

Revitalising and Renovating the Visitor Experience in the Historic Piazza San Marco; Based on the Installation Project Generated by Midjourney AI

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ABSTRACT

The historic San Marco Square, a UNESCO World Heritage Site and Venetian architectural symbol, will encounter a challenge in balancing its historical relevance with the evolving demands of a modern public space. This article investigates the potential of artificial intelligence (AI), specifically Midjourney AI, to revitalise the Square's visitor experience while maintaining its distinct identity. By studying the Square's spatial features and "Quality of Place" specifications, this paper recommends the installation of AI-powered installations to enhance comfort and social interaction. During the period which these installations are exposed to customers and visitors, the goal is to preserve the historical context while also inspiring people with a renewed sense of amazement and participation.

Based on research in urban planning and cultural heritage management, the study claims that AI technology could be an effective tool for improving public areas while maintaining their historical integrity. This approach is consistent with the rising emphasis on human-centred design in public places, which values diversity, accessibility, and an impression of community.

Keywords: Piazza San Marco, Midjourney AI, Installation, Spatial Quality, Visitor experience

Introduction

For decades, San Marco Square has charmed visitors as the vibrant hub of Venice, Italy. The Square, surrounded by the renowned Doge's Palace, St. Mark's Basilica, and the Procuratie Vecchie and Nuove, represents the Venetian Republic's artistic and historical history. However, the needs of a modern public space necessitate a reevaluation of how the Square operates, and visitor flow must be considered alongside the Square's historical relevance and cultural vibrancy.

This article focuses on the possibilities of AI technology, especially Midjourney AI, to revitalise San Marco Square. By assessing the Square's overall spatial quality, the article recommends AI-powered installations to improve the visitor's experience. These temporary artworks aim to generate a feeling of wonder and involvement while preserving the Square's ongoing status as a vibrant public area. (Pereira Roders and van Oers, 2011) (Naheed and Shooshtarian, 2022) (Nocca, 2017)

The following sections explore the rich history of San Marco Square, analyse its current spatial qualities, and propose AI-powered installations that can revitalise the visitor experience. The paper concludes by emphasising the importance of responsible AI integration, which can add a new spatial experience to a historical context without harming its identity.

A Storeyed Past: A Journey Through Time

San Marco Square boasts a rich and well-documented history dating back to the 9th century. Originally, the area was a marshy basin bordering the Venetian lagoon. Through a testament to Venetian ingenuity, the area was gradually filled and paved, transforming it into the political and social centre of the Republic of Venice. The iconic Doge's Palace, a symbol of Venetian power and a masterpiece of Gothic architecture, rose on the eastern side of the Square starting in the 14th century. Across the Piazza stands St. Mark's Basilica, a dazzling example of Byzantine architecture, originally constructed in the 9th century and subsequently expanded throughout the centuries. Flanking the western side of the Square are the Procuratie buildings, which originally housed government officials and administrative offices. Construction began on the Procuratie Vecchie (Old Procuracies)

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in the 12th century, followed by the Procuratie Nuove (New Procuracies) in the 16th century. These grand structures now house museums and shops, further enriching the cultural tapestry of the Square. (Ammerman *et al.*, 2017)

Quality of Place and Square Standards: Redefining the Square's Public Realm

San Marco Square's viability as a public area depends on its capacity to satisfy recognised "Quality of Place" requirements. These include elements such as accessibility, safety, comfort, and social interaction. Square requirements incorporate aesthetics, historical significance, and cultural vibrancy. (Uzgoren & Erdönmez, 2016)

AI analysis can help design temporary installations that meet these requirements. For instance, AI-powered interactive displays might provide multilingual information and accessibility features, while information regarding visitor movement patterns could drive the layout of seating areas and performance spaces, encouraging a more energetic and inclusive atmosphere (Dinçer, Akyüz and Elike, 2022) (Figure 1).



Figure 1. *San Marco Square, (www.Googlemap.com)*

Transformation and Spatial Harmony

The transformation of San Marco Square from a marshy area to a grand public space reflects not only Venetian ingenuity but also sophisticated urban planning skills. The square's almost rectangular layout and the surrounding buildings create a sense of enclosure and monumentality that inspires awe. The repetition of arches along the Procuratie buildings and the colonnades lining the southern side fosters visual harmony and a sense of rhythm (Figure 2). The scale and height of the buildings surrounding the Square contribute to its grandeur, while the openings and arches in their facades offer glimpses of the city beyond and contribute to the overall skyline. This interplay of architectural elements creates a unique spatial quality that has captivated visitors and scholars for centuries. Studies on the Square's spatial qualities highlight the importance of both wind patterns and shadows cast by the surrounding buildings. Understanding these factors is crucial for any future interventions that aim to enhance the visitor experience and maintain the Square's historical and cultural significance. (Gümüş İ. and Erdönmez E., 2021; Erdönmez Dinçer E., Akyüz and Elike, 2022)



