

[RE]IMAGINE EDUCATION

A weekly Design AI newsletter



SEE THE CITY DIFFERENTLY: HOW AI IS TEACHING US TO OBSERVE, NOT JUST ANSWER

*Graduate Students Ravi Prudhvi Naga Sai Kumar, Sezgi Yalcinkaya,
Xi Peng, Lee Tat Haur, Shreya Gopi
In Conversation with Dr. Nachamma Sockalingam, OSP*



In an age where AI tools are often celebrated for speed and scale, what happens when we ask them to slow us down instead?

Urban Observer is a student-built Custom GPT designed not to answer questions, but to provoke better ones. Created as part of a No-code smart cities course at SUTD, this AI assistant guides urban studies students through the art of observation, one thoughtful question at a time. Blending ethnographic methods, urban theory, and dialogic pedagogy, it transforms fieldwork into a conversation, not a checklist. This reflection offers a behind-the-scenes look at the making of Urban Observer, why critical thinking is at its core, and how AI can become a tutor for the senses and not just a shortcut for analysis.

This technique of using ChatGPT-like LLMs to be a questioning, guiding, and meta-cognitive partner can be transplanted to any other discipline so that users are not just using it as a shortcut for analysis but as a personal tutor. Let's get inspired!

This newsletter is produced with ChatGPT and other AI tools as super-collaborators. The authors contribute the core ideas, drafts, strategic framing, pedagogical insights, and design direction, while AI supports by refining, formatting, and creative articulation. (CC BY-NC-ND 4.0).

Editor of Newsletter:

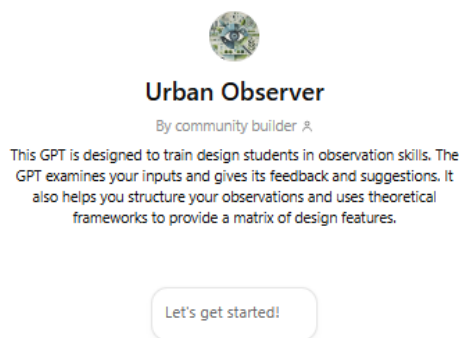
Dr. Nachamma Sockalingam, Office of Strategic Planning



How did the idea for Urban Observer come about?

Urban Observer is a specialized, no-code Custom GPT designed to serve as an interactive trainer for students of urban studies.

The core function of Urban Observer is to scaffold and cultivate observational skills. It examines user input and gives feedback and suggestions. It also helps you structure user observations and uses theoretical frameworks to provide a matrix of design features. If the user would like additional inspiration, they may request the GPT for a picture of what the study site might look like after some improvements. This function may not currently work perfectly, but we expect it to improve with time as the AI gets constant updates.



In a nutshell, our custom GPT

- Aims to train research observation skills, not just deliver information/ answers
- Acts like a friendly tutor: patient, clear, interactive.
- Guides users through step-by-step discussion.
- Asks questions, waits for user responses, builds thinking step by step.
- Structures observations using theoretical frameworks and matrices.

In addition, it also incorporates:

- Ethnographic field methods such as participant noticing, sensory mapping, and close-up vignettes.
- Critical urban theory: the GPT has been fed with materials from scholars like Jan Gehl, Kevin Lynch, Jane Jacobs, and Edward Relph. These materials can easily be substituted in the future with references or documents that are relevant to each user.

Dialogic pedagogy: the AI does not merely "lecture", but asks one meaningful question at a time and adjusts its path based on user responses



What makes Urban Observer different from generic ChatGPT?

We built this GPT as part of Mr. Poon King Wang’s module on “No-code smart cities”. We chose this topic from the three task options that were presented to the class. After some discussion on what the GPT should be able to do and help students with, we created a prototype and tested it. It was a process of constant iteration, wherein we revised our instructions to the GPT to get the desired results. After this testing and some valuable feedback from our classmates, we made changes to vastly improve our early draft. We wanted our custom GPT to be better than just the generic ChatGPT.

