

URBAN SPACE "ON THE MOVE": LITERARY, EXPERIENTIAL AND DIGITAL ITINERARIES FOR THE 21ST CENTURY TRAVELER LITERARY NARRATIVES & AUGMENTED DIGITAL REALITY

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Abstract

This research addresses the superficial engagement often experienced by contemporary travellers in complex historic cities, proposing a novel methodological framework that synthesizes literary narrative, Augmented Reality (AR), and advanced 3D visualization. Challenging the consumption of standardized tourist products, the study advocates for an experiential "reading" of the urban environment, where the city is perceived not as a static image but as a multi-layered palimpsest of memory, history, and myth. By integrating the narrative depth of renowned authors—Orhan Pamuk for Istanbul, Constantine Cavafy for Alexandria, and Nikos Kazantzakis for Heraklion—with the atmospheric capabilities of 3D Gaussian Splatting (3DGS), the proposed model transforms urban navigation into an emotional and embodied act. Unlike traditional geometric digitization, 3DGS is utilized to render the fluidity of urban memory, visualizing invisible layers and "spectral" architectural traces through an impressionistic aesthetic rather than rigid photorealism. The paper demonstrates that guiding AR interfaces with literary chronotopes shifts the user's role from a passive spectator to an active "walker-reader" who navigates the tension between the physical present and the narrative past. This interdisciplinary approach establishes a new epistemology for digital cultural heritage, where technology does not merely replicate the physical world but augments it with the intangible resonance of lived experience. Ultimately, the study highlights how the convergence of fiction and digital innovation fosters a profound, personalized connection between the 21st-century traveller and the dynamic, living archive of the city.

Key words: *Spatial narratives, literary chronotopes, augmented reality, urban palimpsest, 3d gaussian splatting, digital cultural heritage, smart tourism.*

1. INTRODUCTION

Urban places constitute for the modern traveller a fascinating realm in search for experiences, experiences and knowledge. In the essay "On Tourism" (Perec, 1974:64), the urban thinker Perec sarcastically remarks: "Rather than visit London, stay at home, in the chimney corner, and read the irreplaceable information supplied by Baedeker (1907 edition)", describing the schematic way in which the visitors attempt to familiarize themselves with a city, without truly getting to know it or, better yet, inhabiting it. Today's travellers-visitors of modern,

historic cities of the 21st century, such as Constantinople, Alexandria, or Heraklion on the island of Crete, face their complex and multifaceted physiognomy, which makes it difficult to uncover and embrace the "spirit of the place" during the brief duration of their trips. The combination of literature and the innovative possibilities of digital technologies, fictional texts about the city and the use of augmented reality, contributes to the art of viewing the city. It offers the modern traveller the opportunity to acquire his own experience through the mediation of narration and to attempt his own real and digital navigations of the urban space based on individual choices and interests. Drawing emotion from the experiential selective reception and the personal interpretation and reading of the place's special identity rather than the consumption of a standardized tourist product. Therefore, we propose a specialized, personalized, and interactive cultural tour of the living city, one that avoids a mass-market and homogenizing character. It encourages a meaningful engagement with the city, where fictional narratives enrich the range of personal choices and emotions. Contemporary strands of cultural-heritage theory reconceptualize the individual's essence (Muñoz-Viñas, 2005)), shifting from the notion of a passive recipient of content to that of an autonomous agent (Ranciére, 2011) engaged in a multisensory, dialogic interaction with their immediate environment, within which they are fully immersed.

Digital technology is employed to retrieve cultural heritage, manage diverse fragmentary impressions, and alternate contemporary urban scenes throughout its metropolitan routes (Herold et al. 2018; Pepe et al. 2021; Fiorini et al. 2022). Within this digital-experiential framework, the traveller is provided with an easy-to-use, unique, and multi-layered mapping system that combines urban exploration walks with history, myth, and memory.

The city is a palimpsest of historical events, personal documents, and collective actions recorded in the urban space, shaping the unique character of a place (Massey, 2005; Delgado, 2001). It serves as a privileged and multifactorial field for the production of collective memory, which requires inventive highlighting and collaborative management to become the shared property of residents and visitors (Halbwachs, 1980; Boyer, 1994). The distinctive charm of historically rich cities—characterized by multiple focal points, symbols, and centres of power—stems from the concentration of diverse cultural assets. The cultural memory of the city is woven as a network of meeting places, where different pasts communicate and intersect in the same places. The creation of selected tours or routes within the urban fabric can leverage this multimodal territorial and political reality, making the syntactic structure and the historical, political, and social roles of the city more understandable and accessible.

