Authoring Tool High Concept Doc

Due Monday, Feb. 18, 2019

Authoring Tool Name: Chimera

Team Members: Wenli Zhao, Hannah Bollar

SigGraph Paper(s):

Main paper:

"Zoomorphic Design", Noah Duncan, Lap-Fai Yu, Sai-Kit Yeung, Demetri Terzopoulos, 2015.

Additional Papers for main reference:

"Zoomorphic: New Animal Architecture," H. Aldersey-williams, 2003.
"Probabilistic Reasoning For Assembly-based3d Modeling," Chaudhuri, S., Kalogerakis, E., Guibas, Landkoltun, V. 2011.
"Exploring Shape Variations By 3d-model Decompositionand Part-based Recombination," Jain, A., Thorm ¨ahlen, T., Ritschel, T.,Andseidel, H.P 2012.
"Deformation-driven Shape Correspondence." Zhang, H., Sheffer, A., Cohen-or, D., Zhou, Q.,Vankaick, O.,Andtagliasacchi, A. 2008.
"Smartvariations: Functional Substructures For Part Compatibility" Zheng, Y., Cohen-or, D., And Mitra, N. J. 2013.
"Ergonomic-driven Geometric Exploration And Reshaping" Zheng, Y., Dorsey, J., And Mitra, N. J. 2014.
"Boxelization: Folding 3d Objects Into Boxes" Zhou, Y., Sueda, S., Matusik, W., And Shamir, A. 2014.

Summary:

- **Main concept and need for the tool:**

The main concept of the tool is to implement a method to create zoomorphic shapes by merging an animal shape and a man-made shape. Zoomorphic shapes are man-made shapes that possess the shape or appearance of an animal. Zoomorphic shapes are often needed or desired in design of furniture, interior/exterior structures and household objects. They have a unique aesthetic and bring a sense of levity to design. Zoomorphic designs can be hard to create with traditional modeling tools and also hard to create conceptually. The tool will allow for easier creation of man-made objects with zoomorphic designs.

- **Type of user (artist, animator, TD, game designer, programmer, etc.)**

Artists and designers

- **Typical application(s)**

Typical applications include the creation of zoomorphic furniture, zoomorphic playgrounds, zoomorphic vehicles, zoomorphic toys, zoomorphic dishware, and other fun objects. Another potential application is to incorporate zoomorphic design into architecture or character design.

- **What does the tool produce as the output**

The tool produces a 3D model which is the visual lerping between two different 3D input meshes. Additionally, this output can be changed depending on how much we'd more we'd like to have one of the input meshes as the main of the output in comparison to the other.