Fresh Eyes

A framework for the application of machine learning to generative architectural design, and a report of activities at Smartgeometry 2018

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Abstract. This paper presents a framework for the application of Machine Learning (ML) to Generative Architectural Design (GAD), and illustrates this framework through a description of a series of projects completed at the Smart Geometry conference in May of 2018 (SG 2018) in Toronto. Proposed here is a modest modification of a 3-step process that is well-known in generative architectural design, and that proceeds as: generate, evaluate, iterate. In place of the typical approaches to the evaluation step, we propose to employ a machine learning process: a neural net trained to perform image classification. This modified process is different enough from traditional methods as to warrant an adjustment of the terms of GAD. Through the development of this framework, we seek to demonstrate that generative evaluation may be seen as a new locus of subjectivity in design.

Keywords: Machine Learning, Generative Design, Design Methods.