We propose a novel methodology that combines the narrative depth of literature with the atmospheric aesthetics enabled by digital three-dimensional (3D) technology, specifically 3D Gaussian Splatting (3DGS) (Kerbl et al. 2023; Clini, et al. 2024; Yu et al. 2025). Unlike traditional solid 3D digital graphics (Ioannides, et al. 2017; Clini, et al. 2024), 3DGS operates 'impressionistically', allowing the visualization of urban memory as a nebula of possibilities, light, and colour. The research has two primary objectives: first to emphasize literary narrative as the primary mechanism for 'mapping' the city, revealing the invisible layers of the urban palimpsest. Second, to introduce 3DGS into the AR environment as an effective medium for visually rendering narrative fluidity, thereby transforming the user from a passive viewer into an active, embodied interpreter of the space. Through the study of the cases of Istanbul, Alexandria, and Heraklion, this work aims to establish a framework in which digital technology does not replace imagination but rather enhances it, creating experiential pathways that connect the historical past with the dynamic present.

2. LITERATURE AND THE CITY. THE WALKING PRACTICES

"They 'mean', revealing the hidden contradictions and the social dialogue that develops within and around them."
(Bakhtin, 1981)

The city—whether recognizable landmarks or unknown, unrecognized places; houses, rooms, private and public buildings; intimate and collective spaces; real and utopian, presented in multiple and ambiguous versions, intertwine in literary texts (Rohleder, Kindermann, 2020). These spaces revealing hidden contradictions and the social dialogue that unfolds within and around them, they 'mean' (Bakhtin, 1981). Literature produces, according to Bourdieu, (Bourdieu, 1995) a sense of 'real', which distances us from reality, as it "reveals by covering". *"There are many ways to navigate a city: you can set and follow precise routes or wander at random. You might systematically explore a neighborhood with a street map in hand, hop on the first bus that arrives and get off at its stop, or even try to travel from one part of the city to another using a different route than usual..*

You can create your own personal itinerary by setting self-imposed commitments and rules—arbitrary, yet highly effective—in supplementing traditional city guides point by point."
(Perec, 1974)

These are the tips from the lover of inventive itineraries, the writer Perec, who explored the city thematically, searching for its heart and soul in the random and the overlooked. Urban space, through the practice of walking, acquires a dimension distinct from the voyeuristic view from above or the experience of the city as a network of continuous traffic flows (De Certeau, 1984). The 'power' of a street differs depending on whether one walks along it or observes it from an airplane, as Benjamin notes in 'One-way Street' (Benjamin, 2016). When viewed from above, the landscape appears continuous, with the street the same laws as the space that surrounds it (Benjamin, 2006). Aerial photography of the urban landscape transforms the city into a map—and potentially a target. (Virilio, 2009: 16.)

For de Certeau, space becomes a place when it transforms into a field of action—that is, when it is inhabited in the broadest sense of the term. *"Thus, the street geometrically defined by urban planning is transformed into a space by walkers."* (De Certeau, 2010: 117). The moving masses *"that make some parts of the city disappear and exaggerate others, distorting it, fragmenting it, and diverting it from its immobile order."* (De Certeau, 1984: 102). de Certeau introduces the distinction between two different categories of city images (De Certeau, 1984: 92). On one hand, there are panoptic views that look from high up, a distant urban panorama—a model of the city map from a vantage point, a holistic gaze that constructs fictional narratives. These views transform the complex texture of the city into a visual artifact, turning viewers into voyeurs. On the other hand, there are views that look where ordinary city users live. At this level of gaze, illegible and hermetic images emerge, capturing the dark and poetic spatiality of the inhabited city—a city formed by fragments of urban objects, within which a past slumbers alongside the everyday practices of its people. These images reflect the unstable condition of the modern and postmodern city, highlighting aspects such as urban voids, contradictions, gaps, dystopias, political and economic crises, disrepair, and desolation. These factors directly and catalytically alter the image and function of public space, transforming the viewer from a voyeur into a walker and traveller. (De Certeau, 1984: 92-95).

The city is a place where social bonds are formed. It is only by walking through it that the city is experienced not as the homogeneous fabric depicted in tourist brochures, but

through contrasts and heterogeneities. Through union and social mixing, the city is realized as a space of the political.

