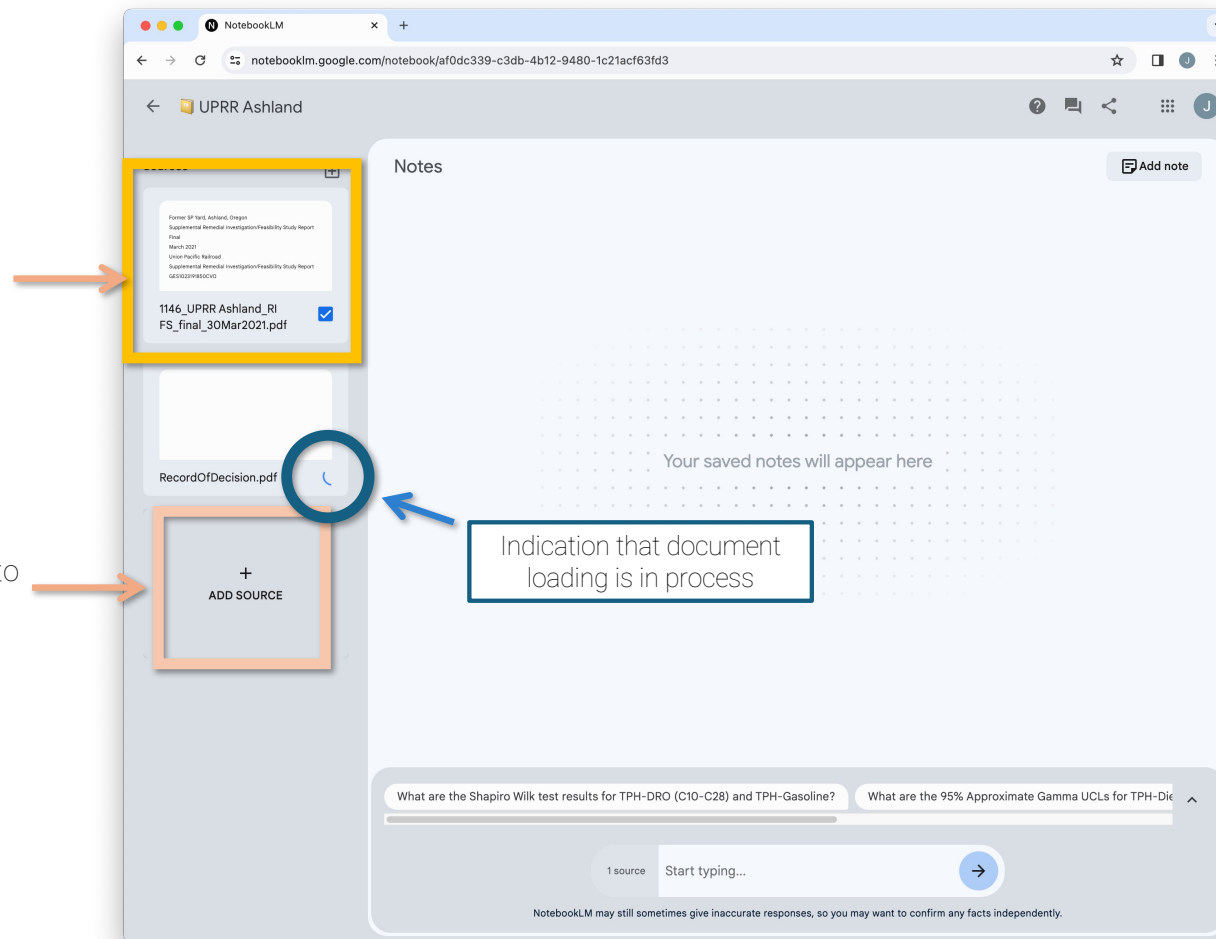
Scanned PDFs are simply pictures of a page, rather than the individual letter text.

OCR (optical character recognition) might be required to prepare a scanned document to be read in NotebookLM.



