

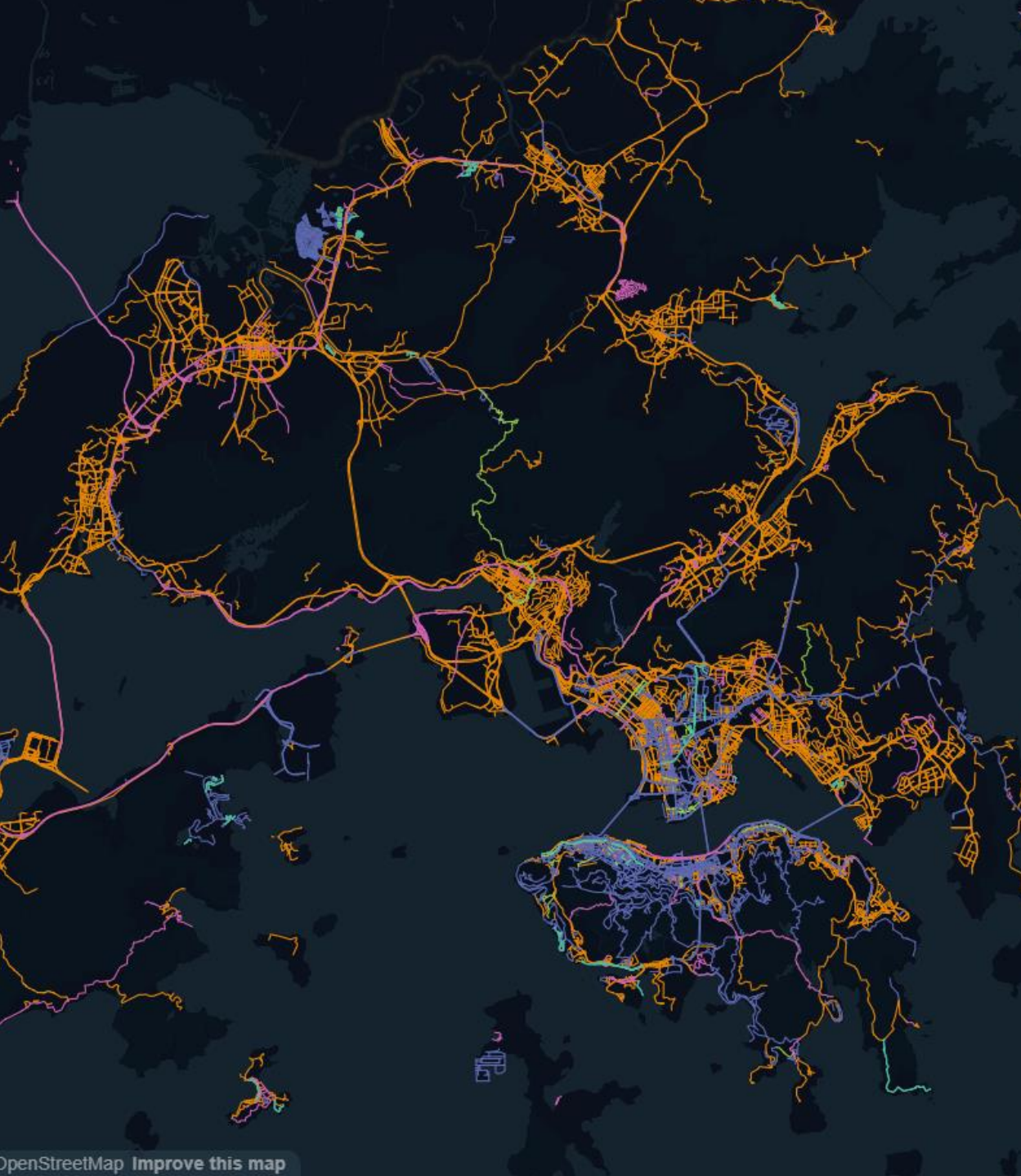
A photograph of a traditional Chinese courtyard. In the foreground, there is a large, dark, textured pond. In the background, there is a traditional Chinese building with a tiled roof and a courtyard. The text "Where Memory Meets Machine" is overlaid on the image in a large, white, serif font. Below it, the subtitle "Preserving Heritage in the Age of Gen AI" is overlaid in a smaller, white, italicized serif font.