“Not to find one’s way around a city does not mean much. But to lose one’s way in a city, as one loses one’s way in a forest, requires some schooling. Street names must speak to the urban wanderer like the snapping of dry twigs, and little streets in the heart of the city must reflect the times of day, for him, as clearly as a mountain valley.”

(Benjamin, 2006: 53)

Perhaps this is precisely the contribution of literature to the representation of the modern city. As Eco points out, contemplative walks through the forest of narrative—intended to reveal to the reader the invisible components of the urban condition—must allow for interactive engagement and stimulate participation. The forest of words and meanings must *“tangled and twisted like the forests of the Druids, and not orderly like a French garden”* (Eco, 1994: 128). Not to describe places realistically or imaginatively, nor simply reflect reality successfully, but rather serve as the driving force behind different routes through the city. It should act as an initiation, as Tsirimokou writes, into the topological variety that mobilizes vision—into the alternation, arrangement, and multiplicity of spaces that create life, traces, and history—*“revealing a living, dynamic, inventive city, with its needs and its luxuries, its practicality and its fantasies.”* (Tsirimokou, 2000).

3. CITY VERSIONS: ISTANBUL, ALEXANDRIA, HERAKLION

“...the traveller is invited to visit the city and, at the same time, to examine some old postcards that show it as it used to be ... Beware of saying to them that sometimes different cities follow one another on the same site and under the same name, born and dying without knowing one another, without communication among themselves.”

(Calvino, 1974: 22-23)

Cities evolve over time and are constantly transformed. Urban space, the product of complex processes, practices, and fermentations, is neither unambiguous nor fixed, whether as an image or a representation. It embodies a field of experiences and vicissitudes, cultural encounters, and historical memory—a fluid condition shaped by social changes and aesthetic osmosis.

Literary narratives identify significant distinct points on the city map. These include observation points, highlighted by the authors and recognized through research; condenser points, where representations of urban space by various authors—both native and foreign—intersect, capturing the unique character of the city; and viewpoints revealing the invisible, the indistinguishable, and the residual aspects of urban character (Moira, 2018). It concerns the interaction of specific people with specific spaces and is spatially determined. The literary city is a spatial representation in which social impact, historical memory, the confusion of symbols, and their infusion and articulation into new contradictions are inscribed. It embodies the paradox of habitation and the subjectivity of the resident’s gaze (Prieto, 2012; Pleßke, 2014). The city’s syntactic structure is imbued with the events of memory, the pain associated with familiar places, and the rituals of everyday life. Unique emblematic "urban objects" are those that expand the present moment, as well as collective fantasies, social control, and private conversations that claim public space (Massey et al. 1999). Vector paths emerge as alien destinations from appropriated starting points, giving substance to the road; wanderings demonstrate the fluidity of boundaries, while alternative observations playfully invert the inside–outside, known–unknown, and familiar–unfamiliar dichotomies. Literary narrative

language records or translates the author's internal, explicit, or implicit discourse on habitation and urban experience, revealing individual and collective identities of citizens, selecting places of fundamental importance, gathering critical mythological, historical, and cultural elements, and inventing connections and interpretations between incompatible spatial fragments and traces (Erll, 2011). It constructs, through a process of stitching, a horizontal spectral network of movements within the existing urban fabric, indicating emblematic places, road axes and communication channels, as well as impenetrable boundaries invisible on the impartial political map—internal walls, intangible gates and passages in spaces of potential exclusion and solidified isolation, urban voids, and unexpected pockets of diversity (Harrow & Watts, 2012). It composes and constructs a hypertextual diagram that records the individual and collective expression of "dwelling" through the embodied management of the urban field (Moirá, 2018). The literary representation of the city is detached from the synchronicity and illusion of a single "reality," a fixed and undifferentiated material event. It reveals to the reader-user atmospheres and aspects, both visible and invisible, as well as important elements of various urban chronotopes (Könönen, 2003; Makris, Moira, 2021). These alternative perceptions of different urbanities provide a distinct field for interpretation and understanding.

4. ISTANBUL - ORHAN PAMUK

Istanbul-Constantinople is a twin, multifaceted city with a centuries-old history and a distinctive character that spans two continents. Positioned at the crossroads of East and West, Asia and Europe, it embodies hidden contradictions, multicultural origins, and rapid development that continuously transforms it. The distinguished writer Orhan Pamuk chooses to highlight the land and sea routes of Istanbul to provide a vivid portrayal of the city and its transformations (Pamuk, 2005; 2015). He depicts his hometown as floating above the Bosphorus, often following his protagonist, the traveling vendor Boza Mevlut, on his nightly journeys through the neighbourhoods and alleys of Istanbul, observing the social, cultural, and spatial urban mutations (Pamuk, 2015).

