Research background

Project1:Recording, identifying, and cataloguing **flaws in 3D scanning.**
Project2: How these flaws（usually seen as negative）might actually carry **meaningful information**.

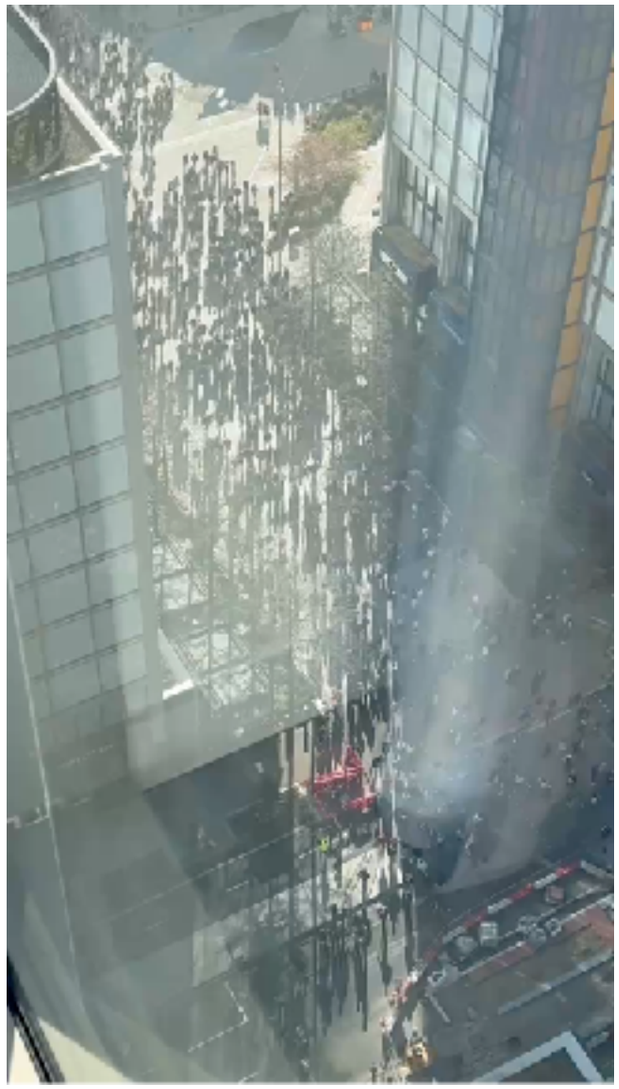
Research background

Motion Artifacts

Whenever moving people or objects are captured during scanning, motion artifacts appear, resulting in ghost-like remnants in the data. Typically, motion artifacts in 3D scanning manifest as streaking, blurring, or partial meshes, disrupting an otherwise static environment. As the scanner rotates and collects points, it assumes the scene is stationary; if an object (or person) moves, the collected points for that object are scattered or duplicated along its path of motion.

Motion Artifacts: **Human movement, motion, presence.**
When moving people are captured during scanning, glitches (blurs, streaks, or distortions - defects) appear.

Specific scenario



Changing context:
Can they serve as meaningful traces of spatial movement and human behaviour in **maps or Google Street View**?

Specific scenario

Street View shows static images — buildings, few people.

With 3D scanning, we capture real movement: **direction, speed, and crowd density**.

New spatial cognition dimension

The glitches form **patterns** — like Z-shapes or broken layers that reveal how space is used.

Seen from above, they become a new data layer, showing **Population density, spatial activity, and spatial attributes.**

Reference： Made in tokyo

“zoom back” approach — looking at the city as a whole, not just individual buildings.
They observe architecture through **photos**, **drawings**, **maps**, **nicknames**, and **text**, focusing on three key traits: **category**, **structure**, and **use**. If a building can’t be clearly defined, they call it **“Da-me Architecture”** — buildings outside conventional categories.

