Internship Presentation

Lee Hong Teng (Ft. Tristan)

Background

- Final Year SMU Information System Student

- Major in Business Analytics

- Previously did an internship that was doing industrial research and writing articles

How did I meet URA

- I did my FYP with Sean last year
- Where we tried to produce urban forms using GenAI

What it felt like starting

What I got to do at URA

- CX Assistant
- DMP Assistant

Welcome to the CORENET X Assistant (Beta)

> Thank you for participating in our beta.

> We are constantly improving our chat assistant. If you have a minute to spare, we'd love to get your feedback here.

> Your feedback will help us improve the platform for a wider release in Q4 2025.

Does structural checks...

occur before access checks are done? What is the check sequence and hierachy of checks?

How can I submit...

my linked Revit models to CORENET X?

What would detect...

clashes between building piles with underground structures?

How can I modify...

my IFC4 standards to comply with IFC SG standards?

Send a message...

DMP Assistant

ast 7 days

nquiry at Bukit Timah — Draft
nquiry at Changi — Draft
nquiry at Bukit Timah — Draft
nquiry at Bukit Merah — ✓ Vetted
nquiry at Marine Parade — Draft
nquiry at Clementi — Draft

der

equest at NIL NIL B... — Replied
nquiry at SPOONE... — Replied
nquiry at BUKIT ME... — Replied
equest at Spottisw... — Replied
equest at 1 TIONG ... — Replied
nquiry at Holland P... — Replied
nquiry at Holland P... — Replied
nquiry at BUKIT TI... — Replied

1 Issue ✕ .com

Welcome to Drafting Assistant

Craft perfect emails with AI-powered assistance

[⟳ Refresh Headlines]   [📄 Comparison]

Possible Write-In Campaign detected — View Details

Today's Headlines | Overall Headlines | Evergreen Topics

Concerns Over Master Plan 2019 Revisions
Residents express dissatisfaction with the revised Master Plan 2019, citing issues such as increased dust, noise, and disruption from high-rise developments replacing planned

Preservation of Bukit Timah Saddle Club
Feedback emphasizes the importance of preserving Bukit Timah Saddle Club for its community, nature, and equestrian activities. Concerns are raised about potential

