Using Programming to Create Images into Tactile 3D Objects

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In my project I attempted to create a tactile print of a painting from code in python to help the visually impaired have representations of said painting. An art organization (Unseen Art) did something like this however without code and instead just 3D modeling and the Mona Lisa. To accomplish my goal I planned to make a code to contour an art piece in two ways, by zone and by color. The program works by taking the painting file and putting it in a 3D program to contour it, and then I printed it. In my results, both contouring methods worked well, but differently. For the zone program you manually put in each contouring area, and with color it gives you a choice of high or low value for white and automatically contours it after around 30 minutes based on the coloration of the image (working from if white is low or high on the scale). The end result was several small wafer sized prints that had bumps to feel or see the painting. While the program did what I wanted it to, it was fairly messy since the programs' sensitivity (to brush strokes) and something with the printer (either head or filament). Overall the quality of the prints were not as I would have wished however a further experiment would be to make either a refinement to the program (to make the end product more clean) or a whole new program to be able to contour landscapes.

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