

Visual storytelling with GIS: 3D Perspective Analysis of the *View of Fuzhou*

Weixuan Li

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Contacts between Imperial China and the Dutch Republic via the Dutch East India Company (VOC) sparked artistic exchanges that influenced both sides. Thanks to research in the recent years, images and ideas of China in the Dutch Republic have been thoroughly examined (e.g., Weststeijn 2020). Nonetheless, the traces of Sino-Dutch encounters on Chinese art and society remains underexplored, with only few scholars touching on the reciprocal nature of these interactions (Gesterkamp 2020). This gap is especially relevant for Fuzhou, a provincial capital in Fujian Province that served as a key VOC contact zone after 1662 and hosted, as a starting point, two of the three major VOC diplomatic embassies to China in the 17th century. The visual materials created in Fuzhou may signal an earlier and distinct channel through which European topographical practices entered Chinese visual culture outside the well-studied imperial court in the 18th century (Whiteman 2020, Wang 2014, Sullivan 1989), yet it has attracted little scholarly attention.

The anonymous late-17th-century drawing *View of Fuzhou* in the Rijksmuseum (Fig.1) offers a unique material witness to the traces of Dutch influence in this understudied contact zone. It is, till now, the only known visual evidence from the Chinese perspective. This large-scale watercolour depicts the provincial capital alongside a VOC vessel and a Dutch inscription, misaligning with the Chinese pictorial tradition of both landscape and maps. In fact, it shows partial incorporation of European topographic conventions linking to possible influence of Dutch artistic practice—drawing ‘after life’ (*naer ‘t leven*), which set the Dutch apart from the Jesuits in bringing western visual materials to China (Whiteman 2021, Cahill 1994). Rather than treating this single object as grounds for claims about Dutch influence on Chinese painting broadly, this project uses the *View of Fuzhou* as a methodological test case, asking: can 3D spatial analysis reveal the traces of influence in a hybrid visual object, and what can this disclose about cross-cultural transmission of artistic practice in contexts where archival documentation is sparse?

To address this question, the project combines 3D elevation modelling in QGIS (Quantum Geographic Information System) and Blender with a perspective camera-reconstruction approach that matches homologous points in the painting to georeferenced locations in the present-day landscape. A Bayesian Markov Chain Monte Carlo (MCMC) procedure—a probabilistic method for estimating the most likely viewpoint and field of view consistent with the observed scene—is used to reconstruct where a camera would need to be positioned to reproduce the painted composition, thereby revealing, at least partially, the painter’s intention and practice (Whiteman 2021). The results indicate a moving viewpoint positioned over 900 meters above the bridge level, combining two view directions: one oriented toward the walled city and another following the river. This dual perspective simultaneously foregrounds foreground the Nantai suburb—site of the Dutch trading post—and to render the anchored VOC ship visible, while keeping the relative positions of landmarks close to

topographic reality (Fig. 3). The merging of topographical accuracy characteristic of Dutch practice with the moving viewpoints typical of Chinese landscape painting suggests that these spatial choices were deliberate rather than incidental, serving as evidence for Sino-Dutch artistic exchange. Although the colonial narrative often found in such East–West encounters does not apply to the Dutch in 17th-century China—where China remained a sovereign, dominant empire and the VOC operated on Chinese terms—the artist nonetheless operated within commercial constraints. The selective amplification of Dutch presence through spatial distortion may reflect the expectations of a VOC-connected patron, a hypothesis that awaits archival confirmation. The hybrid perspectives uncovered by computational analysis thus serve as evidence of the cultural negotiations embedded in the image itself.



Figure 1: *View of Fuzhou*, c. 1670 - c. 1700, watercolour, with pen and ink, 121cm × 157cm, Amsterdam: Rijksmuseum, NG-1988-13