Ground-Up Initiative and Lorong Chencharu Concerns
Residents express concerns over the rezoning of Lorong Chencharu for residential use, emphasizing the importance of the Ground-Up Initiative for community engagement.
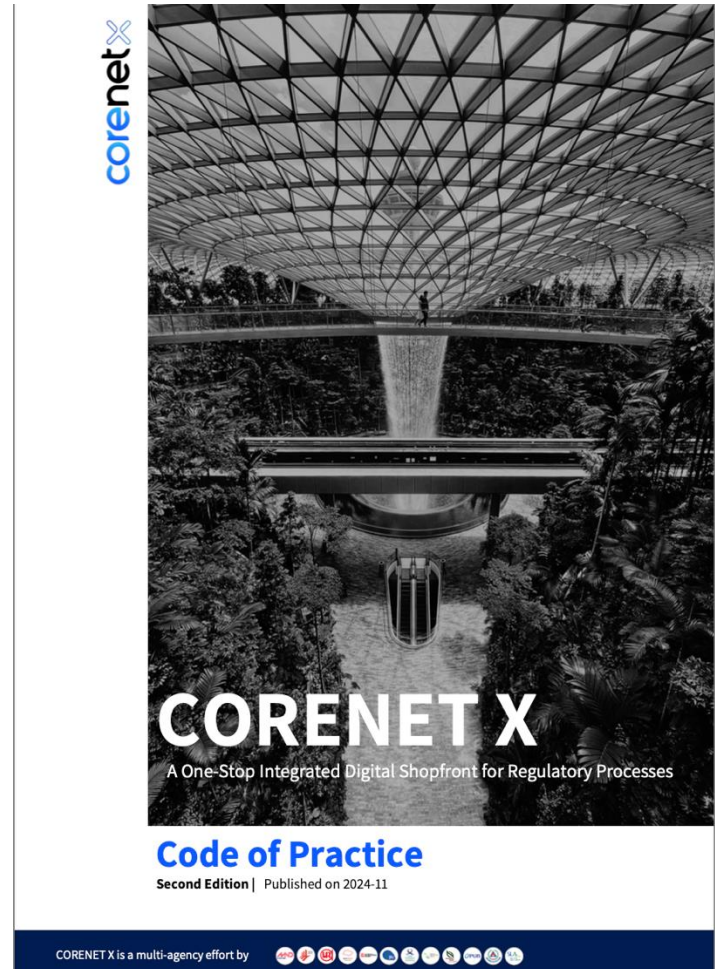
Concerns Over High-Density Developments
Feedback highlights concerns about high-density developments impacting traffic, noise,
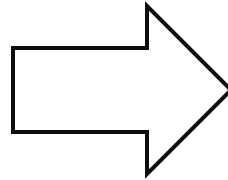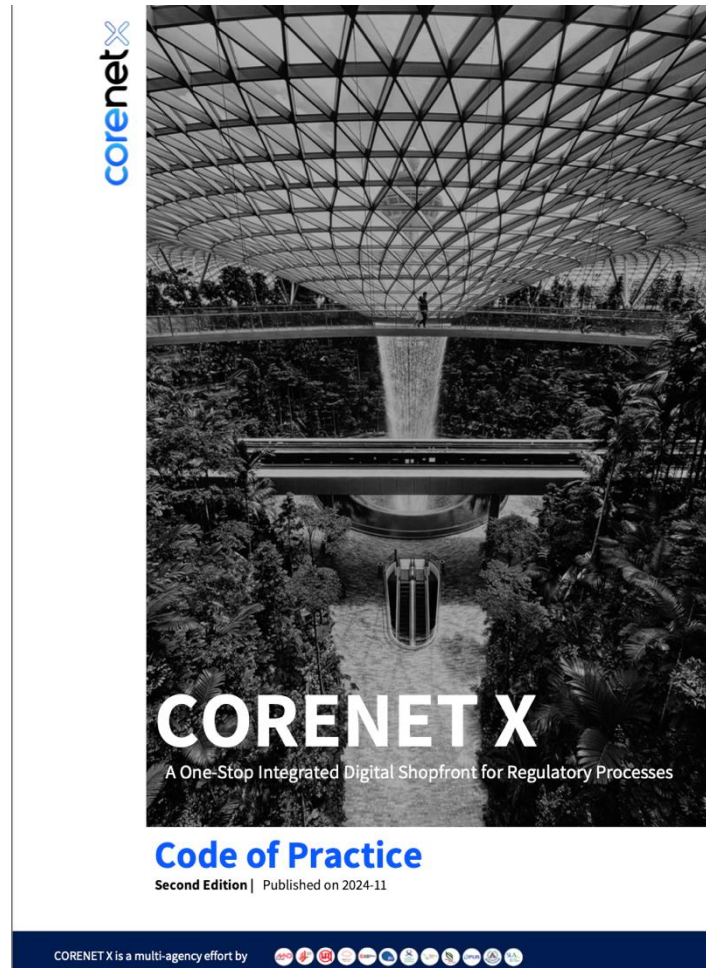
CX Assistant

Time-consuming

Complex

~ 300 pages

CX Assistant

- A one stop shop that could give you any information found on Corenet X PDF

- We want the information to be accurate

CX Assistant

- Gemini 2.0 Flash (Web Search)

Gemini 2.0 Flash   Private   Guest

What would detect clashes between building piles with underground structures?

Clash detection within a Building Information Model (BIM) can detect clashes between building piles and underground structures.

Here's how it works:

1. **BIM and Clash Detection:** BIM is used to identify overlaps or interference between different elements from various disciplines (e.g., structural, architectural, mechanical). Clash detection is a core function of BIM.

2. **Process:** The models from different design teams are submitted to a coordinator who uses clash detection software to identify conflicts.

3. **Benefits:** Early clash detection helps to visualize, analyze, and fix issues before construction begins, reducing rework, minimizing waste, and keeping projects on time and within budget.

Gemini 2.0 Flash   Private   Guest

How should I submit my linked Revit models to CORENET X?

To submit your linked Revit models to CORENET X, you should bind the linked Revit models to the host model. After binding the linked models, submit the host model to CORENET X.
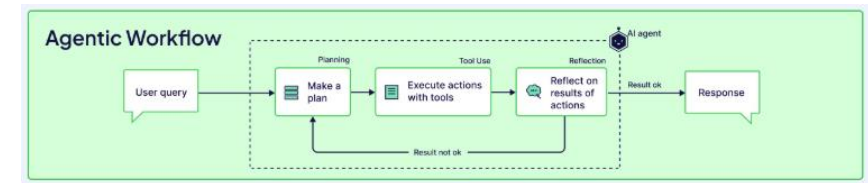
CX Assistant

GPT-4.1

- 1,047,576 context window
- 32,768 max output tokens
- Jun 01, 2024 knowledge cutoff