Document/PDF added to Notebook collection

Add another document/PDF to Notebook collection





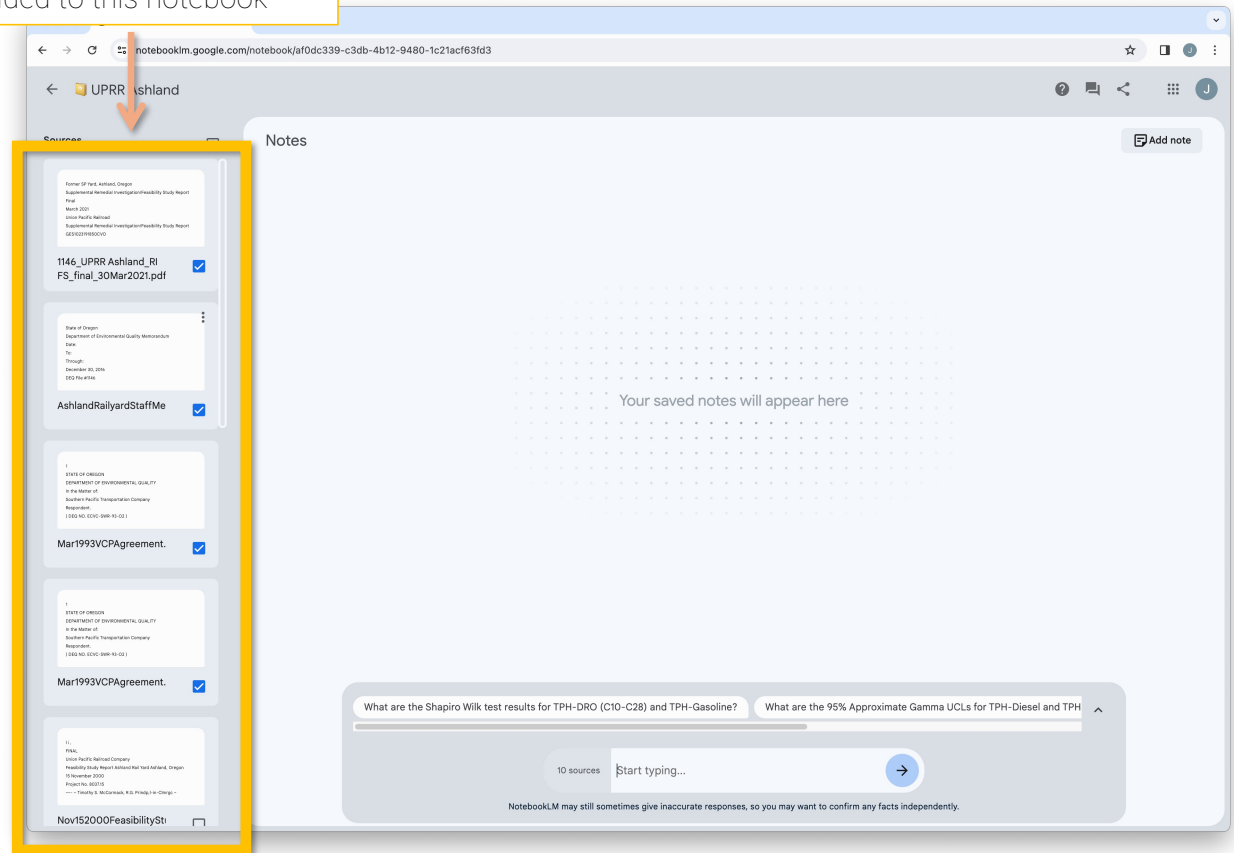
Note: A number of documents added to this notebook

## Level of Effort in Doc Prep

Often, considerable work is required to prepare documents to load into NotebookLM.

Google Docs files tend to load quickly, as they are text files.

PDF files may need conversion from 'scanned' document to text oriented PDF documents, through an OCR process (optical character recognition).



## Areas of Note

Once the Various Documents are Added to the Notebook, the User May Then Query the Documents. These are the Items of Note in the Query Process.

The screenshot shows the NotebookLM web interface. On the left, a sidebar titled 'UPRR Ashland' lists various documents as 'Sources'. The main area is titled 'Notes' and contains a query and its response. Annotations with arrows point to specific features:

- Type in a Text Note Save in Note Area:** Points to the 'Add note' button in the top right corner.
- Previously Submitted Query:** Points to the query text: 'What are the most heavily impacted areas of the UPRR yard'.
- Response to Initial Query:** Points to the AI-generated response text.
- Citations for Answer to Query:** Points to the '3 citations' link below the response.
- Feedback to AI Copy Response to Clipboard:** Points to the feedback and copy icons at the bottom of the response.
- Pin Response to Note Area:** Points to the pin icon at the bottom of the response.
- Type a Query of Documents in Notebook:** Points to the input field at the bottom of the interface.