I plan to analyse the flow of people scanned in 3D from three dimensions: **speed, density, and trajectory**.
This shifts the focus from **space and technology** to **people and their movements** — how they **occupy**, **disrupt**, and **reshape** public space.

Like the book’s taxonomy for hybrid buildings, I use glitch patterns as visual evidence of how space is repurposed through use.

Investigation - Location selection（draft）

Focus on the **cultural function** of space

1. Local Scale (Neighbourhood-specific cultural)

① **Brick Lane** – Brick Lane Market (local cultural identity; vibrant pedestrian traffic, street activities)
② **Shoreditch** – Boxpark Shoreditch (local urban trendiness; pedestrian hangout, casual interactions)

2. City-wide Scale (Urban nodes significant at a metropolitan level)

① **City of London – Bank Junction** (financial hub; intensive pedestrian movement, high-density flows)
② **Southbank – London Waterloo Station** (transportation and cultural node; intermixing tourists and locals)

3. National Scale (Locations of symbolic or cultural significance at a national level)

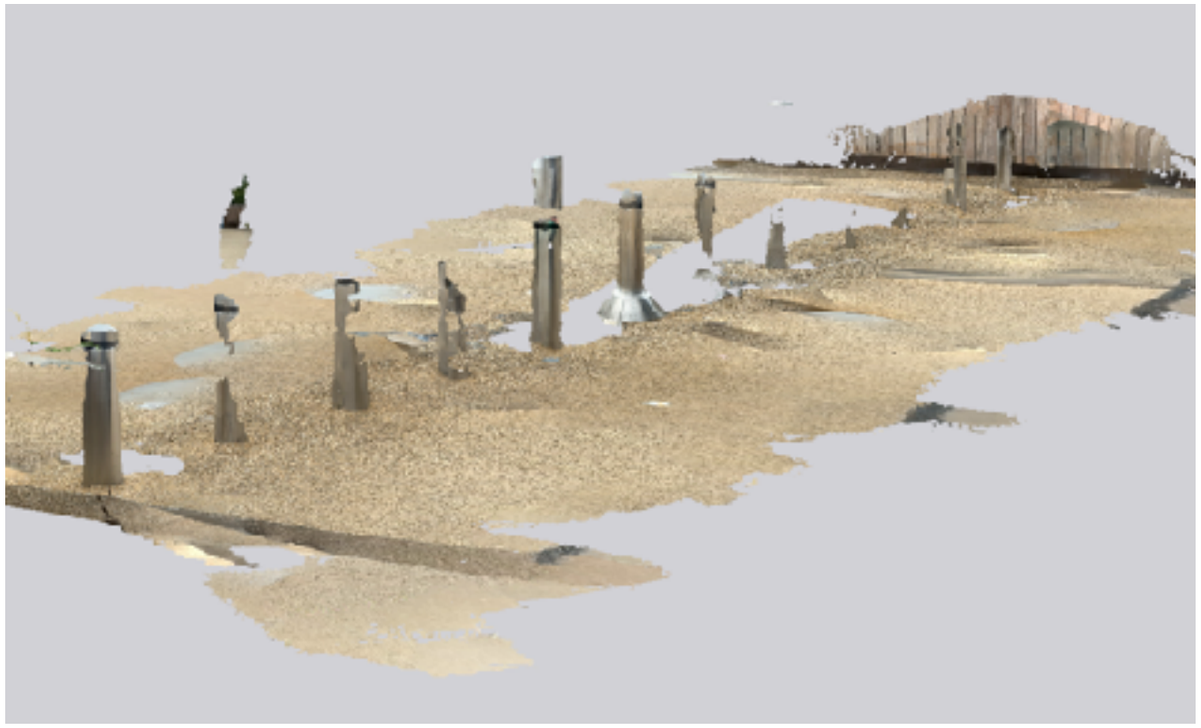
① **Stratford – Queen Elizabeth Olympic Park** (national legacy site; cultural memory, large-scale events)
② **Westminster** – Palace of Westminster (UK Parliament) (national political heart; symbolic demonstrations)