"Mevlut had been in Istanbul for forty-three years. For the first thirty-five, every year that went by seemed to strengthen his bond with the city. Lately, however, he'd begun to feel increasingly alienated from it. Was it because of that unstoppable, swelling flood, the millions of new people coming to Istanbul and bringing new houses, skyscrapers, and shopping malls with them? He began to see buildings that had been under construction when he'd first arrived in 1969 already being demolished, and not just ramshackle houses in poor neighborhoods, but even proper buildings in Taksim and Sisli that had stood for over forty years. It was as if the people who lived in these old buildings had run out of the time they'd been allotted in the city. As those old people disappeared along with the buildings they'd made, new people moved into new buildings—taller, more terrifying, and more concrete than ever before. Whenever he looked at these new thirty- and forty-story towers, Mevlut felt that he had nothing to do with any of the new people who lived in them." (Pamuk, 2016: 573).

Sometimes, he focuses on the seafront and the bridges, which, like visible threads, tightly stitch the two parts of the city together. He describes the moving images seen from the sea, emphatically identifying what cannot be clearly seen from the beach.

"Pushed along by its strong currents, invigorated by the sea air that bears no trace of the dirt, smoke, and noise of the crowded city that surrounds it, the traveller begins to feel that, in spite of everything, this is still a place in which he can enjoy solitude and find freedom. This waterway that passes through the centre of the city is not to be confused with the canals of Amsterdam or Venice or the rivers that divide Paris and Rome in two: Strong currents run through the Bosphorus, its surface is always ruffled by wind and waves, and its waters are

deep and dark. If you have the current behind you, if you are following the itinerary of a city ferry, you will see apartment buildings and yalis, old ladies watching you from balconies as they sip their tea, the pergolas of coffeehouses perched by landings..." (Pamuk, 2005: 124)

As the visitor moves along the sea roads of the Bosphorus, a panorama in kinaesthetic terms unfolds before him (mosques, minarets, apartment buildings, towers, gardens, remote neighbourhoods, hills) while at the same time a fluid field of view and observation is formed on both sides:

"To travel along the Bosphorus, be it in a ferry, a motor launch, or a rowboat, is to see the city house by house, neighborhood by neighborhood, and also from afar as a silhouette, an ever-mutating mirage..."(Pamuk, 2005: 124)

The technology of 3D Gaussian Splatting (3DGS) emerges as an ideal medium for visualizing Pamuk's concept of "*hüzün*" (melancholy). 3DGS can effectively render the atmospheric ambiguity, fog, and fluidity of the Bosphorus. The proposed digital model does not depict the city as a static urban plan but rather as an impressionistic cloud of memory, where the ruins of the past and modern apartment buildings interpenetrate, allowing the user to experience the city as a "changing dream as the author describes it.

5. ALEXANDRIA – CONSTANTINE CAVAFY

Alexandria, located west of the Nile Delta and built on a long, narrow isthmus between Lake Mareotis and the Mediterranean Sea, was in ancient times the most important port and capital of Egypt. At its peak, it was the largest economic centre in North Africa and one of the most prominent cultural hubs in the world. Renowned for its library and lighthouse—one of the Seven Wonders of the Ancient World—it was founded by Alexander the Great in 331 BC. By the early twentieth century, multicultural and cosmopolitan Alexandria was home to a significant Greek community among other foreign residents, which flourished and dominated the city's cultural and economic life. Alexandria grows parallel to the seafront, having an extensive linear organization that exhibits alternations and variations.

In this context, the poetic creation of Constantine Cavafy, an illustrious intellectual native of this city, is inscribed. A poet deeply connected to and celebratory of Alexandria (Kolonas, 2024: 13), Cavafy was an absolute master of his expressive means. He engaged in a continuous and dialectical interplay of mythologizing and demystifying, 'strolling' comfortably real and historical times. He mythologized his modern, present, and even non-existent city, preserving it in memory capsules, while simultaneously demystifying one or many "*historical Alexandrias—cities that envied its greatness, imitated its example, and ultimately perished alongside it. By recalling these cities, the poet grants them a second, otherwise illuminated life, revealing the reverse side of the official narrative. Using the dual voice of the present and the absent, the living and the dead, he enters and exits these perforated memories, preserving something of their authentic presence within the deltas of History*"

(Tsimokou, 2025).