## Multiple Queries

Note that multiple queries may be submitted within a Notebook.

Each query gets its own response and citations

The screenshot displays the NotebookLM web application interface. The browser address bar shows the URL: `notebooklm.google.com/notebook/af0dc339-c3db-4b12-9480-1c21acf63fd3`. The notebook is titled "UPRR Ashland".

**Sources Panel (Left):**

- Former UP Yard, Ashland, Oregon  
Superfund Remedial Investigation/Feasibility Study Report  
Final  
March 2001  
Union Pacific Railroad  
Superfund Remedial Investigation/Feasibility Study Report  
GE3021486CVD
- 1146\_UPRR Ashland\_RI  
FS\_final\_30Mar2021.pdf
- State of Oregon  
Department of Environmental Quality Memorandum  
Date  
To  
Thru  
November 30, 2016  
DEQ File #1146
- AshlandRailYardStaffMe
- 1  
STATE OF OREGON  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
In the Matter of:  
Southern Pacific Transportation Company  
Respondent:  
(1002 NO. ECVC 988-93 Q2)
- Mar1993VCPAgreement.
- 1  
STATE OF OREGON  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
In the Matter of:  
Southern Pacific Transportation Company  
Respondent:  
(1002 NO. ECVC 988-93 Q2)
- Mar1993VCPAgreement.
- 1)  
FINAL  
Union Pacific Railroad Company  
Feasibility Study Report Ashland Rail Yard Ashland, Oregon  
18 November 2000  
Project No. 2001-15  
--- Timothy S. McCormick, R.G. Pringle in Charge ---
- Nov152000FeasibilitySt

**Notes Panel (Right):**

**Note 1:** what part of the UPRR area has chemicals in excess of 4 feet deep

**The following areas of the UPRR yard have chemicals in excess of 4 feet deep:**

- The area of the former roundhouse and drip slab areas
- The area between 1 and 5 feet bgs near the former drip slab
- The area between 6 and 15 feet bgs near the former roundhouse and drip slab

The highest concentrations of petroleum hydrocarbons (TPH) were detected in the easternmost 3-acre area of the site (D column – cells D1, D2, and D3). Within this area, TPH concentrations ranged from 254 mg/kg at SSB-M05 to 1,700 mg/kg at DSB-N06 within the 6 to 15 foot bgs depth interval.

2 citations

**Note 2:** Which areas of the UPRR yard have contaminants in excess of the residential standard

According to the Record of Decision, the following areas of the UPRR yard have contaminants in excess of the residential standard:

- The LMSA, Ponds A and B, and the Former Car Repair Shed Area have total petroleum hydrocarbons (TPH) detections in soil that exceed residential concentrations to a maximum depth of 6 feet bgs.
- Soils from Oto 2 feet bgs in the LMSA and Former Car Repair Shed that contain lead and/or arsenic at concentrations above residential cleanup goals.
- Soils from Oto 5 feet bgs in the area north of Pond A and surface soils in the Former Car Repair Shed that contain one or more PAH compounds exceeding residential cleanup goals.
- Surface soils near the former Drip Slab, and north of both Pond A and the former round house containing one or more PAH compounds exceeding the residential cleanup goals (based on single-point exceedences rather than widespread detections);

2 citations

**Query Bar (Bottom):**

What are the chemicals of concern in soil at the Ashland Rail Yard Site? How are exposure pathways defined for evaluating potential human health risks

10 sources Start typing...

NotebookLM may still sometimes give inaccurate responses, so you may want to confirm any facts independently.

