

# CS491



Computational Fabrication Final Project:  
Vancouver Flowers

By: Andrew Foster  
December 9, 2024

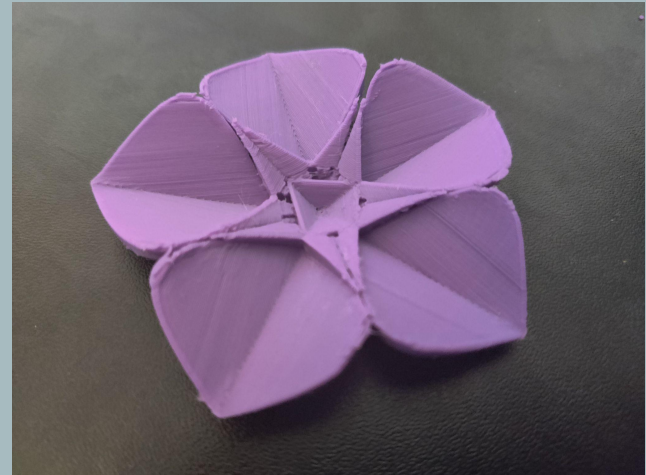
University of New  
Mexico

# Introduction

My project consists of 3 parts. A forget-me-not flower blossom, a vase that is based on the shape of a tulip, and a model of Downtown Vancouver, CA. I used importing GeoJson to make the model of Vancouver using the city's building footprints. I used the Extruder Turtle library to make the flower based objects.

# Forget-Me-Nots

The forget-me-not is generated using 2 functions, a draw-center and draw-petals. First it draws the center of the forget me not, and then using a variable num\_petals draws that number of petals. Since it is a forget-me-not, the number of petals is set to 5 within the script. I think that the petals for this print turned out really well, incorporating non-planar z movements and techniques that I haven't used heavily before.



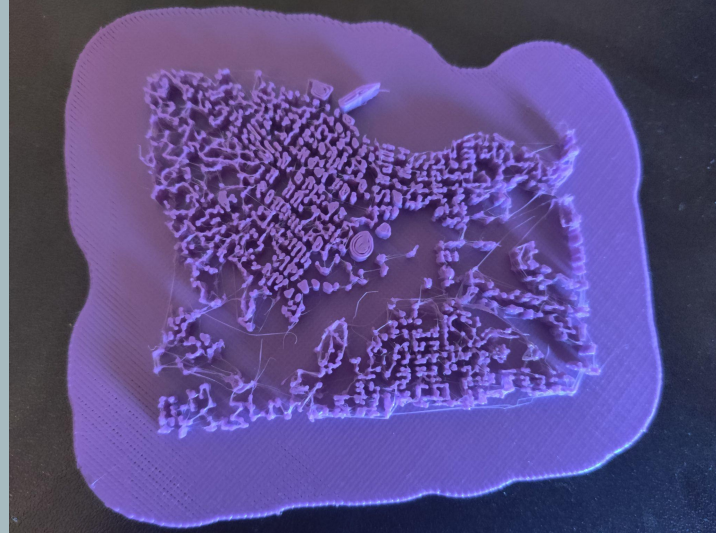
# Tulip Vase

This was made a lot easier since I built off of my forget-me-not code. This script creates lines where you can change the height, radius of the top and bottom, and number of petals (bumps) at the top. Then I loft these lines while capping the bottom two layers to create a vase.

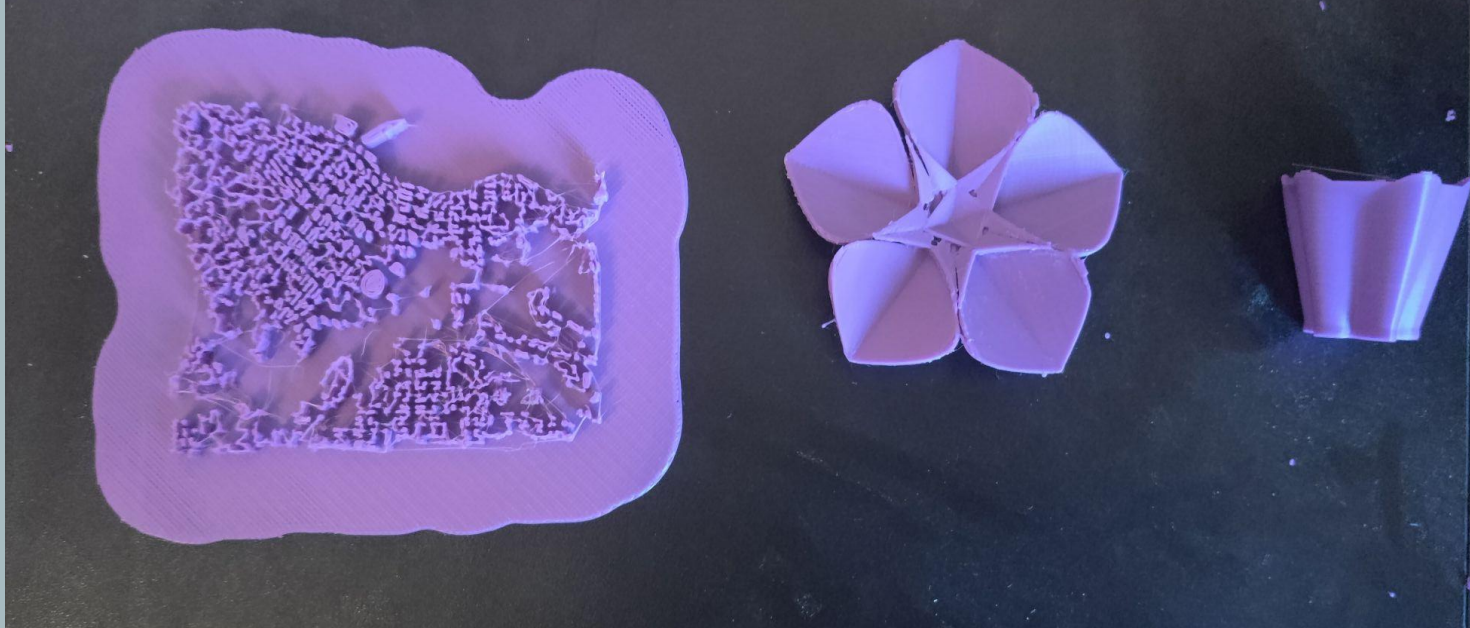


# Model of Vancouver

At first I downloaded the whole GeoJson, converted it to a normal Json, and then created a script in Rhino that generates the building footprints as polyline curves. I had to zoom in a lot to be able to see the actual object. I was able to get around this because Cura automatically makes it bigger when I was exporting it. The filament was struggling to adhere to my bed, so I ended up using a raft adhesion method.



# Outcome



Thank You

Andrew Foster: University of New Mexico