Urban models are key to navigation, architecture and entertainment. Compression, generating new façade designs and structurally comparing façades for classification, retrieval and clustering remain manual tasks.

New procedural modelling method to automatically learn a grammar from a set of façades, generate new façade instances and compare façades. We infer a model whose successive refinements are production rules tailored for each task.

We demonstrate our automatic rule inference on datasets of two different architectural styles. Time required to build a procedural model of a façade cut down from several days to a few milliseconds.

Example labellings. Can you see the logic?

Motivation

ECP 2011

Graz 2012

Use cases

Virtual architect

Visualization

Reporting

Compressor

Visual model

Procedural model

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References