## Citations

If a user clicks on the Citations button, the following appears

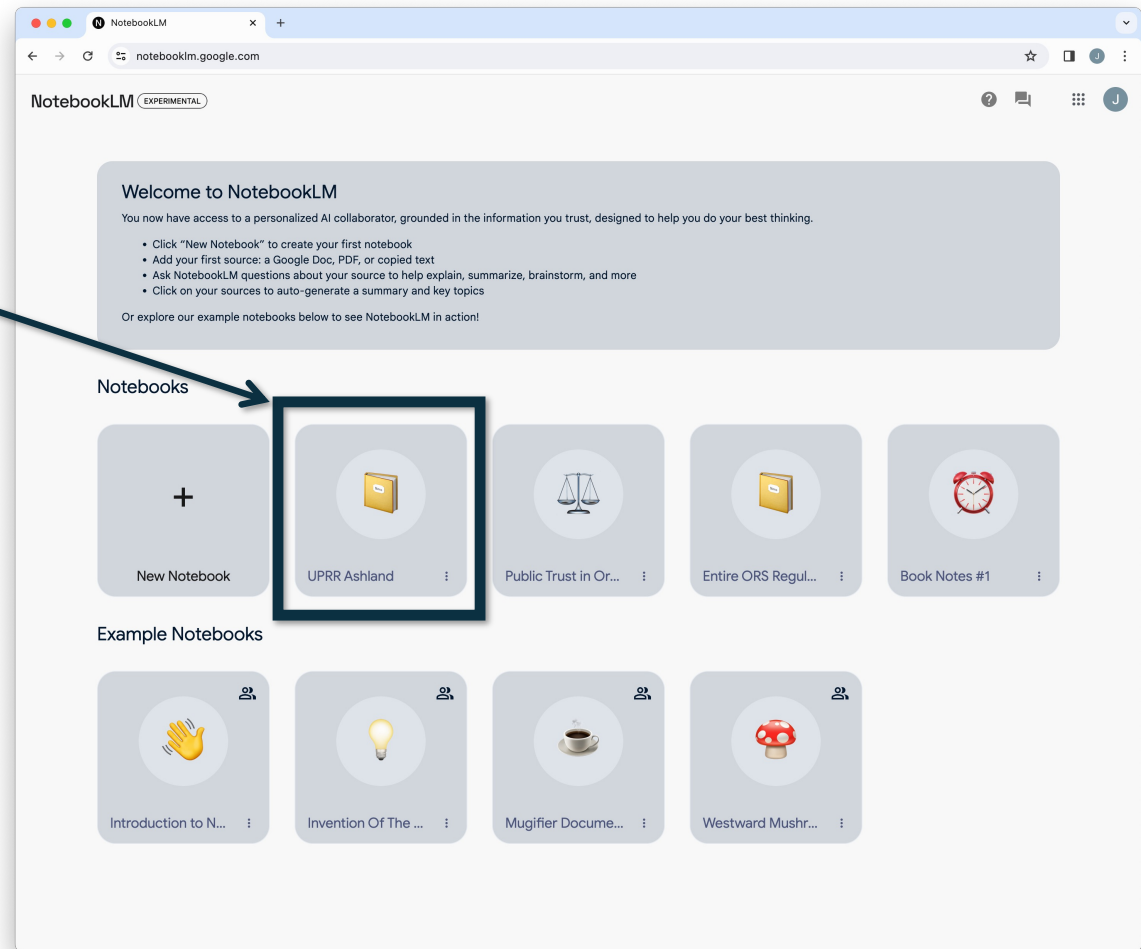
The screenshot shows the NotebookLM web interface. On the left, under the heading "Sources", there is a list of documents including "1146\_UPRR Ashland\_RI FS\_final\_30Mar2021.pdf", "AshlandRailYardStaffMe", "Mar1993VCPAgreement.", and "Nov152000FeasibilitySt". A yellow arrow points from the text "If a user clicks on the Citations button, the following appears" to the "3 citations" button in the note.

The main area displays a note titled "Which areas of the UPRR yard have contaminants in excess of the residential standard?". The note contains text about the Record of Decision and lists several areas of concern, including the LMSA, Ponds A and B, and the Former Car Repair Shed Area. The note also mentions that PAHs have been detected sporadically in ground water monitoring wells and that total chromium and total lead have been detected at concentrations exceeding federal MCLs.

At the bottom of the note, there is a search bar with the text "the Ashland Rail Yard Site?" and "Which areas of the Ashland Rail Yard had average total petroleum hydrocarbon concentrations in soil exceeding 500 mg/kg?". Below the search bar, it says "10 sources" and "Start typing...".



A Return to NotebookLM's Main Screen. The Recently Created Notebook is Stored There.





# NotebookLM

# End