4. Global Scale (Urban spaces/buildings with global cultural/economic resonance)

① **Canary Wharf** – Canary Wharf Financial District (global financial center; multinational business flows)
② **Canada Water** – Canada Water Masterplan Area (global urban regeneration; diverse cultural influx)

Investigation - Olympic park

Investigation - Olympic park



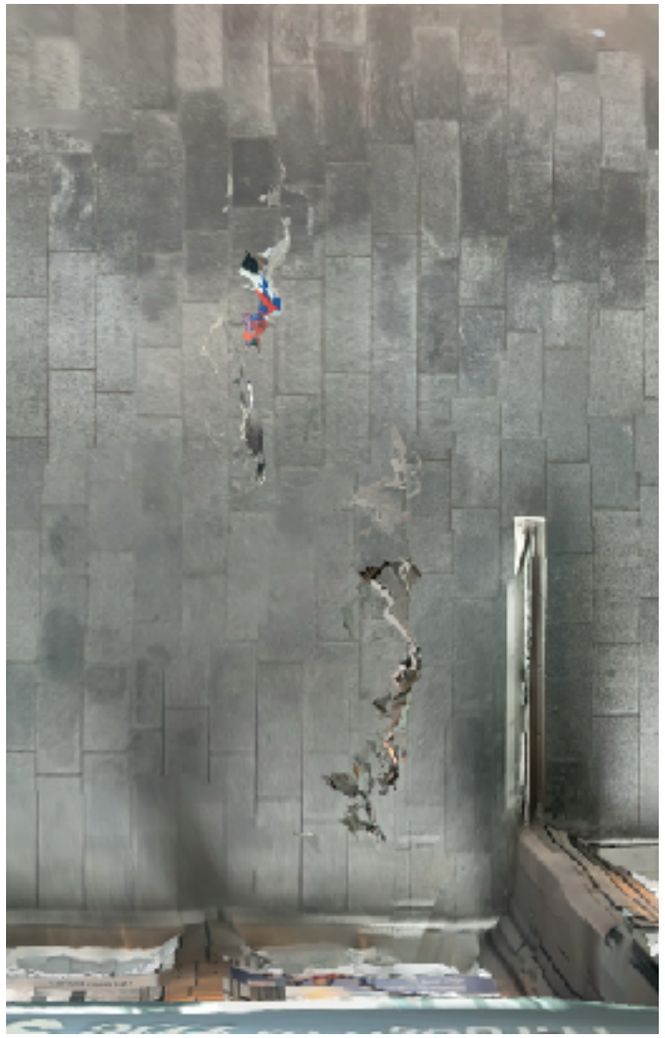
The public area is too large for me to focus on, but this better represents human activity.
The entrance area adds restrictions in terms of range for 3D scanning, but the direction is single.