- More input/ouput tokens
- Long context
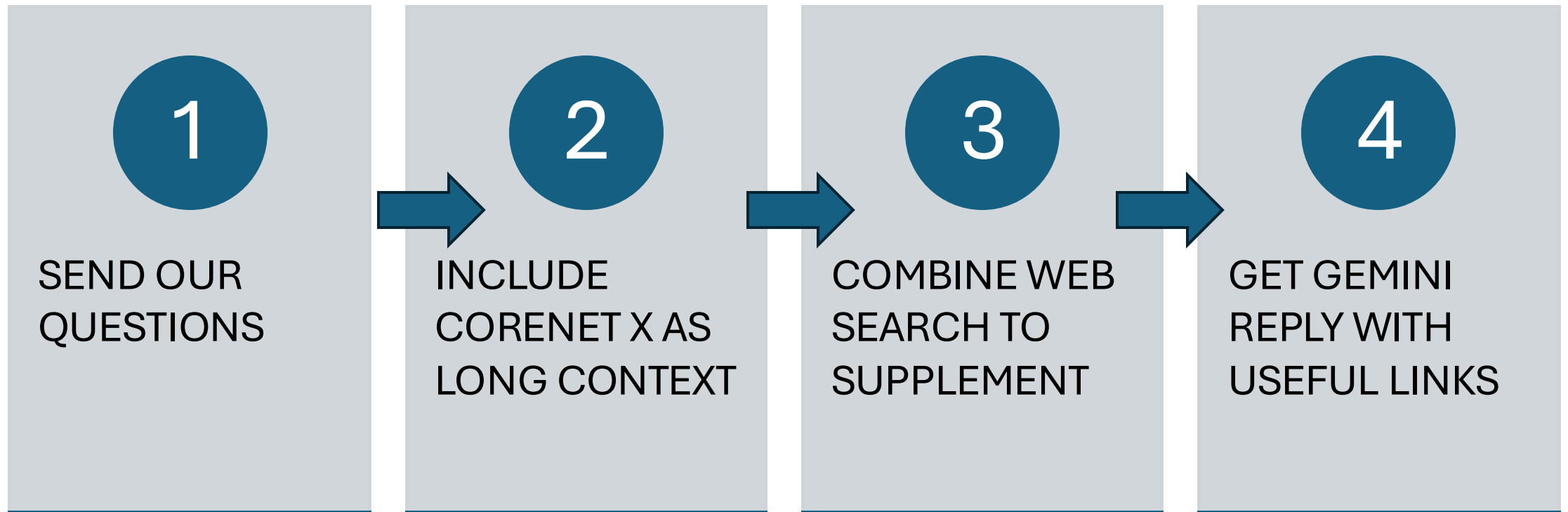

Gemini

- Better reasoning
- Web grounding

Agentic Workflow

- Agentic Workflow

Demo

- Long Context + Web Search (Gemini 2.5 pro)

- Web Search (Gemini 2.5 pro)

Response generation

1 SEND OUR QUESTIONS

2 INCLUDE CORENET X AS LONG CONTEXT

3 COMBINE WEB SEARCH TO SUPPLEMENT

4 GET GEMINI REPLY WITH USEFUL LINKS

CX Assistant

Long Context	Web Search	Long Context + Web search
Take in the whole PDF as context	Sources from the web so response is fast	PDF + web search
Able to point you to the pages in the PDF	Possible to retrieve relevant links	Links and page number are accurate
Longer time to get response & costly	May throw links that don't exist	Longer time to get response & costly

