Piping Workflows,
Or Outputs to Inputs and Back

By Romello Goodman

ACM SIGGRAPH SPARKS Session – Sept 24, 2021

My names Romello 👋🏿

- By Day, I’m a Sr Software Engineer at The New York Times 📰
- We’re Hiring: ✨ nytco.com/careers ✨

My names Romello 👋🏿

- By Night, I’m a creative technologist
- I ❤️ the web
- Twitter @mellogood
- My artistic practice is Good Graphics (goodgraphics.xyz)

Piping Workflows,
Or Outputs to Inputs and Back

| , The Pipe Operator

- A pipe is a form of redirection
- Used in Unix-like operating systems
- Directs the output from a command/program to another command/program

Piping Commands

```
command_1 | command_2 | command_3 | .... | command_N
```

Piping Commands: Secret Santa Example

```
sort-names.js | pair-names.js | email-list.js
```

Piping Commands: Secret Santa Example

```
sort-names.js | pair-names.js | print-list.js
```

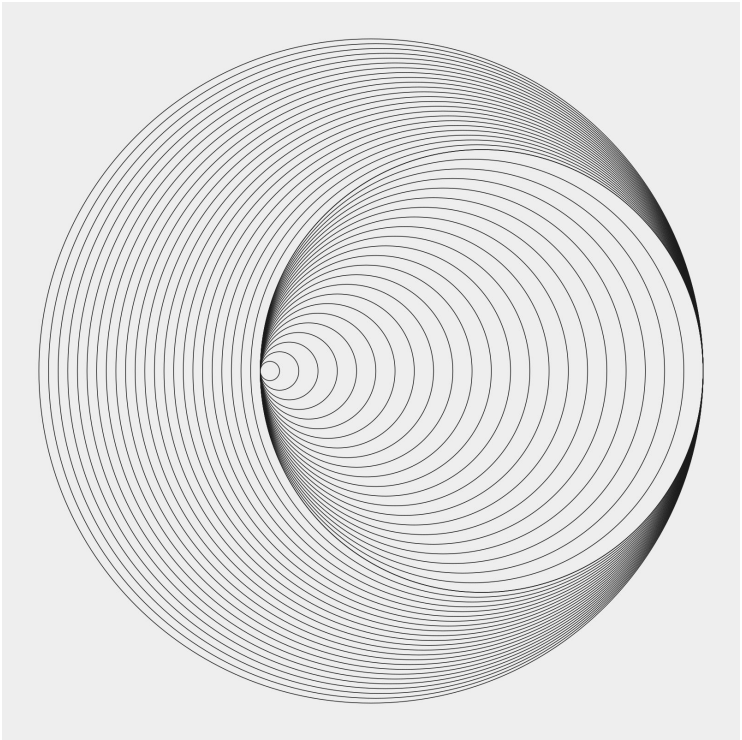
My Artistic Practice

```
sketch graphic | code graphic | $output
```

