

Additional Materials

In the additional materials we provide the results of additional evaluations of our model.

We tested our algorithm on selected examples which differ significantly from all the training examples. This test should help to understand the behavior of our model better. In Fig. 22 left there are two interleaved grids and one of them is shifted from the other. The completion recovers the structure of the facade and even though no similar example can be found in our dataset. We show users the completion, 88% of them think the completion is plausible. In Fig. 23 all the examples are in a selected Indian style, but the structure of the incomplete facade is more complicated. 28% of users think the completion is as plausible as the ground truth. The reason why fewer users prefer our completion is that there is only one facade in Indian style in our training set, so the statistical model cannot encode the properties of this style. It is one failure case of our algorithm. We also tested our algorithm on a facade which has randomly distributed elements. See Fig. 24. 59% of the users think the completion is plausible. It is interesting to note that our completion also generates a random looking facade and does not complete the layout with a regular grid. In Fig. 25 we show another property of our randomized algorithm. Since our completion favors element compatibility and regularity, there are multiple competing factors for our completion model, e.g. regularity vs. presence of a door. It is possible to get multiple types of results with our framework. In this case, the highest ranked completion keeps the regularity of the facade, but does not add a door into it. We tested our algorithm on synthetic facades with complex patterns. See Fig. 26. Our completions do not recover the patterns correctly, because our statistical model only considers the simple pattern generated by interleaved grids. To handle this type of pattern requires a change to the model and not only more training data. We leave this problem to future work.

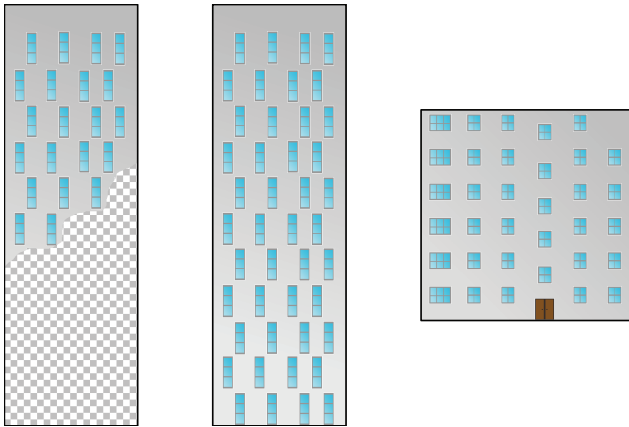


Figure 22: Completion result of a facade that differs from all the training examples. From left to right: incomplete facade, completion result, and the most similar facade in which the elements are shifted.

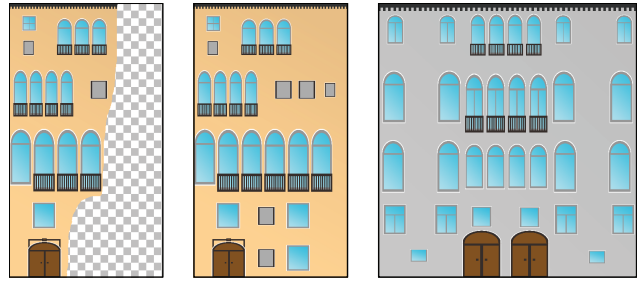


Figure 23: Completion result of a facade that differs from all the training examples. From left to right: incomplete facade, completion result, and the most similar facade style in the training set.

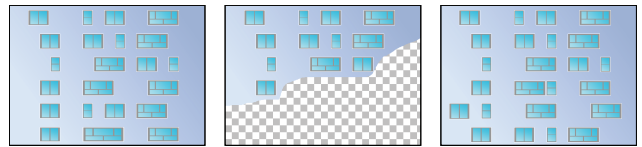


Figure 24: Completion result of a facade in which the elements are distributed randomly. The completion result is still plausible. The ground truth is shown left, the observed elements in the middle, and our completion on the right.

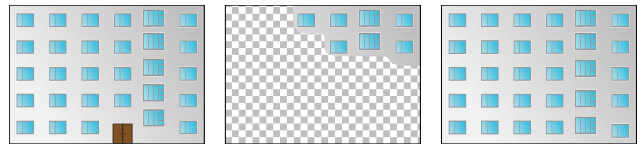


Figure 25: Trade-off between regularity and door placement. In this example the ground truth is shown left, the observed elements in the middle, and our completion on the right. Since our completion favors element compatibility and regularity, the highest ranked completion does not add the door in this case.

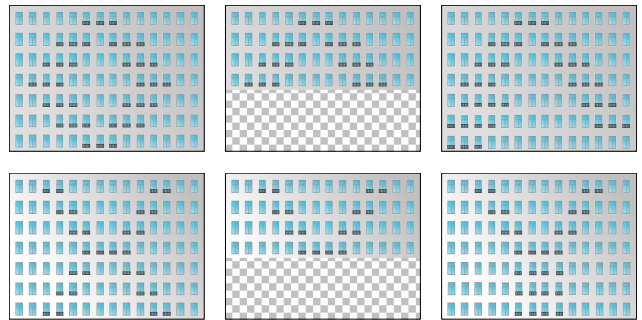


Figure 26: A limitation of our algorithm. In these examples the synthetic facades with complex patterns are shown left, observed elements in the middle, and our completions on the right. Since our statistical model only considers the simple pattern generated by interleaved grids, the completions do not recover the complex patterns correctly. In the bottom row the completion is still plausible, but in the top row the completion is very unlikely.