CX Assistant

Introducing GPT-4.1 in the API

- Long context
- Takes too long for response

Gemini 2.0

- Long context
- Short response
- Broken links

Gemini 2.5

- Long context + web grounding
- Accurate results
- Faster than 4.1

CX Assistant (future works)
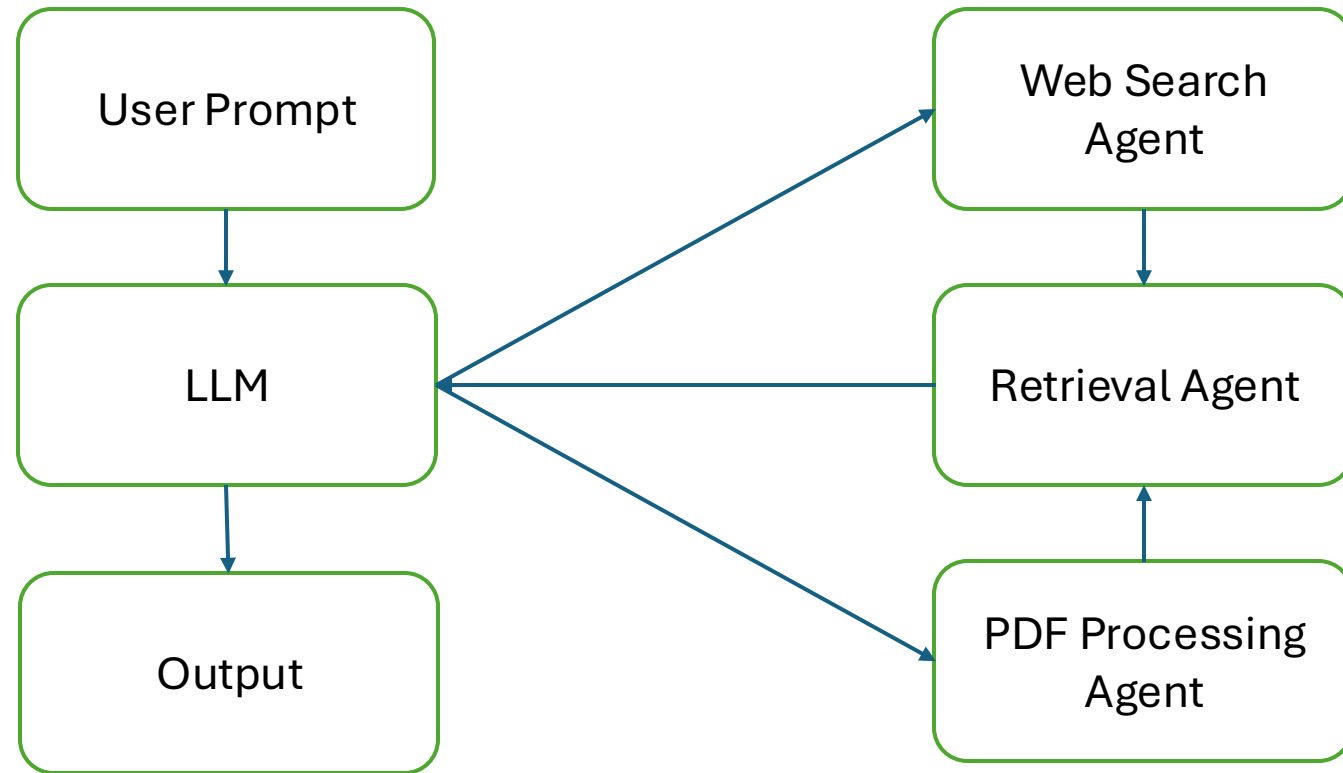
Agentic Tool Workflow

DMP Assistant

- To tackle large amount of feedback and emails that would come in after DMP is announced
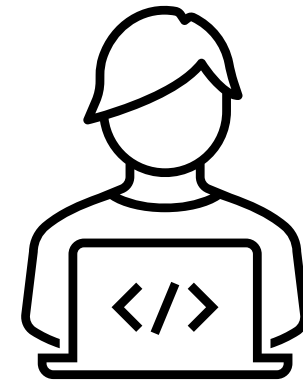
DMP Assistant

Feedback Analysis Tool	Topic Classification
	Sentiment Analysis
	Write-In Campaign Detection
AI Drafting Assistant	Past Replies
	House Style & FAQs
Personalised Editing	Notion-like Editor
	Write with AI

Drafter + Analytics Tool

DMP Assistant

- Integrated DMP19 emails for context & related emails

- Tested different methods for better headlines generation & topic prevalence % (Prompting vs Clustering)

Demo (Updates)

- Regenerate Headlines
- Compare Headlines of different dates
- View related emails of the headlines
- Related emails of draft are from DMP19
- Copy and Paste formatted draft into Outlook