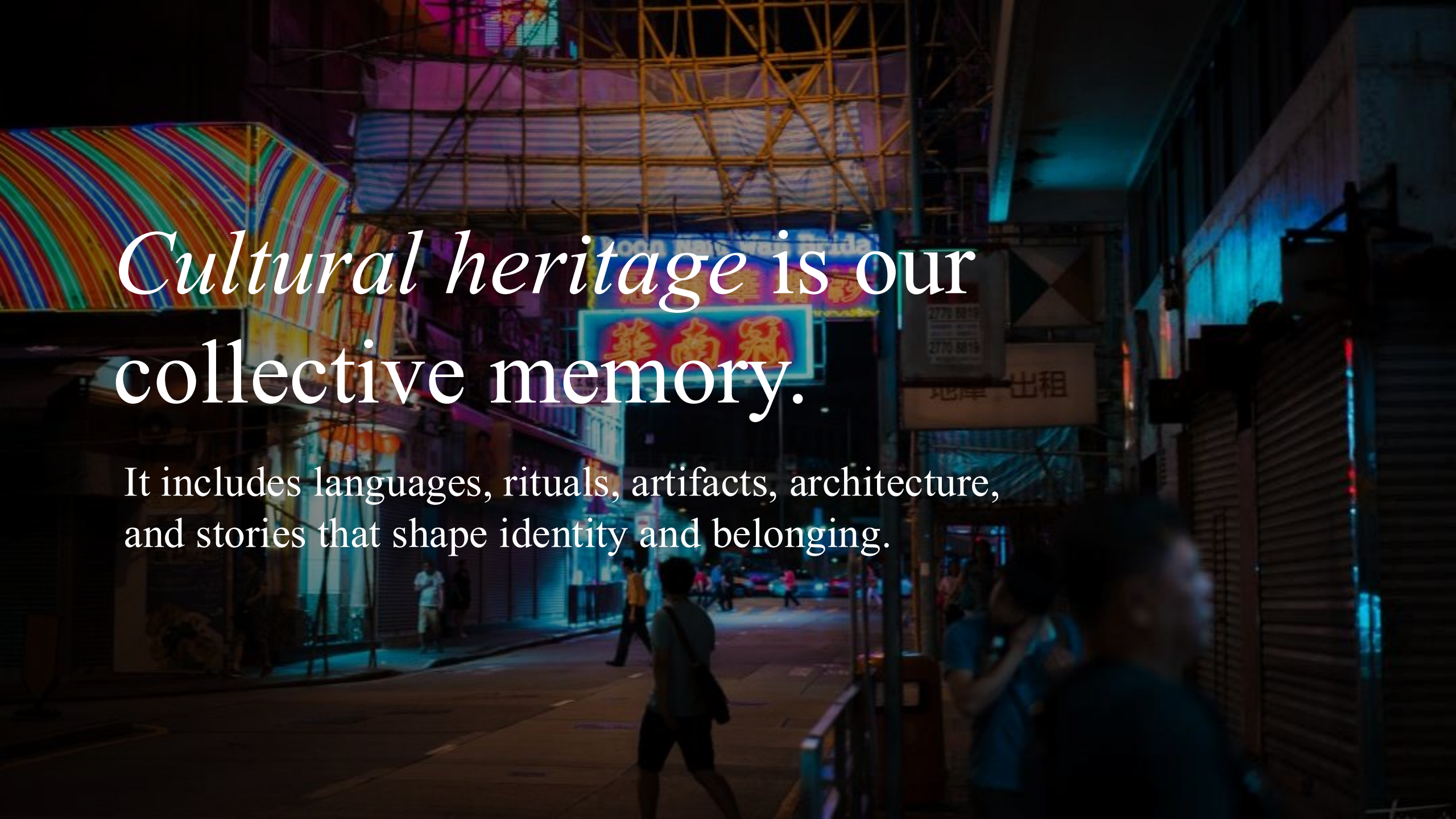
Where Memory Meets Machine

Preserving Heritage in the Age of Gen AI

Diana Pang

September 2025





Cultural heritage is our collective memory.

It includes languages, rituals, artifacts, architecture, and stories that shape identity and belonging.



Conflict



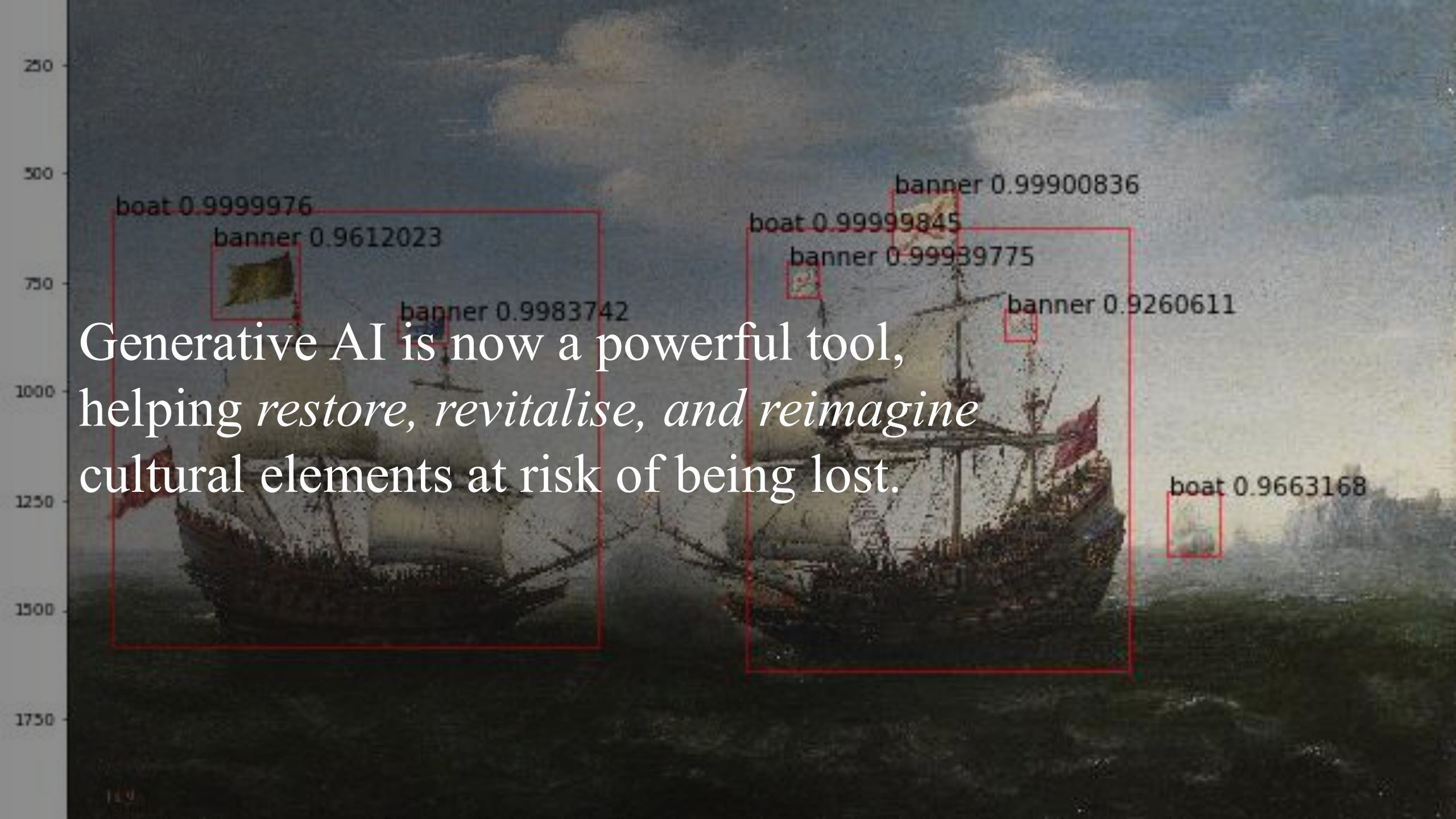
*Environmental
Degradation*



Passage of Time

A close-up photograph of a woman with dark hair, wearing a white lab coat and white earbuds, focused on measuring a piece of ancient, textured material. She is using a dial caliper. The material has a mottled appearance with circular patterns in shades of orange, brown, and grey. The text is overlaid on the left side of the image.