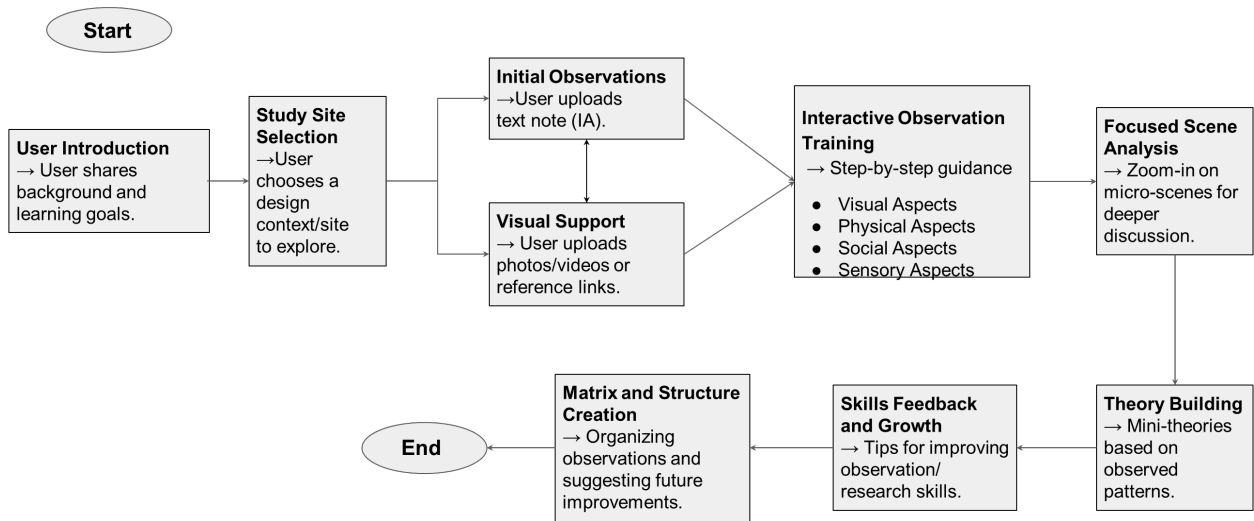
Generic ChatGPT	Urban Observer
Gives quick answers	Builds observation skills
One-way information	Interactive conversation
Fast, robotic	Patient, encouraging, theory-based

We were keen that Urban Observer should emphasize the process rather than the product. Rather than generating quick answers, it engages the user in a thoughtful, scaffolded conversation that begins with basic inquiries such as the user’s academic background and study site, as well as asking for the user’s initial observations of the scene. The conversation gradually unfolds into discussions around spatial patterns, social behaviors, and theoretical implications. Furthermore, the GPT can process text such as the user’s initial notes, as well as visual data such as photos. Future iterations of the custom GPT may also consider including and testing the Live function, which allows users to show the GPT the scene before them in real-time.

How does the workflow of Urban Observer unfold?

Urban Observer, as a custom conversational AI, is designed to support architecture and urban design students in developing situated observational skills. It guides users through a staged dialogue that mirrors ethnographic and qualitative research practice.

The workflow begins with a preliminary exchange in which the AI prompts the user to describe their academic background. This step ensures the dialogue is situated within the learner’s disciplinary frame. The user is then invited to introduce their study site and upload preliminary text-based observations. These form the core empirical entry point into the study process.



Urban Observer Workflow

Following this, Urban Observer encourages the submission of supplementary visual material, such as photographs, videos, or reference links. If these are provided, the AI compares them with the initial textual observations, identifying visual consistencies, overlooked elements, or contradictions. Where images are not available, the AI continues by structuring the analysis using its internal urban design knowledge base.

The dialogue then moves through four key dimensions of spatial experience: *visual*, *physical*, *social*, and *sensory*. Each aspect is addressed sequentially. The AI prompts detailed reflection within each dimension and pauses after each to invite the user to continue or revisit a particular line of inquiry. This iterative structure enables learners to progressively construct a multi-dimensional understanding of their site.

Once the broader layers are in place, the AI zooms in on specific moments or excerpts drawn from the user's notes. Through this close reading, the user is encouraged to identify patterns, irregularities, and possible interpretations. This stage often results in the generation of "mini-theories"—emergent hypotheses based on lived urban detail. These are grounded in the methodological perspectives of urban theorists such as Jan Gehl, as well as qualitative researchers including Creswell, Holtzblatt, and Svarre.

In the concluding phases, Urban Observer offers tailored suggestions for building observational skill sets. These may involve focusing on temporal rhythms, developing typologies of social use, or improving narrative structure in fieldnote documentation.