*"Yesterday while strolling through a neighbourhood
on the edge of town, I passed below the house
I used to go in when I was very young.. [...]
And yesterday
as I passed along that ancient street,
suddenly everything was made beautiful by desire's spell:*

*the shops, the pavements, the stones,
and walls, and balconies, and windows;
there was nothing ugly that remained there”*

(Cavafy, 2012 - Below the House)

“Somehow, we should approach the urban atmosphere—real or imaginary—that permeates his poetry: alleys, streets, squares, suburbs, ports, beaches, houses, shops, cafés, taverns, and so forth. These elements stage a city with its bustling, market-like daily life, its diverse population, and the beauty found within its ugliness, repeatedly” (Tsirimokou, 2025).

According to Kolonas (2024), the only exception to this modern urban anonymity is the prose poem ‘In Broad Daylight’ (Cavafy, 2012), which explicitly names neighborhoods, squares, and main streets of Alexandria (Ramli, Rossini, Aboukir, Sidi Gavir, etc.), as well as well-known landmarks such as the casino of Agios Stefanos, the café the theater the poet attempts to capture Alexandria’s European identity, situating it within the pantheon of multicultural metropolises of the nineteenth century. Keeley, writing about Cavafy’s Alexandria, reveals the image of an alluvial city stratified into at least four levels: the real city, the metaphorical city, the sensual city, and the mythical Alexandria (Keeley, 1996). These levels are not impermeable but porous; they interpenetrate and create a rare, perhaps unique, amalgam.

For Alexandria, the challenge of augmented reality lies in managing "absence." Since Cavafy's physical city has been lost, the AR system is tasked with functioning as a "spectral plane" (or spectral layer). Through the semi-transparent visualization provided by 3DGS, the demolished neoclassical and mythical sites are projected onto the contemporary urban fabric not as solid objects but as memories that emerge and fade away. Thus, the walker does not merely see a historical representation but experiences the sense of loss and sensuality that permeates Cavafy's poetry.

6. HERAKLION - NIKOS KAZANTZAKIS

Heraklion, located on the island of Crete, carries a profound historical legacy shaped by its Minoan origins, Byzantine presence, Arab cultural influences, Venetian rule, and Turkish conquest. As an island and port city, its strategic location and rich history have made it a gateway and a dominant force in the Aegean Sea. It is a fortress city scattered with historical remnants—a multifaceted, mythical, and conflicting city, a place that evokes complex emotions in modern visitors while inspiring native writers. These authors strive to capture Heraklion’s unique character in their narratives. Often described as a “melting pot of cultures,” Heraklion embodies numerous contradictions that prominent local writers attempt to represent, in significant novels and short story collections within Greek literature. Their works survey the city’s physiognomy, interpreting the interplay between the stable elements of its urban space and the dynamic forces driving its transformation. They portray the “nuclear Heraklion” within its walls as a distinctive, conflictual urban amalgam that reflects the heterogeneity of its historical periods, (Moiras, 2018).

The Old City of Heraklion, built inward within the protective enclosure of the extensive Venetian wall, is an enclosed city that looks inward with an introspective mood, despite being a port. It turns its back on the sea—the northern border and a potential threat due to adverse weather conditions such as strong winds and humidity, as well as the historical memory of hostile pirate raids and defeats by Arabs, Venetians, and Ottomans. To illustrate its spatial character, Nikos Kazantzakis (1969) selects urban epicenters and main road axes, presenting them as significant fields of stage action, negotiation, confrontation, and communication. He

describes the Great Castle as a closed space (Kazantzakis, 1969), controlled by the high walls that surround it and the four guarded gates located at the cardinal points of the horizon, symbols of order and exclusion (Moira, 2018). The stone mantle of the Venetian wall interrupts the flow of the streets, obstructs vision, and prevents contemplation of the distant horizon. Residents go outside the walls to breathe, to see, and to be seen. They gather in Lions Square, an institutional and social epicentre with timeless symbolism, or in Freedom Square (Three Arches), which, as a natural balcony and plateau, alleviates the feeling of suffocation by offering a view of the sea:

“Captain Michalis took the longest route to go home; he felt he couldn't fit into four walls tonight; he was swelling inside; his heart was overflowing. He couldn't fit in his body, nor in his house; suddenly the Great Castle narrowed, it couldn't fit him. He took the road; houses, alleys, people, were suffocating him. He walked with strides, gritting his teeth, as if he were being chased. He entered Platia Strata, deserted; a few oil lanterns cast faint reddish glows down the cobblestones. He passed the bazaar, a Turkish restaurant was still open, a cafe, two or three taverns; someone called out to him, the voice of Captain Polyxigis seemed to him, he gurgled his steps, he escaped. He arrived outside the Pasha's Gate, at the marble Venetian fountain with the lions. He raised his eyes, saw the Great Plane Tree, the cursed one, he hesitated, no one was passing by, he made the sign of the cross”.