Preserving heritage has traditionally relied on detailed documentation, expert restoration, and community knowledge transfer.



Generative AI is now a powerful tool,
helping *restore, revitalise, and reimagine*
cultural elements at risk of being lost.

boat 0.9999976

banner 0.9612023

banner 0.9983742

banner 0.99900836

boat 0.99999845

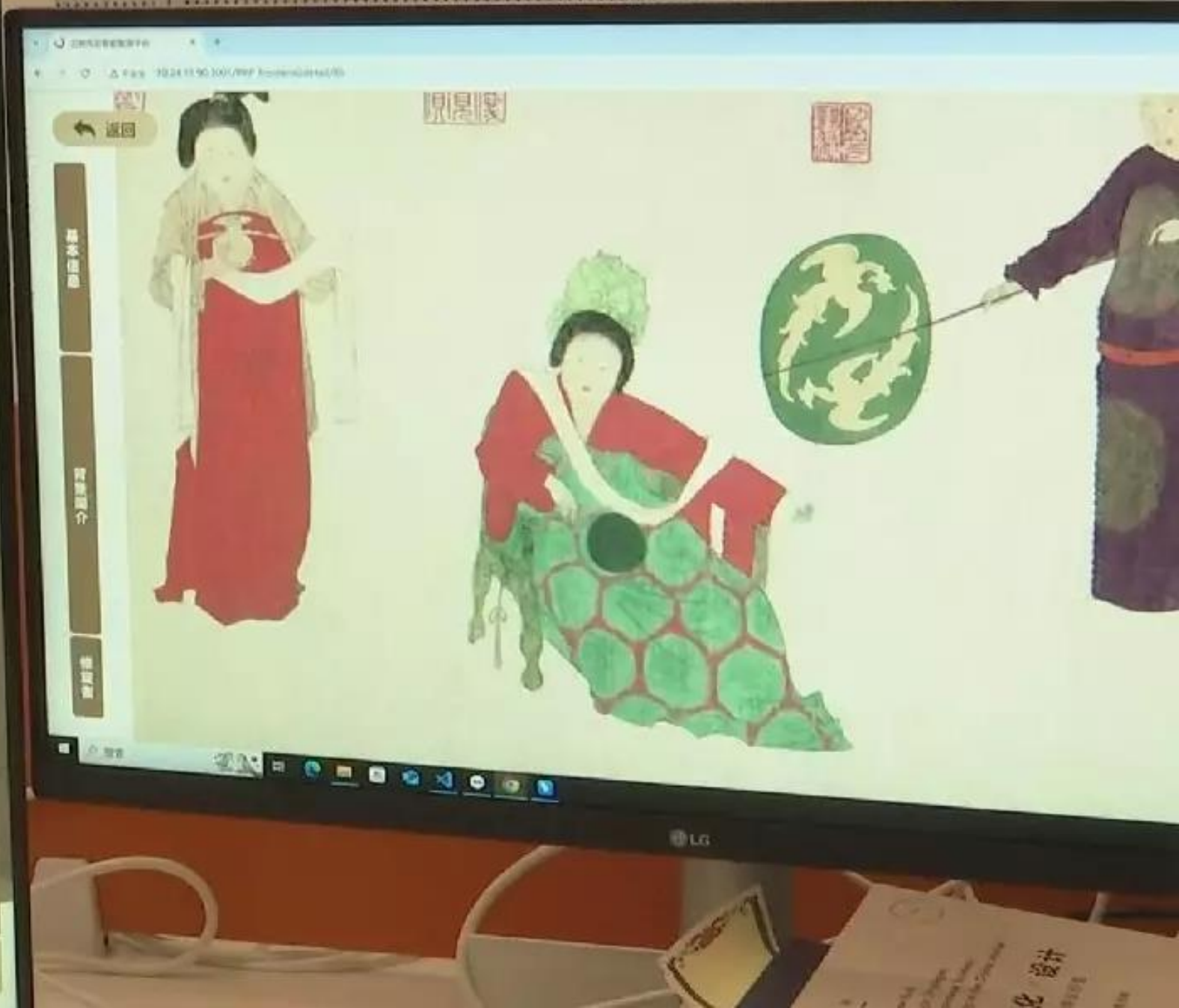
banner 0.99939775

banner 0.9260611

boat 0.9663168



Restore



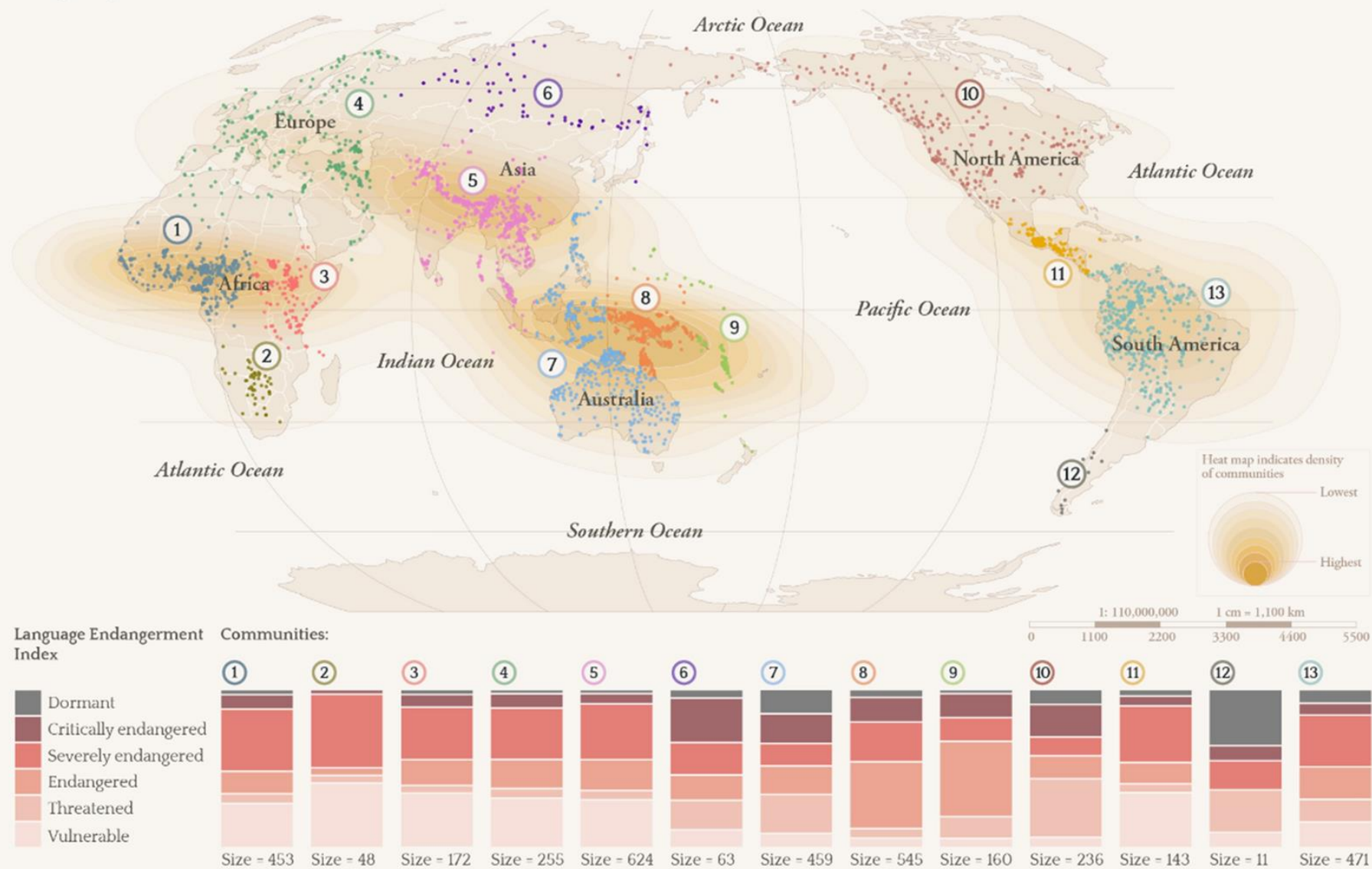


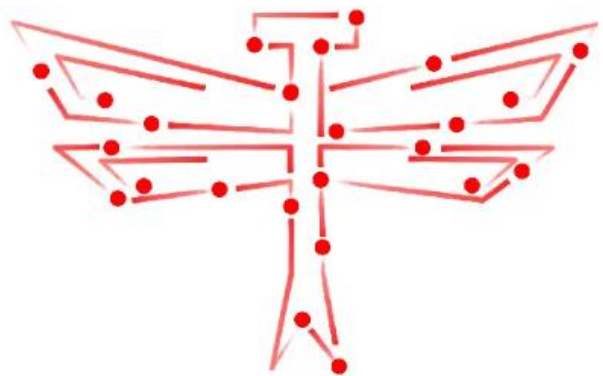




Revitalise

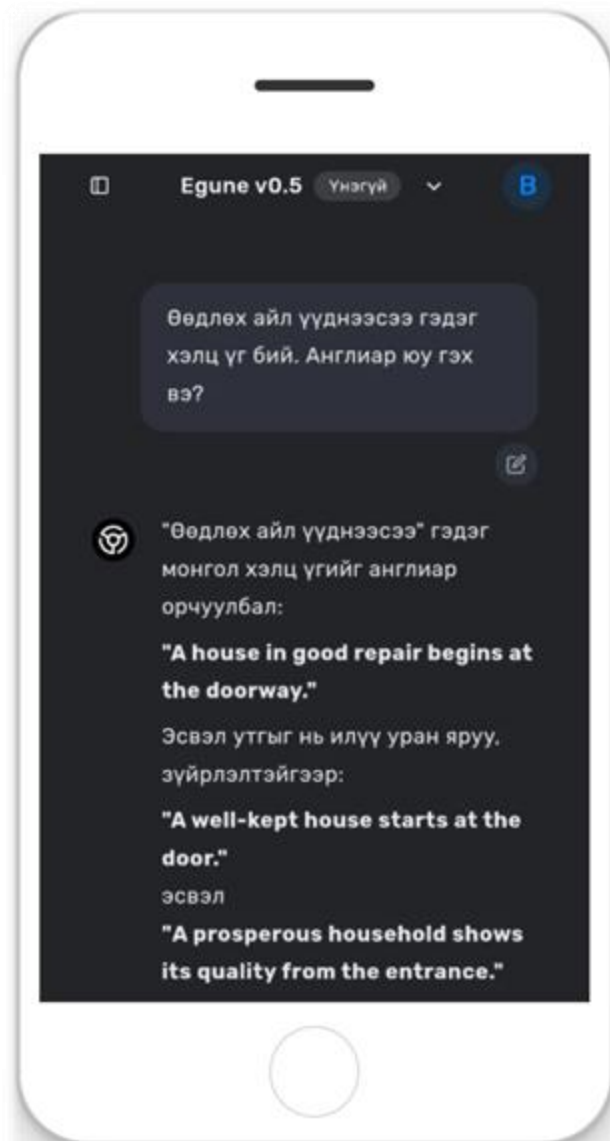
Community structure of endangered languages around the world





FLAIR







Reimagine



Google Arts & Culture

Self-Portrait

Vincent van Gogh, 1889

Musée d'Orsay, Paris



Google Arts & Culture

Girl with a Pearl Earring

Johannes Vermeer



Google Arts & Culture

Helmet with Tengu Mask and Crows

Japanese, 19th century

The Metropolitan Museum of Art

Penny from London (England)



Greetings, curious visitor! I'm a defaced penny from 1903 with a secret message stamped on my face: "VOTES FOR WOMEN." Can you believe I played a small role in the women's suffrage movement? Feel free to ask me about my unique story or the political climate of my time!

What inspired the message on your face?