Figure 2. San Marco Square, View to St. Mark's Basilica and Bell tower, (www.theartpostblog.com)

Understanding Space: Beyond the Picturesque Facade

To effectively revitalise San Marco Square, a deeper understanding of its current spatial qualities and consideration of several key parameters is crucial:

Wind Patterns: The Square experiences strong winds, particularly during the Bora (Bora, originally defined as a very strong cold wind that blows from the northeast onto the Adriatic region of Italy, Slovenia, and Croatia.) season. Based on the investigation and analysis of wind patterns in San Marco Square, it is possible to establish light and spatial structures as temporary installations. Considering the strong wind that blows in the square in some cold seasons of the year, it can be said that these wind patterns, if properly planned for the time of holding, do not pose a particular threat to the holding of temporary exhibitions and the installation of related equipment. (Beaucage, Brower and Tensen, 2014)

Shadow and Access Patterns: Buildings around the Square cause substantial variations in shadow throughout the day. To improve pedestrian flow and comfort and foster a more user-centric environment, analyses could potentially be used to design temporary installations or shade structures. (Gago *et al.*, 2013)

Limitations and Considerations

San Marco Square, according to its historical value and the huge number of tourists it attracts, has restrictions on renovations or interventions. Any renovations must balance the need for improvement while preserving the Square's historical integrity and preventing undue wear and tear. (Dincer and Guzer, 2020)

Despite these limitations, AI technology presents fascinating possibilities for improving San Marco Square's operation and visitor experience. By carefully considering historical preservation, user experience, and environmental sustainability, AI-powered artworks may create a lively and engaging public place that respects the Square's rich legacy while catering to the requirements of a contemporary audience. (Erdönmez and Polat, 2011; Gümüş and Erdönmez, 2021)

Designing Installation Projects with AI: A Threshold for Exploring the Future

Imagine a square adorned with AI-generated, ephemeral light installations that dance with the changing Venetian sky. Interactive installations powered by AI could offer visitors unique perspectives of the Square's history or real-time environmental data. AI could also be used to create dynamic, temporary pavilions that provide shade, host performances, or showcase local art, fostering a sense of wonder and engagement. (Ploennigs and Berger, 2023; Rashid, 2024)

Due to its high historical importance, human destruction during its lifetime, the large number of visitors, and the risk of destruction and excessive wear and tear, San Marco Square has many limitations in its performance and use. For this reason, there are many features to improve the quality of visitors' experiences. The use of these capacities causes more interaction and cooperation of visitors with the public space of the square, creating a sense of place and strengthening its quality standards.

At the same time, it is possible to improve all the factors related to the visitors' experience by respecting the history, preserving the privacy of the ancient monuments, and observing the privacy of the square landscape with the help of artificial intelligence with installation projects. (Cruz *et al.*, 2023; Ploennigs and Berger, 2023; Radhakrishnan and Radhakrishnan, 2023)

Midjourney and perception of ancient monuments

The way artificial intelligence Midjourney looks at ancient monuments and how to imagine a known space in it completely depends on the user's ability to write commands and prompts. In fact, there is a preconceived notion about most of the famous artefacts in Midjourney based on how they are defined in relation to artificial intelligence, but these notions are completely changed by writing commands and user prompts and the effectiveness of commands from each other (Figure 3).



Figure 3. *-style raw -v 6.0 -ar 4:3 - generated by Midjourney AI, installation project for San Marco Square, By the authors*

Based on this, the output of several images generated by artificial intelligence Midjourney may have underlying differences based on the variability of other commands and prompts added to the basic prompt, due to the same background of that work, i.e. San Marco Square in Venice. (for example, the design of the installation project in San Marco Square for this article)

Finally, and at the time of writing the basic instructions, by defining the project and the artwork that is to be designed and produced, as well as by setting and determining: The type and angle of view of the project, style, type of finishing and design of the artwork, material, weather and climate, light, image dimensions, aspect ratio, and a wide range of features and settings related to image creation can create thousands of created images (Figure 4).



