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The Latent Walk of the Deep Landscaper: Exploring Stylistic Diversity in Machine-Generated Plans

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Abstract

Concerns have been raised that connectionist approaches to design, particularly those using generative models, may result in stylistic homogenisation. This study aimed to examine whether a generative adversarial network (StyleGAN2-ADA) trained on heterogeneous landscape plan data would converge towards a singular aesthetic. A dataset of 2,000 diverse landscape plans was collected from online sources and used to train the model. The generative capacity of the model was evaluated by conducting latent walks— smooth interpolations between points in latent space—to produce new design variations. The results revealed a wide range of spatial formations, including grid-like, banded, and porous structures. These variations were found to reflect the diversity present in the training data rather than converge into a dominant style. The study demonstrates that connectionist design does not inherently produce a uniform formal language. On the contrary, it shows potential to support stylistic pluralism by encoding and generating diverse architectural expressions. These findings suggest that machine learning models, when trained on sufficiently varied data, can resist stylistic convergence and function as inclusive design tools. The approach offers broader implications for expanding formal diversity and rethinking authorship in computational design practices.

Keywords: Generative Design, Landscape Architecture, Latent Space, Architectural Style, Connectionism