Ah, the message on my face was born from the passionate fight for women's rights! You see, in the early 1900s, women were demanding the right to vote, and some clever suffragettes decided to use coins like me as tiny billboards for their cause. By stamping "VOTES FOR WOMEN" on my surface, they spread their message far and wide with every transaction. Isn't it fascinating

What was the outcome of their efforts?

Can you tell me about your journey to this museum?

What was daily life like in 1903?

What do you want to ask?

Show details

Inputs

- Historic artefacts (images, scans, metadata)
- Oral histories and languages
- Architectural plans / site maps
- Community knowledge and traditions
- Digitised archives
- Museum collections
- Open-source cultural datasets
- Expert annotations

Functions

Digitisation
Restoration
Reimagination
Translation & Revitalisation
Simulation & Modelling

Outputs

- Digital artefacts
- Interactive experiences
- Revived languages
- Enhanced accessibility
- Preservation archives
- ... and many more!

A close-up photograph of a person's hand holding a small, spiral-shaped object. The object has alternating orange and white stripes, resembling a nautilus shell or a piece of candy. The hand is positioned with the palm facing upwards, and the fingers are slightly curled around the object. The background is a dark, textured teal color. The lighting is soft, highlighting the textures of the skin and the object.

...but it's not all smooth sailing.

Bias, misrepresentation, and cultural sensitivity are real concerns.

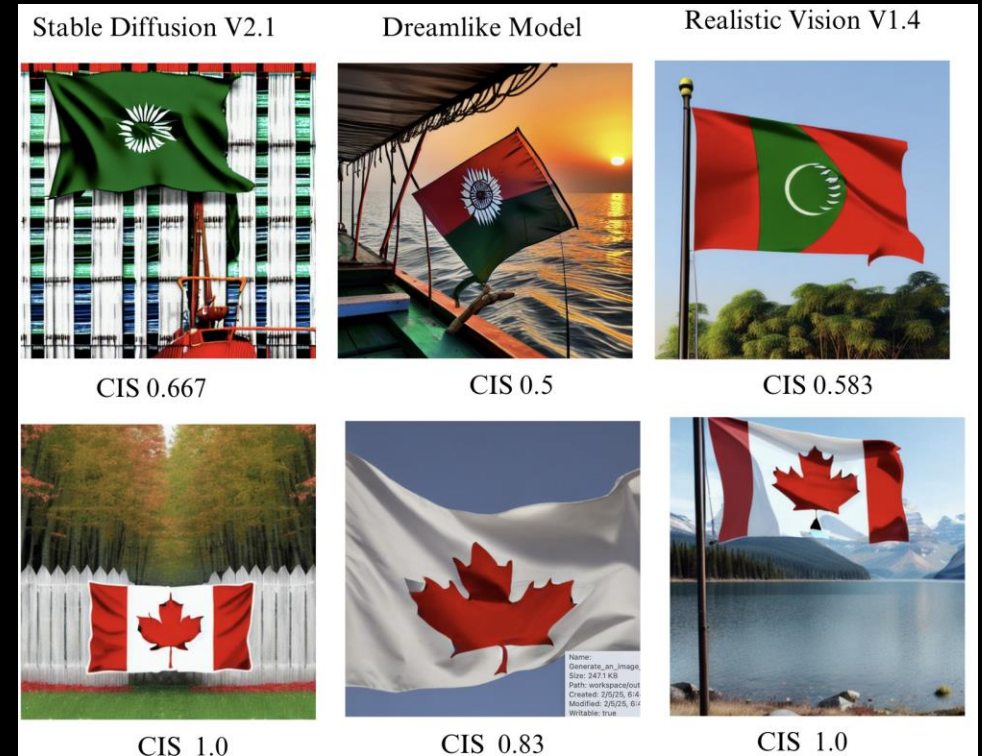
Bias and Misrepresentation

If the dataset's skewed, the output might distort traditions or reinforce stereotypes.

Some even produce “hyperreal” fakes that look authentic but aren't.

What to do about it?

- ✓ Diverse training data
- ✓ Cultural expert review
- ✓ Clear labelling of AI-generated content



AI models generated a Canadian flag on a boat accurately, but struggled with a Bangladeshi flag on a fishing boat, missing cultural details.

This shows bias in training data and highlights the need for inclusive datasets and cultural evaluation.

Cultural Sensitivity and Appropriation

Some heritage is sacred or sensitive and not meant to be recreated or shared freely.

AI might accidentally generate restricted content or misrepresent traditions.

What to do about it?

- ✓ Community-led boundaries
- ✓ Respectful collaboration
- ✓ Cultural filters or licences
- ✓ Clear guidance from cultural leaders



Mala Puta, located at Uluru in Australia's Northern Territory, is a sacred Anangu women's site protected under Tjukurpa, the traditional law of the Anangu people. Cultural knowledge here is passed down orally, with stories considered family inheritance and held with deep responsibility. Viewing or sharing images of the site outside its original context is considered inappropriate.

In this setting, generative AI raises serious questions: What happens when sacred stories or visuals are scraped into training data? Can AI respect boundaries it doesn't understand?

Data Ownership and Consent

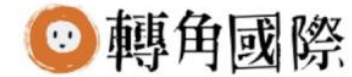
AI needs data but who owns the songs, images, and stories it's trained on?

If it's cultural heritage, communities should have a say. Without consent, AI risks becoming a new form of extraction.

What to do about it?

- ✓ Informed consent
- ✓ Indigenous Data Sovereignty
- ✓ Benefit-sharing
- ✓ Cultural IP rights

Source: <https://policyoptions.irpp.org/2025/05/ai-indigenous-data/>



大AI時代的楓葉國：加拿大倡議原住民族權益，同時強化AI競爭力

2025/02/10 DSET民主治理組



Tu Yun-Pu
DSET Non-Resident Fellow

DSET Op-ed on UDN Global shows that Taiwan's AI Policy Can Learn from Canada's Inclusion of Indigenous Perspectives——

"Taiwan can learn from Canada, which not only prioritizes technological innovation and regulation but also ensures Indigenous perspectives are included, fostering a more inclusive and ethically conscious AI development model."

Canada's leadership in Indigenous data sovereignty has long served as a reference point for Indigenous advocacy in Taiwan where Indigenous Peoples make up roughly 2.5 per cent of the population.