(Kazantzakis, 1964: 34).

In the case of Heraklion, the digital narrative centres on ‘embodied movement’ and the concept of boundaries. The AR system maps the hero's "escape routes, transforming the Venetian Walls from inert monuments into active fields of experiential transition. By following the footsteps of Captain Michalis (Kazantzakis, 1964) toward the sea, users experience, through augmented navigation, the tension between confinement (the Castle) and liberation (the sea), turning the reading of the text into a dynamic act of traversing urban space.

7. AUGMENTED REALITY AND URBAN EXPERIENCE

Augmented Reality, a cutting-edge digital technology, has the potential to radically transform the human perceptual, embodied, and sensory experience by integrating real and digital environments (Azuma, 2015; Jung, Tom Dieck, 2018). This integration enables a focus on both invisible microcosms and macrocosms, facilitating a range of sensory-motor and cognitive activities within space. Through digital applications, modern technology allows for a multi-sensory exploration of the city and fosters a connection with its historical past (Fiorini et al. 2022). Geolocation systems designate specific viewing anchor points (Cloulelis et al. 1987), where diverse narratives—authored by different authors or multiple texts by the same author—form a polyphonic framework of contrasts. This framework is enriched with factual material, information, images, and historical elements, while intentionally leaving the interpretation open to the reader or receiver.

The city is a social and cultural space in constant interaction with diverse expressions of life (Massey et al. 1999; Massey, 2005). Since the complexity and potential of such interactions are particularly evident in works of fiction, there has been a growing interdisciplinary interest in literary mapping and the emergence of new correlations between narrative and real locations in recent years (Alter, 2005; Piatti et al. 2009; Cooper et al. 2016). The characteristic urban elements of novels support the spatiotemporal dimensions of their narratives (Hones, 2014; Cooper et al. 2016, Moira, Makris 2018). Through these elements, the social structures that shaped them, the various stories of their transformation over time, and ultimately the identities of the people whose lives are inextricably linked to the spatial

environments in which they were born are revealed. A major problem is the lack of a reliable method for the cartographic representation of qualitative data, such as the characteristics of literary texts—including meanings, emotional states, and psychological conditions. Augmented Reality is a technology designed to bridge the real world with its virtual aspects. By overlaying digital information onto the physical environment, it creates an enhanced that is expanded, enriched, and improved—a novel entity with its own unique characteristics and dynamics (Azuma, 2015).

Seamon (2014) views engagement with a place as a complex, multivalent, and dynamic process. His framework is based on the assumption that this attachment or connection results from the interaction between the experience of a place and the creation of meaning associated with that experience (Seamon, 2014). The body itself is the central element in engaging with the surrounding urban space (Low, Altman, 1992). The body's position within space is fundamental both to understanding AR and to the medium's ability to offer new dimensions to the relationship between the body and the environment. The significance of the embedding features provided by AR, particularly those based on novels, is crucial for comprehending user participation and engagement within the palimpsest of the urban landscape.

Augmented Reality is proposed as a powerful tool to capture and visualize the inherent complexity of the spatiotemporal dimensions of novels. An AR system comprises interconnected layers, including the geographical, temporal, and topographical aspects of the narrative, the various scales of the unfolding plot, and the nuances of the characters' emotions (Makris and Moira, 2021). Instead of a static digital image, users encounter actions, scenes, and environments shaped by social, collective, cultural, and historical forces. The AR environment aims to create an immersive experience rather than provide a concise translation of the narrative from one medium to another. The proposed AR framework, based on literary texts, offers significant immersive potential because users are encouraged to explore the city by following the spatiotemporal fields and chronotopes of the novel (Bakhtin, 1981), resulting in a powerful and engaging experiential journey.