Density

more and less

Speed

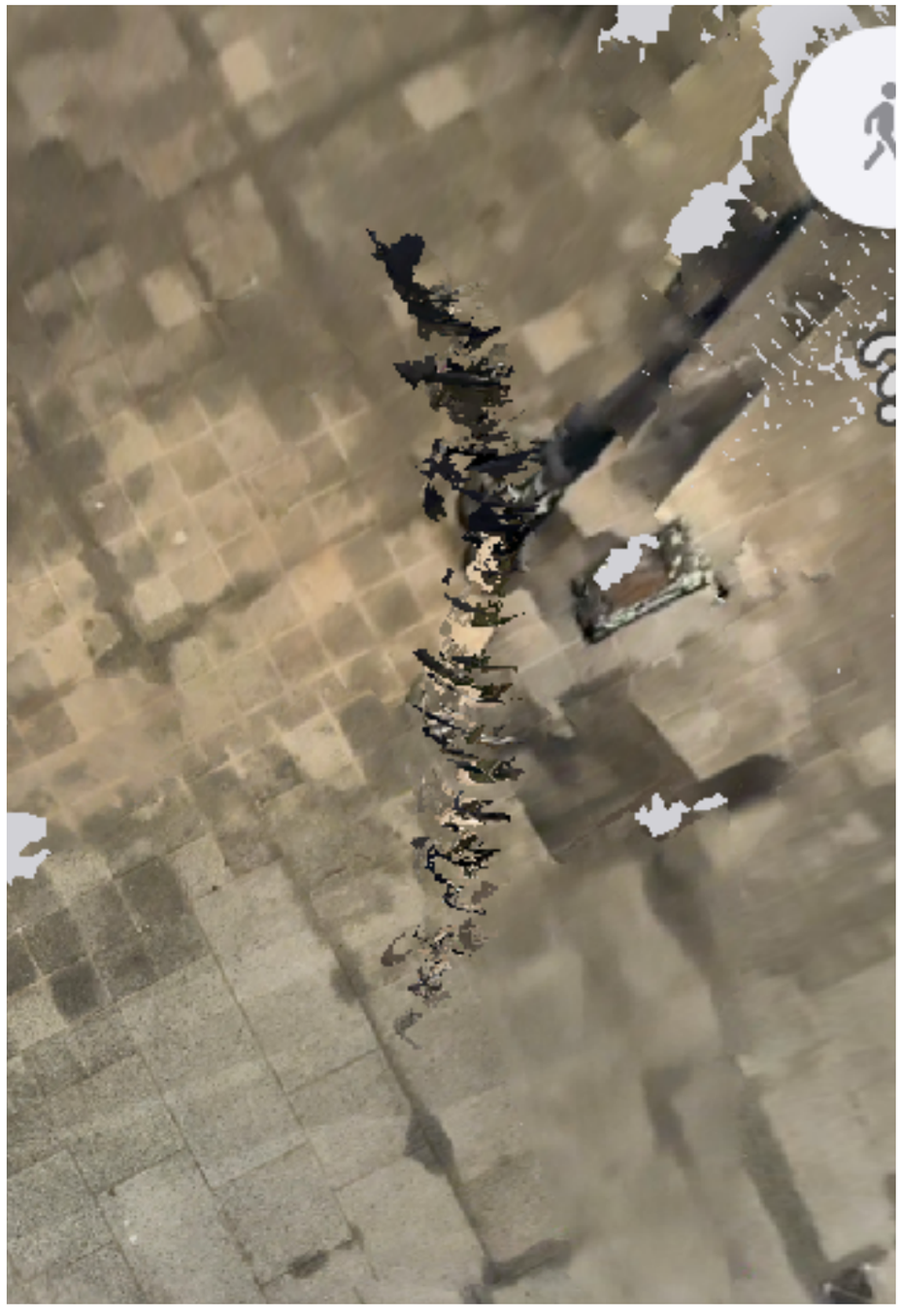
human shapes

