Title: 3D Printed Faberge-style Egg
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My first encounter with 3D printing was at an LA Siggraph event called “Digital Sculpture” in which presenters demonstrated how they sculpted models in zBrush and Mudbox and then printed them out for display or prototypes for toys. Exploring the expo floors at the 2010 and 2011 Siggraph conferences, I realized that there were vendors, like Shapeways, that offered 3D printing to the masses as well. Being an engineer, I decided to develop a program in Houdini to create a Faberge-style egg.

To create my egg, I projected a curve onto the surface of an ovoid. I then wrote a program in VOPs to compute the basis at each point along the curve to properly align a decorative leaf bunch chain on the egg surface. Finally, I repeated the curve around the egg to complete the design.

While I initially wanted to print the egg like this, a survey of current 3D printing technologies revealed that only one material could be printed at a time. To compromise, I removed the glass portion and placed three tori to hold the curves together. Unfortunately, despite meeting the minimum thickness requirements for silver in the automated check on Shapeway’s website, my design still failed the human inspection test for fragility.

After three more iterations, I was finally able to print my design. I am more than satisfied with the results, and I hope that I can create more 3D printable designs in the future.