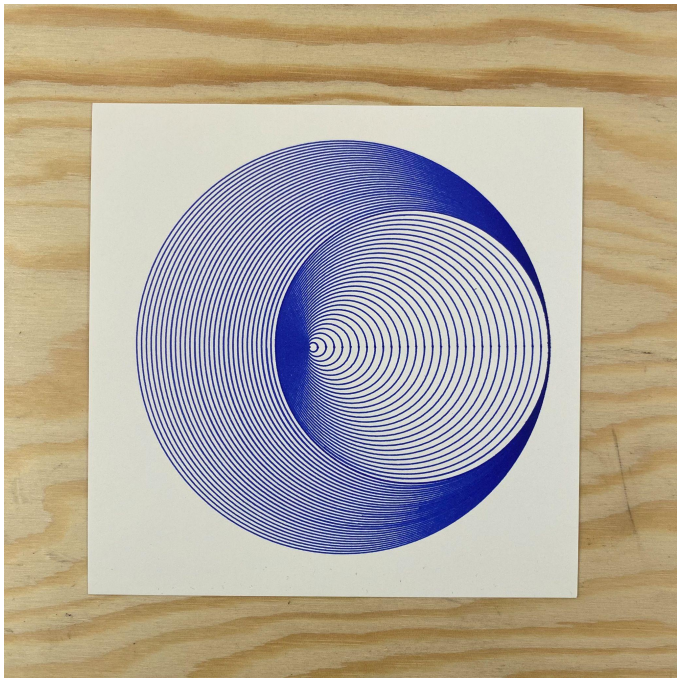
Code

```
const draw = (svg) => {
  const numberOfCircles = 30;
  const height = svg.height * 0.6;
  const halfHeight = height / 2;
  const fourthHeight = halfHeight / 2;

  svg.times(numberOfCircles, (index) => {
    const radius = height - svg.map(index, 0, numberOfCircles - 1, fourthHeight, halfHeight);
    const translateX = svg.map(index, 0, numberOfCircles - 1, 0, fourthHeight);

    svg.circle(svg.width / 2, svg.height / 2, `${radius}px`, {
      transform: `translate(${translateX})`,
    });
  });

  svg.group(
    () => {
      svg.times(numberOfCircles, (index) => {
        const radius = halfHeight - svg.map(index, 0, numberOfCircles - 1, 0, halfHeight);
        const translateX = -svg.map(index, 0, numberOfCircles - 1, 0, halfHeight);

        svg.circle(svg.width / 2, svg.height / 2, `${radius}px`, {
          transform: `translate(${translateX})`,
        });
      });
    },
    {transform: `translate(${fourthHeight})`}
  );

  svg.draw();
};
```

Code | Graphic



Code | Graphic | Pen Plotter | Prints



Code | Graphic | Pen Plotter | Prints

Code | Graphic | Pen Plotter | Prints | Mixed Media

Piping and Generative / Algorithmic Art

- Art is more than just the final piece
- Artistic practices are a workflow and a process
- Generative Art is an opportunity to create infinite workflows with infinite outputs

Thank you for listening

ACM SIGGRAPH SPARKS Session – Sept 24, 2021

Creative Coding: Generative / Algorithmic Art and the Exploration of Authorship and Authenticity. Moderated by Casey Reas and Bonnie Mitchell

The September SPARKS is looking for artists that work with computer code to express critical and creative ideas in unique and innovative ways that relate to generative, algorithmic and creative code practices. We are also interested in issues of authenticity as exemplified by NFTs, and authorship which has been challenged by AI. We are hoping to showcase thought-provoking presentations coupled with a lively discussion centered around these contemporary issues.

The information age was ushered in with a radical disruption to the definition of art and authenticity. In the 1960s, pioneering artists began writing computer code to create their art. By collaborating with, and controlling the computer to produce the work of art, these artists challenged society's notion of authorship and authenticity. Most code could be easily replicated to produce similar results without the original hand of the artist. Code that went beyond basic commands and involved randomness, artificial intelligence, and machine learning produced works that superseded artistic intent and shared agency with the machine.

Today, computer code plays an important role in the production of a wide variety of types of artworks including interactive art, design, algorithmic art, animation, generative art, architecture, internet art, and so much more. Computer code does more than define the output of a work of art, it enables the artist to explore complex systems such as chaos, order, complexity, simplicity, regenerative processes and other dynamic systems that sometimes defy human comprehension. Through coding, the artist is free to break free of the limitations and constraints of software and traditional media and invent novel solutions to creative problems.

The controversy and excitement surrounding NFTs has also sparked a resurgence of interest in the issue of authenticity of a digital entity. As an artform that has traditionally had little to no economic value on the market, digital art produced using code or otherwise, is now sometimes sold for millions. How did this happen? Authorship is also being challenged as Generative Adversarial Networks (GANS) create works of art replicating existing styles. Artists using these systems often relinquish some artistic control to a system that was created using machine learning algorithms and now no longer needs them to direct the whole process.

Original Talk Summary

In UNIX piping allows for the output from one program to be used as the input for another. Using this framework we can explore Generative Art not just as an output but as system of inputs situated within larger artistic workflows. Furthermore, shifting the view to the entire workflow creates opportunities for human intervention and curation.