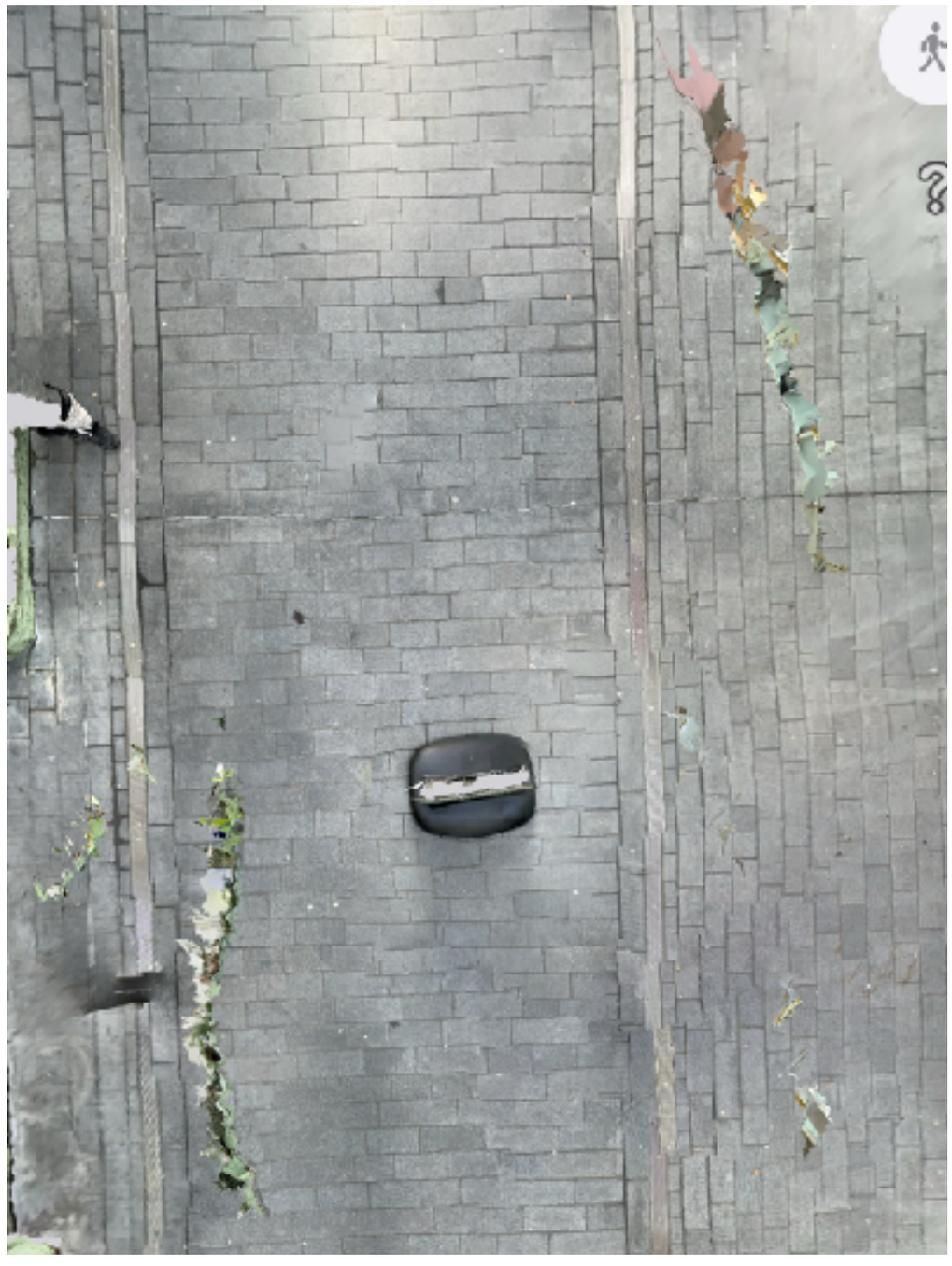


continuous patterns

fragments