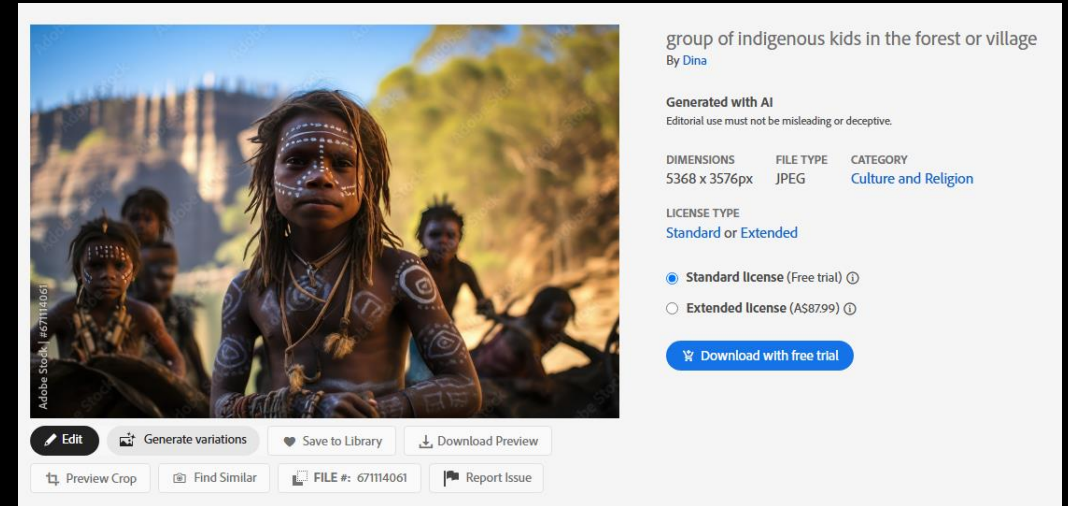
Both geographies are wrestling with similar questions: How can Indigenous communities assert control over their data, shape AI development and preserve cultural integrity in the face of digital transformation?

Authenticity and Trust

AI can recreate heritage but does that make it real?
If it looks convincing, people might trust it too much. Subtle errors can spread as “truth,” and human skills may fade if we rely on AI too much.

What to do about it?

- ✓ Use AI to support, not replace, human interpretation
- ✓ Be transparent about what's AI-generated
- ✓ Keep cultural practitioners at the centre



A review of Adobe Stock found numerous AI-generated images labelled as Indigenous Australians, many of which do not resemble Aboriginal and Torres Strait Islander people.

These images also feature random markings that have no cultural or clan significance, raising concerns about authenticity and consultation.

Traditional body markings in Indigenous cultures are specific to tribal groups, yet the AI-generated images appear to apply them in a generic and inaccurate manner.

The background is a solid black field overlaid with a complex, organic pattern of thin, light gray lines. These lines form a grid-like structure, but the intersections and segments are irregular and wavy, creating a sense of fluidity and depth. The overall effect is reminiscent of a distorted or vibrating grid.

What about Hong Kong?