Figure 4. *-s 250 -v 6.0 -ar 1:1 - generated by Midjourney AI, installation project for San Marco Square, By the authors*

Revitalising and renovation the visitor experience in historic Piazza San Marco

To increase the quality of the sense of place and the experience of visiting the historical square of San Marco and to create a new artistic experience for visitors, we opened a new installation project as a colourful threshold to the world full of myth and history of San Marco.

The concept of creating a gateway for a new look at the basilica, the brick bell tower, and other buildings that surround the square from behind the coloured glass of the colourful installation.

The process of writing prompts and instructions for the generate of the Project of revitalising and renovating the visitor experience in Piazza San Marco

First, to define this project and choose the *style* of the artwork, the word *installation* is determined, which is the final goal of this project. In the next step, imagining ordering a photo to the photographer, we should write all our requests in the form of prompts and commands necessary for the type of image output we want (Table 1).

<u>-Cinematic (for example), [PHOTOGRAPHY TYPE] [SUBJECT/ACTION]</u>
<u>-[SHOT TYPE] [LOCATION] [FASHION] [YEAR] [FILM STOCK] [CAMERA] [DIRECTOR] [EMOTION] [LIGHTING] [COLOUR]</u>
<u>-[costume description] [fashion colour palette] [fashion brand] [fashion material]</u>
<u>--ar 16:9 (for example) [your choice of aspect ratio]</u>
<u>--s value (for example) [if you want to use the default Midjourney Aesthetic, value range= 0 - 1000]</u>
<u>--style raw (for example) [unless you want to use the default Mid-Journey Aesthetic to focus more deeply on your style keywords]</u>
<u>--w value (for example) [short for --weird, brings unconventional results, value range= 0 - 3000]</u>
<u>--s value --w value [default Midjourney Aesthetic with an unconventional touch]</u>
<u>▶ Organic Level ▶ Detail level ▶ Hyper Level ●Parameters</u>

Table 1. Overview of prompt structure in Midjourney AI, By authors

Dedicated prompt structure for the installation Project in San Marco Square

It is worth noting that in the process of writing prompts for Midjourney artificial intelligence, each time an image is generated, it has a specific result, and no output of the prompts is similar. Therefore, in the entire process of analysing the outputs of this artificial intelligence, all the focus can be on the selected outputs based on the project’s needs.

The next critical point is that even similar prompts in different generates have different results. This is why the valuation of Midjourney AI outputs is measured on the basis of each image created by it. Although in the new Midjourney artificial intelligence updates, new parameters have been designed to preserve the main character in the created images (–cref), which can cause the production and design of several output images around a subject, character, or even a specific building in the near future.

In the following, we have given the main body of the prompt related to the installation project for San Marco Square in general, and the outputs related to these prompts have also been given:

- architectural photography, cinematic,
- revitalise the San Marco Square in Venice, an intricate lattice framework made by colourful glasses,
- a contemporary style structure, sun shining through, designed by Renzo Piano, photo by Iwan Baan, respect original form, explore possibilities for adaptive reuse, integrate public spaces without compromising the monument’s historical integrity, eco-friendly materials, energy-efficient solutions, harmonious balance between the past and future, hyper-detailed, low crowd of people, natural light
- –style raw –v 6.0 –ar 4:3

The results of images generated by the above Prompts written according to the project's defined needs are shown in (Figure 5) and (Figure 6) as well as (Figure 7).



Figure 5. *-s 250 -v 6.0 -ar 4:3 - generated by Midjourney AI, installation project for San Marco Square, By the authors*



Figure 6. *-s 250 -v 6.0 -ar 4:3 - generated by Midjourney AI, installation project for San Marco Square, By the authors*



Figure 7. –s 250 –v 6.0 –ar 4:3 - generated by Midjourney AI, installation project for San Marco Square, By the authors

Conclusion: A Sustainable and Inclusive Future

San Marco Square captures Venice’s spirit, a city that has prospered at the crossroads of modernity and tradition. By combining AI technology with empathy and respect for history, we can design a Square that is not only visually appealing but also inclusive, sustainable, and sensitive to the demands of a modern public place. The possibilities are limitless, and as AI technology advances, the prospect of ever more immersive and engaging experiences in San Marco Square grows increasingly captivating.

However, it is critical to note that AI is a tool, not a replacement for the Square’s historical and cultural significance. AI-powered installations should be temporary and inconspicuous, aiming to improve the tourist experience while preserving the Square’s timeless appeal. Public engagement and community participation in the planning process are critical. By adopting a responsible and collaborative approach, San Marco Square could employ AI technology to drive positive change. This synthesis of historical significance with cutting-edge technology may result in a lively public place that inspires wonder, encourages inclusion, and serves as a paradigm for the future of urban life.

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