The entire exchange is governed by four key interaction principles. The AI adopts the role of a conversational tutor. It poses one question at a time, allowing space for user reflection. It scaffolds learning progressively through dialogue and it concludes each phase by suggesting new methodological tools or skills to strengthen the user's observational practice.



Is there a real example of Urban Observation in action?

Urban Observer coaches students in research-grade urban observation. In this live demo, we walk through six milestones, from the very first introduction to a theory-backed design proposal for Jimbo Chō, Tokyo.

Onboarding

The conversation opens with a friendly wave emoji. Before any analysis, Urban Observer begins with a short series of onboarding questions.

“What design or architectural programme are you studying?”

“Which site would you like to explore today?”

“Do you have initial text observations?”

This gentle interview establishes learner context, study goals, and raw field notes. Those handwritten observations are then uploaded, allowing the AI to augment human heuristics with its own photographic reading, setting the stage for co-created insight.

From Notes to Actionable Prompts

Next step, we upload a digital photo along with raw observation notes by the human observer.



Original photo of Jimbo-Cho, Tokyo taken on 10 March 2024



This step augments AI’s photographic reading with grounded, embodied insight, linking the subjective view of the on-site observer with the GPT’s structured prompt logic. It is here that street-level sensing meets pattern recognition reasoning. The observer’s textual annotations, such as notes on seating discomfort, noise levels or cultural signifiers, become co-analysis material. Urban Observer then responds not only to what is seen, but also to what is felt and noted, enabling context aware guidance that reflects both the human and machinic lens.

With the photo and notes in hand, the GPT parses both streams in real time and returns concise, theory-grounded suggestions:

- Create book lounge pause zones to transform browsing into lingering.
- Layer microclimate solutions such as shade trees and retractable awnings.

This step demonstrates Urban Observer’s signature workflow: observe, synthesize, suggest, always citing the underlying urban design logic.

The Structured Observation Matrix

Next, the AI reveals its analytic engine: a multi-column matrix covering visual, physical, sensory, and social dimensions. Each row maps current state → weakness → intervention → expected outcome. Students immediately see how scattered impressions solidify into an evidence table - a bridge between street-level noticing and studio-grade critique.

