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Ruleset-rewriting for procedural modeling of buildings

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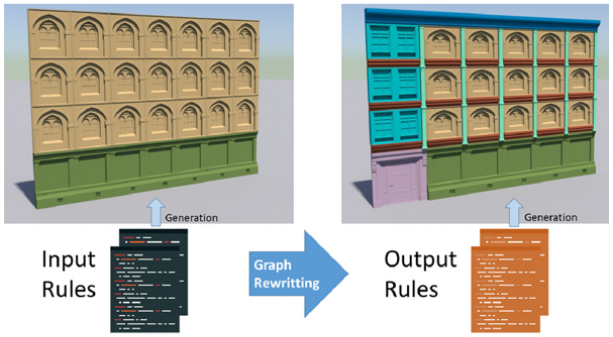

Procedural modeling techniques have emerged as a fundamental tool for automatic design and reconstruction of buildings and urban landscapes. In recent years, we have witnessed an impressive increase in the expressive capabilities of such techniques, being its main strength the possibility of generating large urban scenes with a small ruleset. In this paper, we propose what we consider the next stage in this process, where generic graph-rewriting techniques are used to transform input rulesets into new ones, thus allowing the automatic reuse, transformation and generation of rulesets. We showcase our system with an application to a high-level procedural language (based on the well-known CGA grammars) for facades. We demonstrate the practicality of this new approach by transforming the style of the input facade previously created to different styles. User studies confirm this result.

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