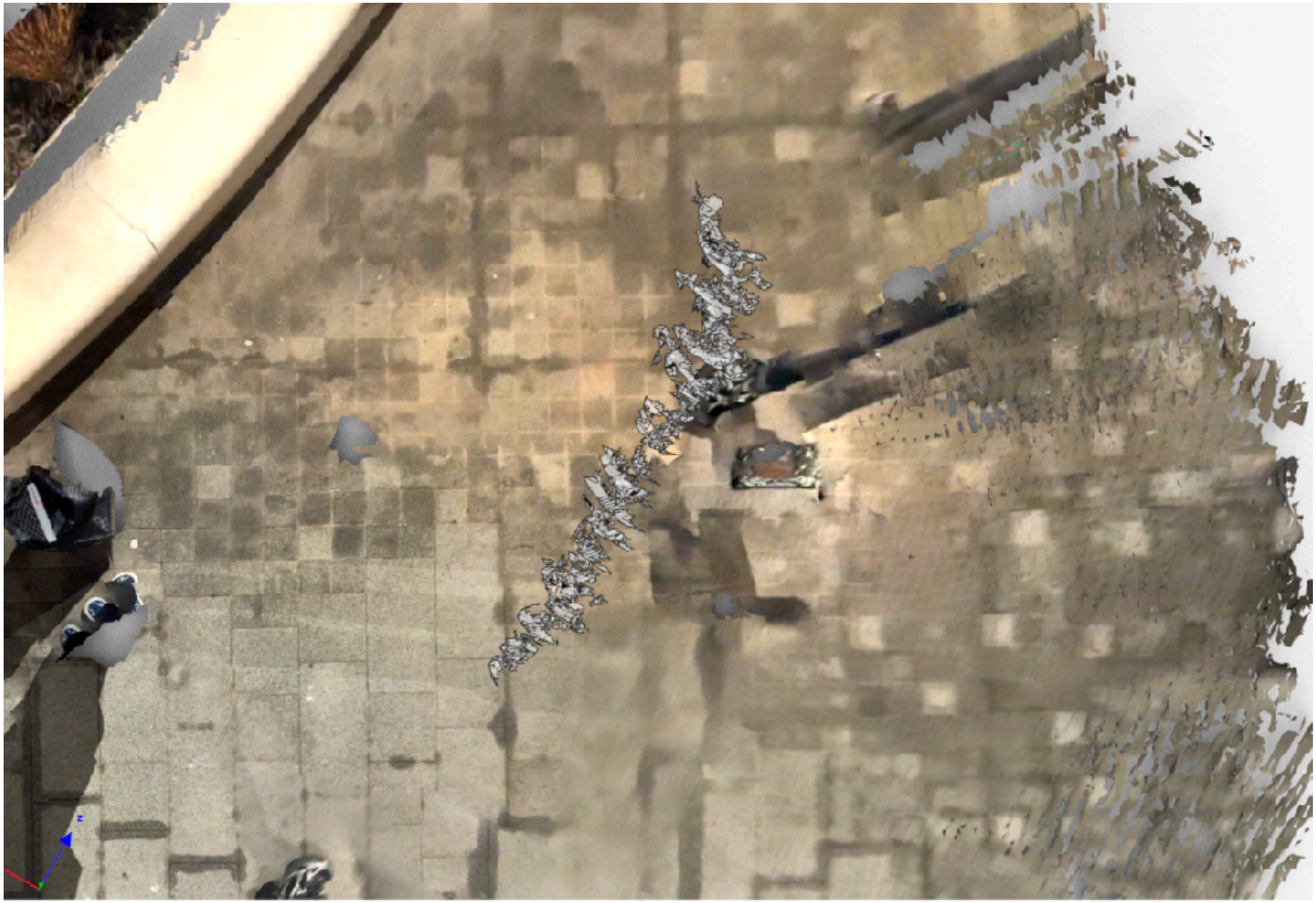
Trajectory





direction and movement lines

Translation