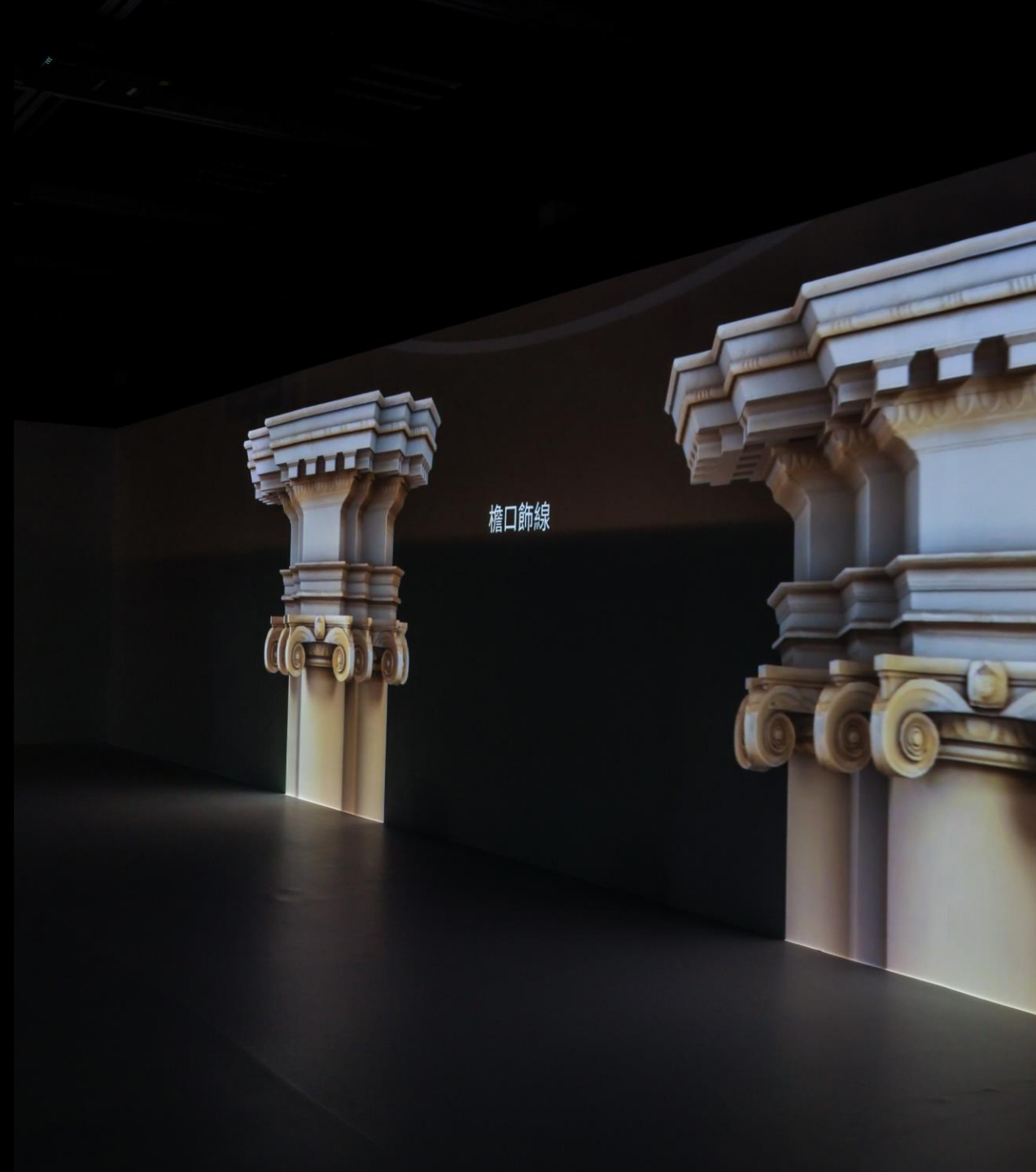
Social

- Gentrification and redevelopment often displace communities and traditions, leading to loss of intangible heritage.
- Some heritage assets are tied to colonial history, creating ambivalence or resistance around preservation.
- Heritage decisions are often top-down, with minimal input from local stakeholders or indigenous groups.



Technological

- AR/VR, 3D scanning, and GIS mapping are not widely adopted for heritage education or conservation.
- Many historical records, oral histories, and architectural plans remain inaccessible or poorly catalogued.
- Few professionals are trained in heritage tech applications or traditional restoration techniques.



Economic

- Developers and policymakers often favour demolition or redevelopment over preservation.
- Restoration projects struggle with budget constraints, especially for non-monument sites.
- Heritage preservation is often seen as a cost centre rather than a value-generating asset.



Environmental

- Coastal and hillside heritage sites face risks from typhoons, humidity, and erosion.
- Natural-cultural landscapes (e.g. feng shui woods, village ponds) are often excluded from preservation efforts.
- Heritage conservation is rarely aligned with broader environmental or regenerative urban planning.



Political

- Only declared monuments have robust safeguards; graded buildings can still be demolished.
- Heritage policies may conflict with urban renewal or infrastructure development plans.
- Fragmented responsibilities across government departments (e.g. Antiquities and Monuments Office vs. Urban Renewal Authority).
- Incompatible zoning laws that don't support adaptive reuse of heritage buildings.