DMP Assistant

Inconsistent percentage

Headlines generation

WE EMBED OUR EMAIL RECORDS

DBSCAN TO CLUSTER THEM

CALCULATE THE NUMBER OF RECORDS IN EACH CLUSTER

GENERATE HEADLINES BASED ON THE RECORDS IN EACH CLUSTER
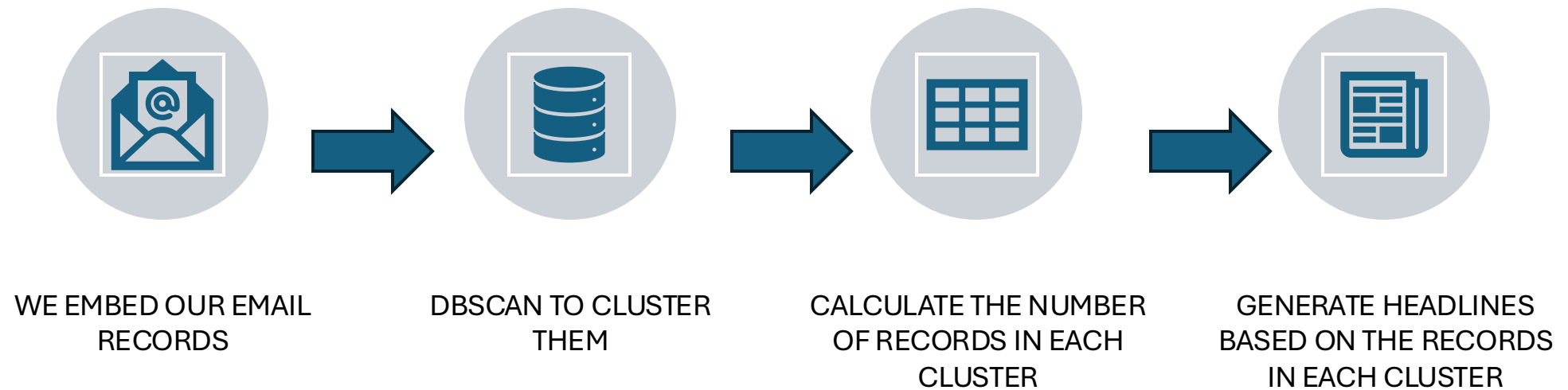
DMP Assistant

	Prompting	**K-Means**	**DBSCAN**
Method	Prompting	Centroid-based	Density-based
Number of clusters	Based on prompts	Must be specified in advance	Determined automatically by data density
Result	Hallucinates	Too sparse to group	Based on number of points in an area

✖	✖	✔

DMP Assistant
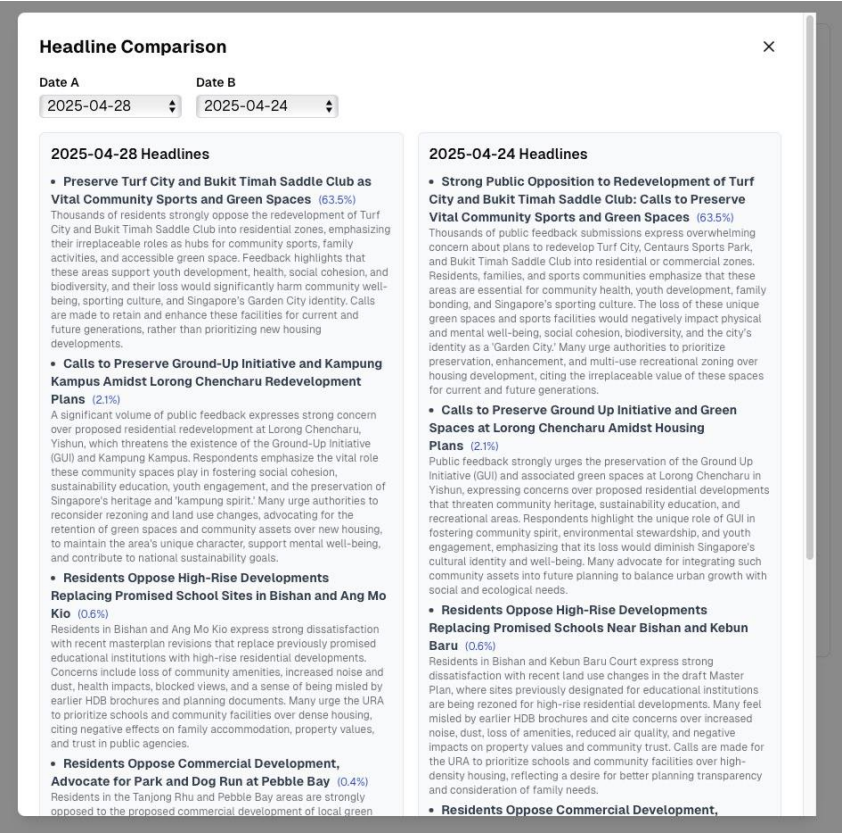
- The % was representative
- The numbers were consistent

What I have learned

What I have learned

April 14, 2025   Product   Research   Publication

Introducing GPT-4.1 in the API

What I have learned

Thank you