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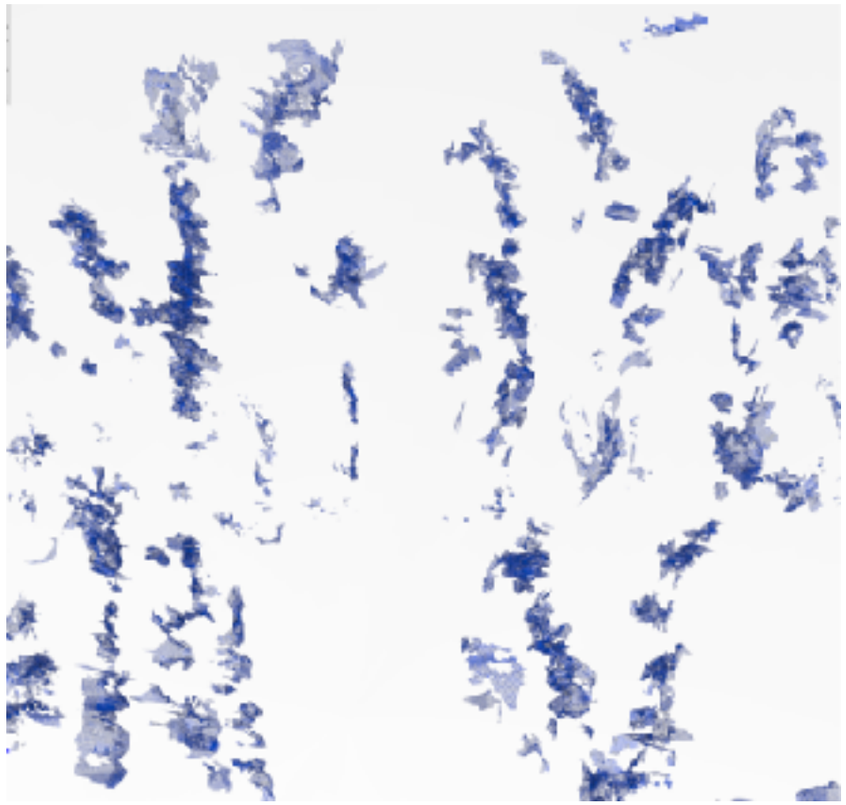