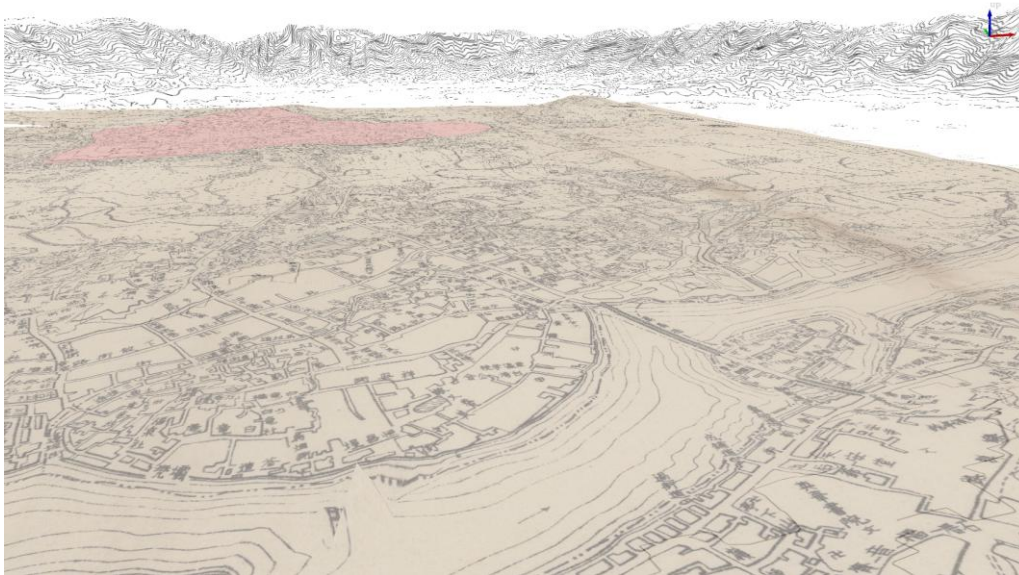
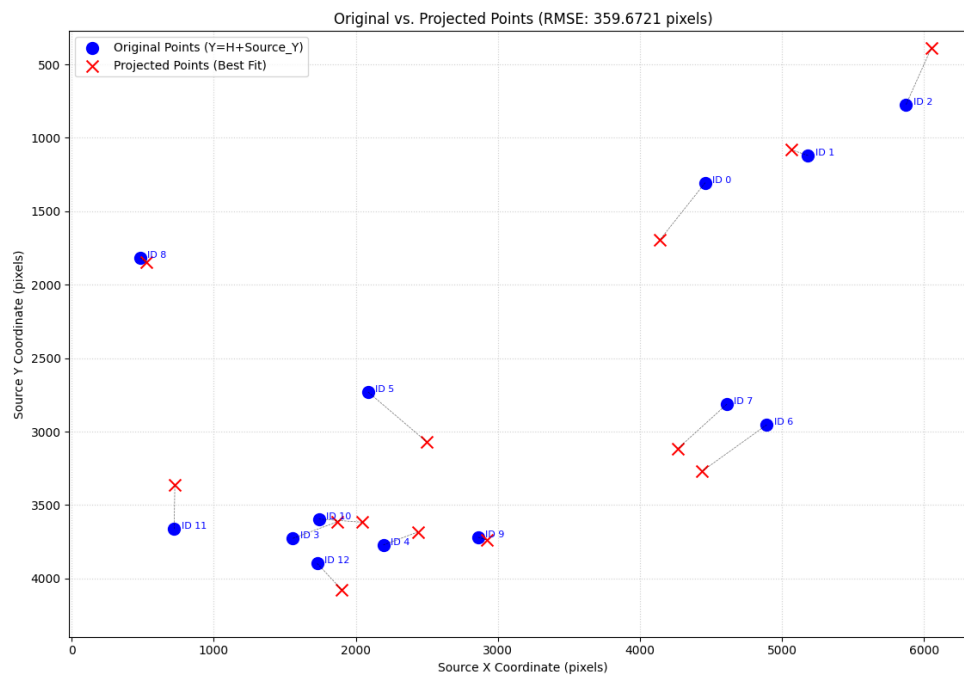


Figure 2: Preliminary 3D elevation modelling with a geo-reference 1938 map of Fuzhou where the early modern city walls (area highlighted in pink) remain in its 17th-century location.



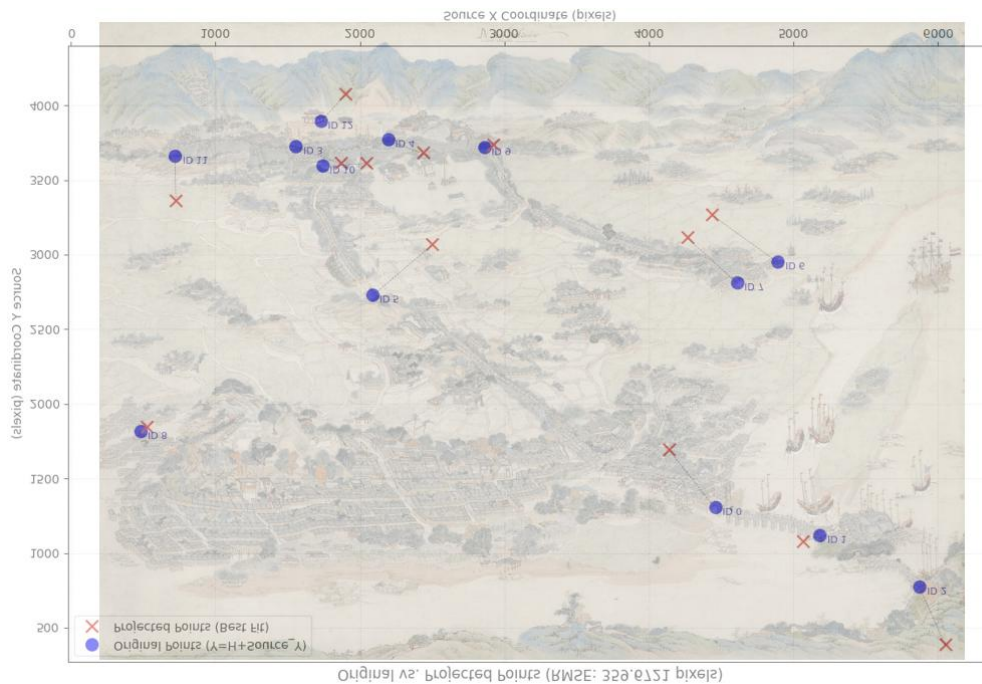


Figure 3: The Bayesian MCMC projection calculated locations vs the painted points (above) and its overlay on the top of the drawing

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