

Then Try This • Algorithmic Pattern Salon

The Crochet Protocol

Julia Vollmer

Then Try This

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Abstract

Looking at crochet patterns, crocheting embeds similar features as algorithms and coding. What could computer-generated crochet instructions look like? What would it feel like, when a device is programmed to give the crocheter the next instructions and the crocheter is the physical extension of the device? In my project „The Crochet Protocol“(2022) I dived into these questions by writing a program with simple rules to create crochet instructions that will be transmitted to me through a wearable device. The motor vibrations of the device can only be felt by me, the wearer, who has to follow a new protocol and become accustomed to this new sensory feeling. The protocol was the result of experimenting with different approaches for translating crochet patterns into code and vice-versa. Through juxtaposing crocheting and code, I defined seven basic steps and formulated general rules that I put into code, which will generate patterns that seem random and arbitrary at times.

The Crochet Protocol



Figure 1
The Crochet Protocol (2022) -Julia Vollmer

Introduction

What are the similarities between crochet and code? What would it be like, when a device is telling the wearer what to do?

As someone who enjoys both crocheting as well as coding, I was drawn to explore the possible connections between the two that I perceived. My project “The Crochet Protocol” (2022) consists of a wearable bracelet

with an ESP32 and three vibration motors which are used to transmit generated instructions. The wearer is told through vibration signals the next instruction and it is their task to interpret these signals and follow the loops and decisions of the protocol.

This project is an exploration of the interaction between crocheting, the code, the wearer and the controls through the machines. Is it possible to translate code to crochet or vice-versa? What does it take for the wearer to learn and understand the instructions given through the wearable device? What are the power dynamics in place or is it a collaboration between the machine and the wearer? And what is the sensory feeling and the implications of the bracelet?

The protocol is previously agreed on with simple rules. The creative choice regarding crocheting is taken away from the wearer and they are simply reduced to completing the work imagined and timed by the device.

Crochet

Within the crocheting communities, it is widely agreed on that crocheting cannot be easily replicated by a machine as “there is no similar mechanism for making the transverse chains that are another definitive attribute of hand crochet. A machine that can produce true crocheted fabric therefore remains to be devised.”^[1] Therefore, crocheting lends itself perfectly to the scenario of the machine in need of human labor. “The Crochet Protocol” in this way also explores the idea of collaboration or interplay between the machine and the wearer.

Experiments

As Capunaman, Bingöl and Grusoy have pointed out in their exploration of three-dimensional crocheted objects, crocheting has computational aspects^[2]. In my own research within the two-dimensional space, I started testing different patterns and instructions to combine crocheting and programming.

In order to explore these aspects, I early on experimented both to crochet from code and code from crochet. I attempted to crochet a Processing code pattern with different approaches and also write Python code based on crocheting. Processing and Python were chosen based on my own preferences, but also to test both a more graphical and a less graphical program.

Approach 1:

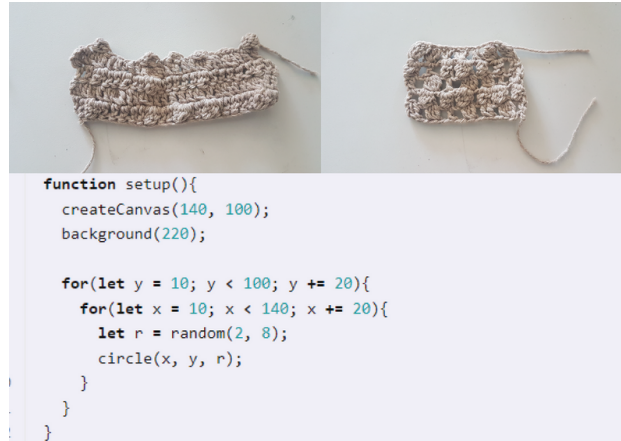


Figure 2
A stitch correlates to a circle with random size
(Processing)

Approach 2:

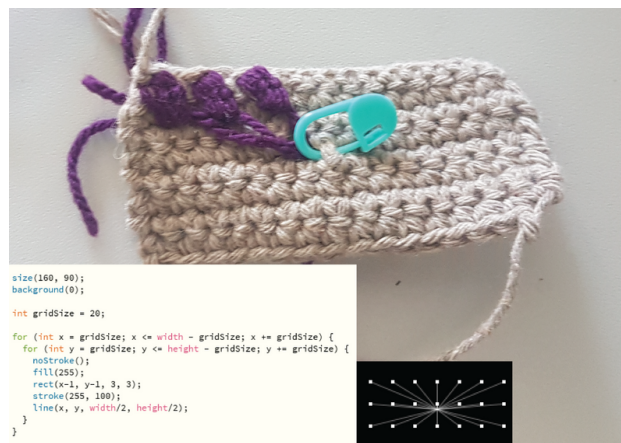


Figure 3
The initial canvas size is crocheted and a second color is used for the drawings on the canvas

Approach 3:

#What would crocheting maybe look like in Python?
#Speculative code that is not working
#Classes for different Parts

```
def magicRing(length):
  chains = []
  for chain in range(length):
    chains.append(chain)
  return chains

class Ball:
  def __init__(self, size, increase, color):
    self.size = size
    self.color = color
    self.increase = increase
```