8. AUGMENTED REALITY, LITERATURE AND URBAN SPACES

The transformation of the urban experience through the integration of literary narratives, AR frameworks, and advanced three-dimensional digitization techniques, such as 3D GS, represents a significant epistemological shift for the 21st-century traveller. This convergence liberates the representation of the city from the constraints of a fixed material event, enabling access to the multifaceted layers of urban chronotopes and enhancing the visitor's sense of engagement within the spatiotemporal palimpsest of the urban environment. AR framework, guided by text analysis, reveals diverse versions of urban landscapes, offering a richer field of interpretation and perception (Makris and Moira, 2021). This approach shifts engagement from passive consumption of standardized tourist products to personalized, critical, and experiential discovery.

I. Construction of Multilevel Urban Timelines through Narrative

Literary narratives serve as a crucial interface that deciphers the culture, history, memory, and socio-political structures of a city, offering the essential intangible content for digital augmentation.

Disconnection from Contemporaneity and the Revelation of the City's Palimpsest. The novels disentangle the representation of the city from the illusion of contemporary reality, revealing distinct urban chronotopes. The city is understood as a palimpsest—a multi-layered text inscribed with historical events, collective actions, and personal testimonies. Through literary mediation, multiple perspectives are offered to the reader, allowing them to perceive

the city not as a singular reality but as a fluid continuum in which the past is actively recalled and reconstructed.

Anchor Points and Chronotopic Fields. Literary texts identify significant, distinct locations on the urban map—referred to as “concentrator points” or ‘anchor sites’—where multiple representations of urban space converge, revealing the city’s intrinsic character and accumulating its historical, social, and mnemonic significance. An AR framework based on these narratives enables users to trace the novel’s spatiotemporal fields and chronotopes within the physical urban environment.

Visualizing Complexity. The AR system serves as a powerful tool for capturing, expressing, and visualizing the inherent complexity of the novel's spatiotemporal dimensions. It integrates layers of geography, time, plot scales, and the emotional nuances of characters. This immersive environment aims to deepen the narrative experience, moving beyond a mere summary or direct translation from one medium to another.

II. 3D Gaussian Splatting: A New Visual Ontology for Urban Memory

The integration of the 3D Gaussian Splatting (3DGS) method in the proposed context is not merely a technical enhancement but introduces a novel aesthetic approach to the digital representation of the past, effectively engaging with the fluidity of literary narrative.

From Geometric Precision to Atmospheric Sensibility. Traditional digitization methods, such as photogrammetry, emphasize strict geometric reconstruction, producing “hard” models that claim objective truth. In contrast, 3DGS operates more impressionistically: it renders three-dimensional space through “clouds” of brightness and colour (Gaussians) rather than solid surfaces. This approach offers a new visual aesthetic that captures the “intangible” essence of the city. Instead of representing buildings as fossilized objects, 3DGS can depict decay, fog, light, and atmosphere—elements that compose the experiential memory of a place.

Technology as a Memory Mechanism. This technical peculiarity makes 3DGS ideal for visualizing literary chronotopes. Its ability to produce images that sometimes appear “spectral” or dreamlike enables researchers to reconstruct buildings that no longer exist—not as cold architectural designs, but as mnemonic traces. Thus, technology ceases to be merely a measuring tool and becomes an instrument of recall, blurring the boundaries between the real and the imaginary, and allowing users to experience the emotional depth of the city.

Dynamic Urbanity and the Flow of Time. Furthermore, recent advancements in the method, such as Dynamic Fields (Fischer, et al.2024), enable the incorporation of the dimensions of time and movement. Unlike static digital models, this system can represent changes in weather, lighting, and human activity. This capability is crucial for the visitor's experience, as the city is not depicted as a lifeless museum but as a living organism that evolves—precisely as portrayed in literary narratives.

III. Improved Urban Integration and Experiential Engagement

The AR framework significantly enhances visitors' engagement with urban environments by prioritizing their physical presence and movement, effectively transforming them into co-creators of the experience.

The Body as a Central Interface. The position and placement of the user’s body within space are recognized as fundamental to understanding the AR medium and enhancing user participation and engagement in the urban palimpsest. AR applications, particularly location-based ones, influence the presence and behaviour of the physical body within the socio-cultural context of the place.

Re-engagement Strategy. A key strategic enhancement is re-engagement, which incorporates the user’s movement through both familiar and unfamiliar environments. This process facilitates the discovery and manipulation of the inexhaustible layers of matter and meaning within urban locations. By navigating the city along narrative paths, the user shifts

from passive visual enjoyment to actively discovering actions, scenes, and environments shaped by social, collective, cultural, and historical forces.