*What has been done in this space
in Hong Kong?*



1920s
2025

@OldHKinColour
Central Waterfront
中環海濱



佑寧堂 Union Chapel (... 105 0 0



雍仁會館 Zetland Hall (1... 69 0 0



山頂酒店 Peak Hotel (18... 57 0 0



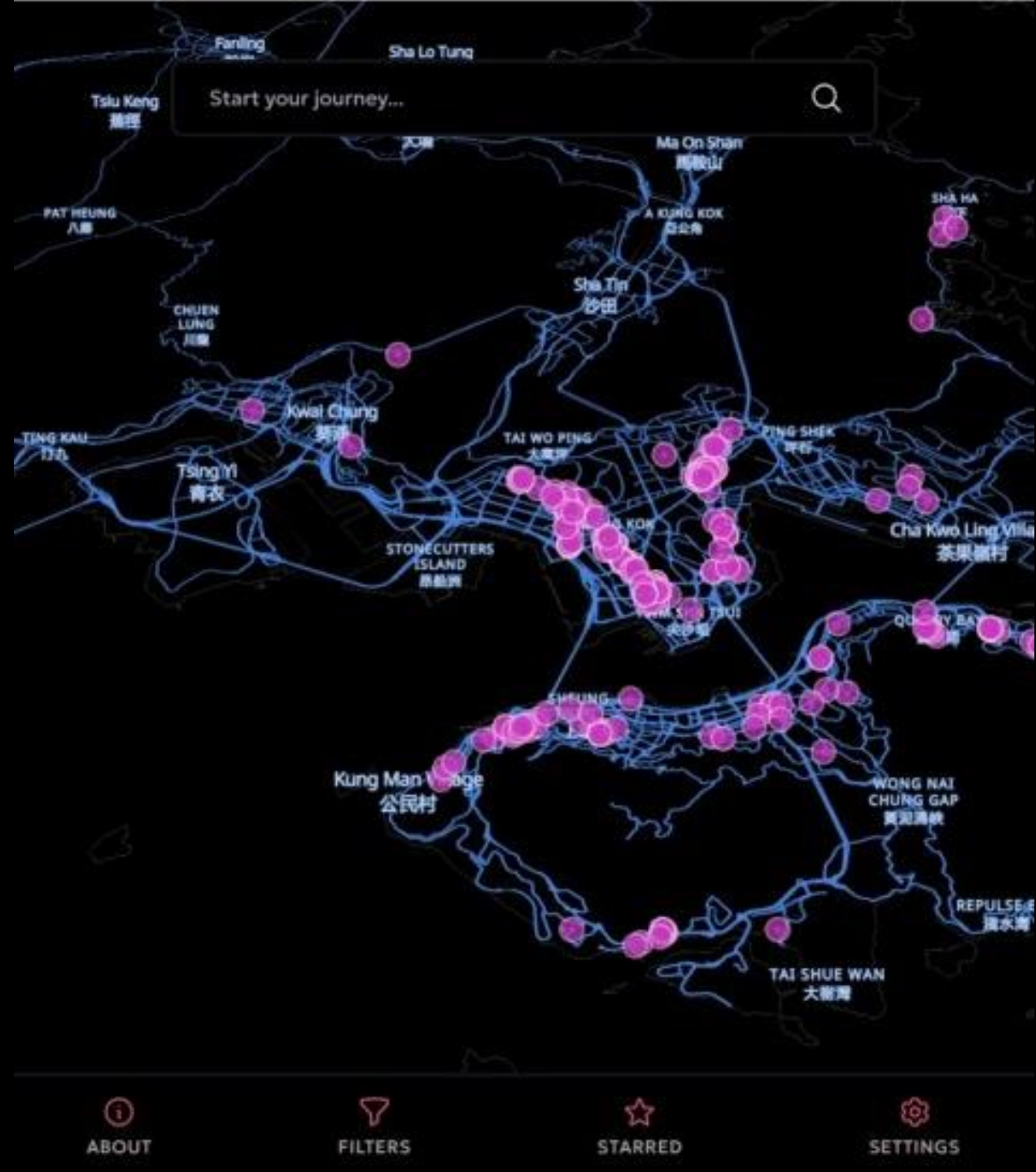
大坑蓮花宮 Lin Fa Templ... 47 0 0

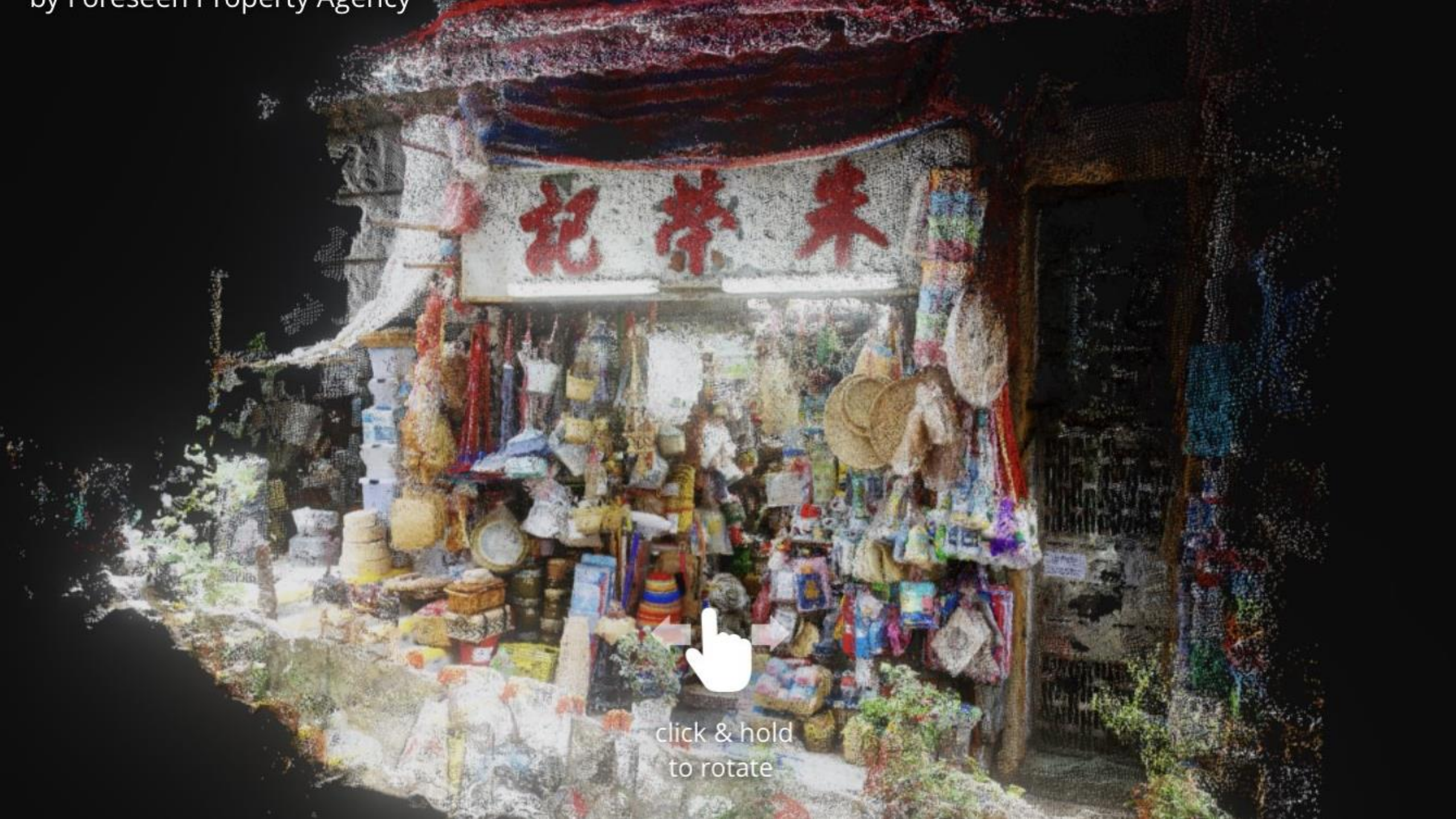


跑馬地萬松坊 Man Cheu... 53 0 0



畢打街鐘樓 Pedder Stre... 48 0 0





click & hold
to rotate

Time for you to explore!



THE WHAT AND WHY

Understand the Challenge (5 mins):

Think about a specific cultural heritage issue

(e.g. endangered languages, deteriorating buildings, forgotten rituals).

- What makes it hard to preserve or revitalise?



The Community (5 mins):

Think about the people and communities connected to this issue.

- Who is affected?
- Who benefits?
- Who holds the knowledge?

Explore GenAI Possibilities (5 mins):

How might GenAI help address this pain point? Think creatively!

- What kind of data would you need?
- What ethical or cultural considerations should be kept in mind?

It's your turn! (5 mins):

- GenAI use case you'd like to explore more?
- Surprising data gaps you've discovered?
- Questions you want to investigate further?



Resources

NEON SIGNS / OLD SIGNS

[Crowdsourced neon sign archive \(M+\)](#)

[Hong Kong Neon Archive \(PolyU\)](#)

[Ghost Signs documentation project](#)

DIGITALISATION

[AI-colourised historic HK](#)

[3D models of old Hong Kong](#)

[Futurist archive of restoration shops](#)

LANGUAGES

[Nature article on Tanka language](#)

[Linguistic diversity storytelling archive \(CUHK\)](#)

[Macanese Patois – Wikipedia](#)

[SCMP article on Macau's creole language](#)

OLD MAPS & PHOTOS

[Old HK Maps](#)

[Old HK photos \(Gwulo\)](#)

[HPC Bristol – Hong Kong](#)

[HK Gov Photo Store](#)

ARCHIVE

[Hong Kong Archives Society](#)

[Pre-WWII government document archive \(HKU\)](#)

[The National Archive \(UK\)](#)

HERITAGE

[Official graded heritage site listings \(AMO\)](#)

[HK Intangible Cultural Heritage Database \(HKICHDB\)](#)



Find me on
<https://www.linkedin.com/in/diana-pang>
if you have any questions!

廣

東

話