Computational Aspects of Fabrication, Spring 2015

Assignment 2: Parametric modeling

Due February 20th at 11:59pm.

Figure 1: Examples of 3D printable robots

For this assignment you will write an OpenSCAD (http://www.openscad.org/) script to generate a parameterized robot model. The entry point to the script will be a `generateRobot` module (i.e. function), which will take as input several parameters you will define. For example, the number of legs, the arm or leg lengths, body size, etc should be controlled through the parameters of the module. Keep the number of parameters small (not more than 5), but the more design variations you can generate with them, the better.

You will be responsible for:

1. Writing the script to generate the parameterized robot model
2. Demonstrate a few different designs generated with your script
3. 3D print one of your designs
4. Document your approach, parameterization, designs and experience with 3D printing. In addition to the write-up, submit also obj files for some of your designs
5. Extra Credit: create a modular design using body parts that can snap together