Active and Immersive Participation. The novel-based AR framework transforms the user from a passive observer into an active participant, enhancing both mental and physical engagement with the complex nature of the city. The user becomes an “augmented reality nomad” who does not merely consume images but is physically and mentally involved in decoding the multi-layered urban landscape. This experience, driven by the juxtaposition of literary narrative (emotion, myth, history) and digital technology, transcends the dichotomy between lived experience and virtual reality. Users design sensory experiences mapped to the plot, identify landmarks, and explore urban monuments, while simultaneously inhabiting the past by reliving moments and scenes through digital representations. This process enables the re-appropriation of urban space: through the direct visual juxtaposition of historical traces with the contemporary environment, the traveller simultaneously experiences the "there" of myth and the "here" of reality. Thus, repressed or lost "cities" hidden beneath the material shell of the present are brought to the surface, transforming the walk into an act of revelation.

Immersive Spatial, Emotional, and Cognitive Understanding. This augmented integration, guided by the narrative framework and visually supported by advanced 3DGS visualization, fosters a profound spatial, emotional, and cognitive comprehension of the location. By connecting with the cultural memory embedded in the urban space, residents and visitors can gain a deeper appreciation of the origins and significance of the collective and cultural heritage. This connection leads to a pluralistic, holistic experience of the city's chrono-local depth and the continuity of its socio-political and cultural history.

9. DISCUSSION

This research highlights that the convergence of literary narrative, AR and three-dimensional imaging 3DGS is not merely a technological innovation but establishes a new epistemology for urban experience and digital cultural heritage. Through the analysis of the results, three main axes of contribution emerge.

Three-Dimensional Visual Ontology in the Humanities: The introduction of 3DGS bridges the gap between metric accuracy and the aesthetics of memory. Unlike classical photogrammetry, which requires strict geometric continuity, 3DGS functions as a “visual ontology” capable of modeling absence, temporal overlap, and atmospheric ambiguity. This method enables the visualization of urban heritage as a semi-material, probabilistic condition, avoiding the illusion of a single historical truth and allowing users to experience the ‘aura’ of the past.

From Tourism to Embodied Interpretation: Findings strongly support the narrative approach to AR interfaces. When digital content is guided by literary chronotopes rather than tourist stereotypes, urban cognition shifts from passive consumption to active, embodied interpretation. Literary ‘anchor points’—such as thresholds, ruins, or hidden neighborhoods—are transformed into semantic beacons. The user ceases to be a mere spectator and assumes the role of a walker-reader, co-mapping the city through movement and experienced detail.

Towards a New Epistemology of the Urban Visitor: This study proposes a new contract between the city and its interpretation. The city becomes legible through narrative and comprehensible through digital augmentation. The proposed framework does not produce a static “digital twin” of tourist information but rather a dynamic "twin of urban memory" that evolves in the field. This hybrid construction allows for the coexistence of multiple spatial and temporal grammars without asserting unique truth claims, thereby promoting a model of cultural heritage based on multiplicity and the dialectical relationship between the present and the past.

10. CONCLUSIONS – EPILOGUE

We demonstrate that cities are not merely physical containers of landmarks but layered mnemonic archives whose legibility depends on narrative mediation and digital re-materialization. The careful orchestration of literature, augmented reality, and advanced 3DGS methods radically transforms the 21st-century traveler's experience. The proposed system does not replace the physical environment with the virtual; rather, it establishes a "palimpsest chronotope" in which history, myth, and everyday practice are productively synthesized.

In this way, the city emerges not as a static exhibit but as a dynamic, open archive that invites continuous discovery and personal meaning-making, thereby redefining our relationship with cultural memory and urban space.

According to this methodological framework, the visitor to the historical cities mentioned as examples exists in the urban space in the present tense, moves along paths indicated by the literary narrative, derives sensory experiences based on the plot's mapping, receives messages, and communicates with other attendees. The visitor locates landmarks and navigates urban monuments through multiple literary references. Simultaneously, they can inhabit the past by reliving moments and recalling images and scenes from history. Through augmented reality, visitors have the ability to visualize buildings that no longer exist, explore the form and use of spaces during significant periods with the aid of various archival sources, and apply multiple cultural layers to perceive the continuity of historical time and changes in socio-political events. This approach enables a multifaceted, holistic experience of the city.

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