BONUS FEATURES: OBSERVATION MATRIX & MINI THEORIES

Dimension	Current Condition	Issues/Weaknesses	Improvement Suggestions	Expected Outcome	Mini-Theories	Recommended Reading:
Walkability & Physical Space	Wide, clean, tiled sidewalk; good movement flow.	No dedicated resting points for pedestrians.	Introduce small, integrated benches or seating pads matching sidewalk aesthetics.	Longer stays, higher engagement, more social interactions.	Spatial rest nodes increase temporal loitering and facilitate social exchange.	Urban Public Life and Thresholds - Gehl, J. (1987). <i>Life between buildings: Using public space</i> (6th ed.). Island Press. - Gehl, J., & Svarre, B. (2013). <i>How to study public life</i>. Island Press. - Whyte, W. H. (1980). <i>The social life of small urban spaces</i>. Project for Public Spaces.
Soft Urban Edges	Trees, bike parking, and book carts define spaces naturally.	Trees provide little shade (especially in early spring).	Add flexible, retractable shade structures (awnings or tensile canopies).	Greater comfort across seasons; enhanced microclimate.	Layered soft edges mediate between movement and lingering.	Place Attachment, Rituals, and Everyday Urbanity - Relph, E. (1976). <i>Place and placelessness</i>. Pion. - Low, S. M. (2000). <i>On the plaza: The politics of public space and culture</i>. University of Texas Press.
Sensory Experience	Good layering of visual elements (banners, books, shop signage); vivid lighting and shadows.	Potential sensory overload; no structured design unity.	Encourage consistent visual design for carts, banners, and pop-up elements.	Cohesive visual identity; more comfortable, attractive public space.	Unified sensory layering improves cognitive clarity and emotional comfort.	Urban Microclimate and Comfort - Alexander, C., Ishikawa, S., & Silverstein, M. (1977). <i>A pattern language: Towns, buildings, construction</i>. Oxford University Press. - Roe, J., & McCay, L. (2021). <i>Restorative cities: Urban design for mental health and wellbeing</i>. Bloomsbury Visual Arts.
Social Interaction Potential	Casual, low-pressure browsing and slow movement atmosphere.	Limited seating or prompts for lingering; interactions largely transactional.	Add micro-social spaces (like shared seating or small tables) near book carts or under trees.	Encourage casual conversations, reading groups, or longer stays.	Micro-social nodes embedded in thresholds catalyze informal encounters.	Cultural Districts and Memory Urbanism - Zukin, S. (1995). <i>The cultures of cities</i>. Blackwell. - Lloyd, R. (2006). <i>Neo-Bohemia: Art and commerce in the postindustrial city</i>. Routledge.
Vehicular Interface	Vans directly park on sidewalk edge for unloading.	Temporary pedestrian hazards and visual clutter during deliveries.	Designate and visually mark special 'loading zones' slightly removed from main pedestrian paths.	Safer, less obstructed pedestrian flow; better organized deliveries.	Functional zoning protects pedestrian rituals and maintains flow legibility.	Sensory Urbanism and Sensory Design - Pallasmaa, J. (2005). <i>The eyes of the skin: Architecture and the senses</i> (2nd ed.). Wiley-Academy. - Pink, S. (2009). <i>Doing sensory ethnography</i>. SAGE Publications.
Commercial Variety	Mainly book stores and pharmacies; niche but culturally rich.	Risk of mono functionality leading to narrow user demographics.	Integrate small complementary pop-ups (e.g., cafes, tea stands, street performances).	Diversified attraction points; multi-purpose urban visits; greater community vitality.	Co-location of niche and complementary commerce increases inclusive urban draw.	Design Methods and Contextual Research - Holtzblatt, K., & Beyer, H. (2017). <i>Contextual design: Evolved</i>. Morgan & Claypool Publishers. - Creswell, J. W. (2016). <i>30 essential skills for the qualitative researcher</i>. SAGE Publications
Temporal Adaptability	Moveable book carts; flexible outdoor displays; changing light/shadow during day.	Vulnerable to harsh weather; no enhanced experience during evenings or bad weather.	Create modular, weather-resistant setups and consider subtle ambient lighting at night.	Maintain vitality during different times and seasons; enhance nighttime urban culture.	Temporal modularity extends public life across climate and time boundaries.	
Emotional & Cultural Atmosphere	Calm, nostalgic, leisurely pace driven by physical books and historic ambiance.	Potential vulnerability to modernization pressures and homogenization.	Emphasize local identity through design motifs, storytelling installations, and community events.	Strengthened place identity; deeper emotional connections for both locals and visitors.	Local identity becomes resilient through visible memory cues and ritual anchors.	

SWOT - Observation Matrix

Prompted to go deeper, Urban Observer undertakes three key tasks:

- i. Produces a SWOT analysis and observation matrix for the streetscape
- ii. Develops mini theories that generate reflective narratives to guide design thinking.

For example:
“Soft thresholds, dense cultural textures and vertical order are key drivers of everyday place attachment.”
- iii. Suggests a curated reading list featuring theorists such as Jan Gehl, Kevin Lynch and Juhani Pallasmaa, whose ideas support the observations and proposals.

BONUS FEATURES: SWOT - OBSERVATION MATRIX

Strength	Weakness	Opportunity	Threat
Soft Thresholds: Seamless flow between bookstores and public space encourages casual engagement.	Lack of Dedicated Pause Zones: No semi-fixed zones like benches, micro-plazas, or niches for sitting or lingering.	Embed Semi-Public Pause Zones: Create "book lounges" with small benches and wooden seating near book carts.	Dependence on Store Operators: Public vibrancy may disappear if bookstores reduce their outdoor presence.
Rich Cultural Density: Layered street activity with books, bikes, and people, without visual clutter.	Thresholds Too Dependent on Store Operators: No permanent design features to support casual engagement without commercial initiative.	Scaffold Thresholds: Use modular mats, frames, or micro-platforms to formalize soft threshold areas.	Loss of Cultural Memory: If activities shrink, the distinct book-town identity may fade over time.
Vertical Organization: Trees, signs, and poles provide rhythm and spatial structure.	Microclimatic Discomfort: Lack of consistent shade or shelter from seasonal sun/rain.	Formalize Microclimate Comfort: Add denser trees, awnings, and subtle cooling systems (e.g., misters).	Climate Vulnerability: Harsh weather may reduce outdoor usability and visitor comfort.
Human-Scale Environment: Mid-rise buildings, open-air setups promote an inviting scale.	Limited Sensory Enrichment: Overreliance on visual appeal; underuse of sound, touch, and scent.	Sensory Layer Enhancement: Introduce ambient music, scent zones (wood, paper, seasonal flora).	Mono-sensory Experience: Could make the space less memorable or engaging in longer visits.
Calm Pace: The design supports slow, lingering behavior and casual walking.	Potential Street Furniture Deficiency: Lack of bike racks, bins, or casual seating may hinder flexible use.	Strengthen Spatial Grammar: Rationalize signs and add modular public furniture to support fluid use.	Unstructured Use May Deter Use: If not supported with furniture or signage, activity may become disorganized or fade.

