

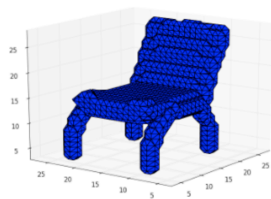
Poster Abstracts for SOCRS 2017

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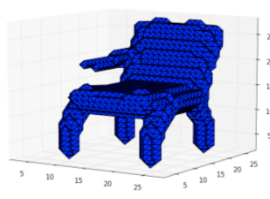
Poster Abstract: User-Guided Shape Generation

Converting a design idea into a 3D model is a time-consuming task, because it requires familiarity with the Computer Aided Design (CAD) software and cumbersome interactions on a 2D screen. Having a quicker and more natural way to explore design concepts will let designers quickly visualize their ideas and therefore shorten the iteration cycle.

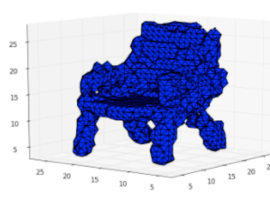
In this project, I present a prototype that learns the natural representation of chair shapes from 3D voxel data using an adversarial autoencoder, and then I evaluate the effectiveness of the prototype on tasks of editing an existing chair model as well as generating novel chair models from scratch. By optimizing the compressed vector of chair representations, the presented method is able to generate chair shapes that correspond to user inputs, and also tries to maintain the output as realistic as possible. It can also be used to show interpolation between multiple chair models, which might be useful to investigate the relationships and intersections between designs, and offer inspirations for creative designs.



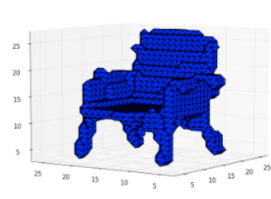
original model



apply edit



generated model



denoised