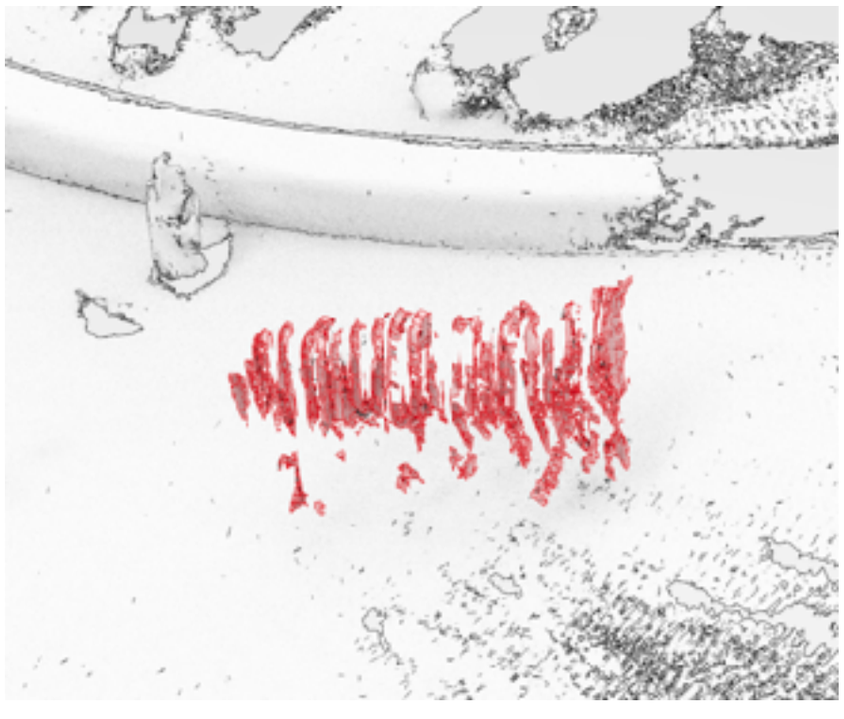

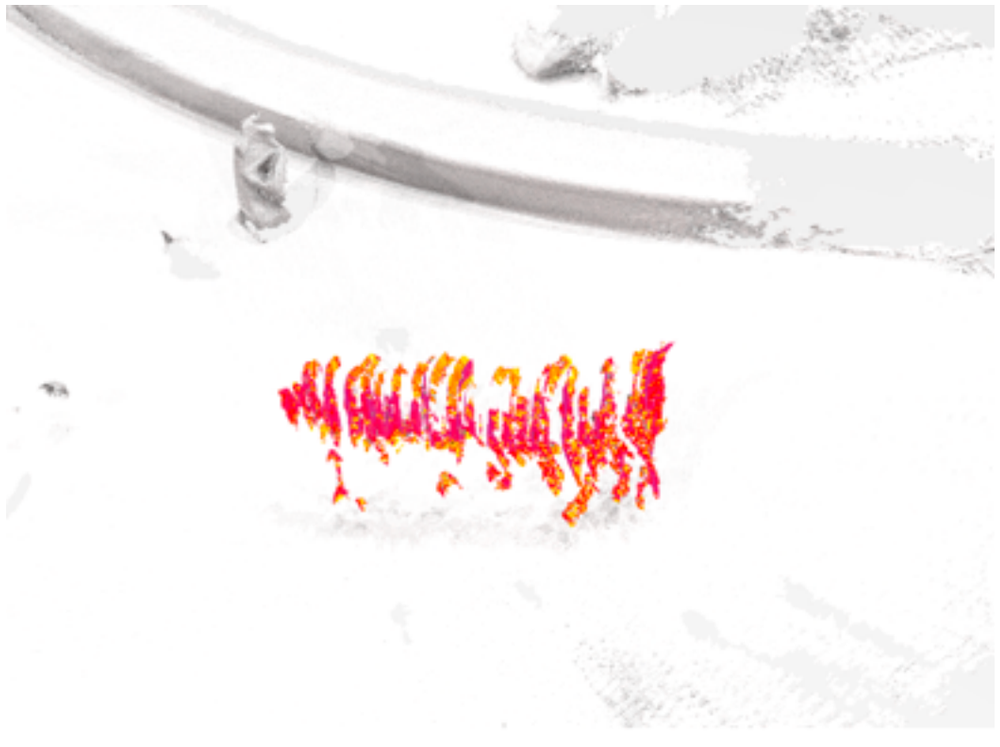

Abstract draft

This study investigates the **“defects” in pedestrian imagery** produced by **mobile 3D scanning—glitches** caused by movement such as **blurring**, **streaking**, or **fragmentation**—and explores how these flaws can be **repurposed as meaningful data** to reveal **spatial functions** within **urban environments**. It questions whether such **scanning anomalies** can serve as **visual indicators** of **crowd density**, **pedestrian speed**, and **movement paths**, thereby enabling effective analysis of **human spatial behavior** and contributing to a deeper understanding of **urban space**.

Methodologically, the research employs **smartphone-based 3D scanning software** to capture **moving crowds** across various locations. It involves **documentation** (**3D images**, **video**, **text**), **systematic observation** (focusing on **speed**, **density**, and **trajectory**), and **classification** (examining the relationship between **flow and space**). These **distorted images** are then **geo-referenced—overlaid onto maps** or **Google Street View**—to interpret their **spatial implications**.

Conceptually, the project draws from the taxonomy of ambiguous architecture proposed in *Made in Tokyo*, applying a similar logic to glitch imagery. What appears anomalous or cross-categorical is reframed as visual evidence of emerging spatial practices and flows.

Next Stage

1、**Evaluate the current observational dimensions—speed**, **density**, and **trajectory**—and consider whether alternative or additional dimensions might offer more effective insight.

2、**Translate the analysis back into 2D visual formats**, using tools such as **Photoshop** or **3D rendering software** to visualize the three key dimensions in a clear and comparative manner.

3、**Quantify and validate the data collection process** by setting parameters: selecting specific sites, limiting measurement duration, and defining consistent angles and scanning methods for capturing pedestrian flow.