This process helps users move from initial noticing to conceptual understanding, enhancing their skills in urban analysis and interpretation.

All insights are synthesized into a multi-dimensional matrix, combining field notes, analytic categories and theoretical references. The resulting framework serves as a compact diagnostic and design brief, helping students, planners and community members identify opportunities for intervention.



In the Jimbo Chō case, the matrix pinpointed gaps such as the lack of street furniture, weak spatial thresholds and untapped potential for improving microclimatic comfort. Each element is connected to relevant urban theories, allowing users to link observation with deeper conceptual frameworks such as Gehl's soft edges and Relph's sense of place.

AI-Assisted Suggested Enhancements with Artist's Impression

The matrix then informs a text-to-image generation process.

BONUS FEATURES: GENERATE FUTURE-STATE IMAGERY



(a)



(b)

Images generated by Urban Observer

a) First generated image b) Updated image with critiques provided by the user.



Original photo of Jimbo-Cho, Tokyo
taken on 10 March 2024

Demo of two options of generated images based on the observation matrix

The initial AI render incorporated modest benches, improved signage, and clearer pedestrian circulation. These features addressed the functional and spatial gaps identified in the analysis.

Following this, the user provided feedback to Urban Observer, stating that the streetscape "needs more seasonal identity." In response, a second render was produced. This version introduced cherry blossom trees, patterned paving and soft seating arrangements, creating a streetscape with greater character and sensory richness.

This demonstrated Urban Observer's capacity for iterative design collaboration: diagnose, propose, visualize, critique and re-imagine.



What were your biggest takeaways from this project?

“As a primarily quantitative scholar, I initially had limited exposure to urban observation. Working with this Custom GPT project opened up new dimensions for me, especially seeing how the back-end design impacts the front-end user experience. I now see how GPTs, when tailored well, can become trusted tools in qualitative research across fields.”

— Student 1

“Observation is often overlooked in urban design, but this project made me rethink it as a trainable, deliberate act. Designing Urban Observer helped me slow down, ask better questions, and embed theory into practice. AI didn’t replace insight. It sharpened it.”

— Student 2

Working on Urban Observer has been more than a class assignment. It has been a transformative learning experience. As a team, we came from different disciplinary backgrounds, but this project pushed us to converge around a shared challenge: how to teach observation, not just automate it.

Through iterative prototyping and reflection, we realized the depth of what AI can offer when guided by strong pedagogical values. It forced us to be deliberate and not just about what the tool should do, but how it should feel to use. It taught us how to embed theoretical frameworks into interactive systems, and how to design an AI that doesn’t answer too quickly, but asks just enough.

We leave this project with a stronger appreciation for slow thinking, for reflective practice, and for the creative possibilities that emerge when human insight meets well-shaped technology. Urban Observer, in the end, is not just a Custom GPT. It is a design conversation, one that we hope continues to grow, adapt, and inspire others to observe the world a little more closely.

This project reminded us that integrating AI in learning is not about outsourcing thinking—it’s about deepening it. When AI tools are designed with intention, they don’t replace human insight; they challenge us to ask better questions, refine our interpretations, and engage more critically. Urban Observer helped us see that AI can sharpen curiosity and scaffold deliberate and situated thinking.

Urban Observer reframes our perspectives. It asks us to rethink how we teach, how we observe, and how we collaborate with technology. By shifting AI’s role from answer-machine to reflective partner, this project opens a new path for critical, creative, and human-centered learning. For educators, researchers, and urbanists alike, it offers a hopeful glimpse of what’s possible when AI slows down and helps us truly see — not just the city, but our own thinking in motion.