

Scraps Processing

An Fabrics Scrap Eco-Archival Project by Arnaud Jalbert presented to Sabine Rosenberg for course CART451(Fall 2023)

Roadmap

Roadmap	1
What is your theme/topic/goal/issue to be tackled - why is it important to you?	1
What is your data: where will you get it, will it be collected - how and why?	2
What medium(s) do you intend to use and why?	3
What form will your project evolve into - who is your audience?	4
At a very high level : what are the algorithm(s) that will be used and implemented to achieve your intentions?	5
Discuss how each of the two readings listed above have inspired/motivated your current choices with regards to the project.	6
Similar Projects Inspiration	7
Dear Data by Giorgia Lupi	7
Nicole McLaughlin Scraps Re-Use	7
David McCandless' Data Visualization	8
Storyboard	9
Process Flow	9
Visual Interface Mockup	10
Recording Scraps Mockup	11
Manually Assemble Scraps onto a Pattern	12
Automatic Matching of Scraps onto a pattern	13

What is your theme/topic/goal/issue to be tackled - why is it important to you?

When working with fabrics to create garments, there will inevitably be some kind of leftover scraps. Most people are conscious of this and will work in a way to minimize fabrics waste, but most of the time there will be small oddly shaped pieces left.

These scraps are not necessarily wasted. Many companies have systems and strategies to reuse or recycle the fabric scraps. Other organizations like [FABSCRAP](#) are dedicated to offloading companies of their scraps and up-cycle the materials as much as possible.

Due to the much smaller volume of scraps, small organizations or individuals do not have these systems in place. It would not be sustainable for FABSCRAP to commute to someone's home to pick up a very small amount of scraps. It can be very long for a small designer to have enough scraps to make a significant high quality garment. Even if they had enough scraps, there is a high chance it will be a wide variety of materials that do not necessarily fit together.

If everyone has a little bit of every fabric, wouldn't it be nice to share them with the other? One could use the white cotton of a couple of persons to make a shirt, the other could use nylon to make a bag. But it is not that easy to share that information easily. So what if there was a way to record the scraps one has with all the useful information in a common pool of data? That way, we could easily see who has what and share our scraps with the others.

What is your data: where will you get it, will it be collected - how and why?

My data will consist of records of fabric scraps that are leftover from projects that use textiles as a material. The scraps can come from fashion projects, quilt making, bags design, any practice that will create textile scraps. I intend on creating some kind of application to collect the data about the scraps.

The information about the scraps that will be collected is:

- The shape
- The dimensions
- The color
- The type of textile(natural or synthetic)
- A picture of the material
- The location

To be viable, the collecting needs to be quick and efficient, else it will not be practical to use and people will probably prefer to simply not record the scraps. I'm planning on using technology to get the shape, dimensions, color, picture and location of the material. Only the fabric type will need to be manually entered in an ideal setting.

These records can then be stored in a database. We could then use the database to create the interface of the project and the actual platform that will be used by the users.

I also plan on letting users digitally record their sewing patterns. This would be a great way to catalog sewing patterns but could also have very practical use as we will see later.

The way I plan to collect this data is by providing an interface where users can digitally draw the patterns with lines and enter the different dimensions.

What medium(s) do you intend to use and why?

I plan on using a web-based interface. In my opinion, it is the most accessible and practical way to create a platform. Since my target demographic might not be computer-savvy, I think it's important to use a platform that they are probably already

comfortable with and that doesn't need any kind of additional installation. I also plan on using some kind of phone application to record the scraps information. There are a lot of great frameworks available, like React Native, for mobile applications and it also gives access to a high quality camera(most likely).

For technology, I will need to use some kind of database. I plan on using Mongo. It is flexible and reliable. I should also be able to get support from the Computation Lab if I need to.

I could also possibly use the [Viro Framework](#) which is an augmented reality React Native project which could be used to create the measuring application.

The biggest challenge here will be to create an informative, practical, interactive, responsive, and enjoyable interface to the user. It cannot simply be a textual table of available scraps with the information, it needs to be visual and as close to the real scrap as possible.

What form will your project evolve into - who is your audience?

I want to create a platform that encourages up-cycling, sharing and community. By up-cycling, I mean giving the right tools to smaller artists and designers to let them make the most out of neglected material and fabric that would otherwise be used to do small projects or be wasted. I would like it to be some kind of “marketplace” where people can exchange and share their scraps and leftover material from projects so they can be used to their most optimal potential. I want to encourage people to think further when starting a project. Instead of buying new materials straight away, they can look on the platform to see if they can get some or maybe everything they need from scraps and unused resources. This would be a more sustainable way to create but also make it more affordable. I also hope it can encourage collaboration and communication

between creators and practitioners. I have mentioned fabric scraps, but it could potentially be used for other materials like zippers, threads, old clothes, old tools, anything that could be useful.

I would also want it to be a way to digitize sewing patterns. Not only would this be a great way to share sewing patterns but it would be extremely practical. Users could use the pattern to see if different scraps could fit the pattern they want to use and play around with scraps to plan how they will use them before even having them physically. This process can also be automatized. Given a certain set of scraps, it could try to align them in a way that they can fit the pattern with certain rules that need to be followed like the gap or overlap between the scraps, the type of material, the color, the location of those scraps, and others.

At a very high level : what are the algorithm(s) that will be used and implemented to achieve your intentions?

The first algorithm I intend on implementing is the process to get the shape and dimensions of the scrap with a camera. I know there are already a lot of technologies available to achieve this. The challenge will be to identify the right algorithms to get the right information in a fast and reliable way. My first intuition would be to use AR technology. AR already has built-in functionalities to scan the environment and estimate distances between certain points from the camera. This could be a great starting point for me. I could then find a way to identify the edges of the scrap and find the dimensions.

The second algorithm I would need to implement is a system to group and sort the different scraps. This is pretty straightforward. It's a matter of doing the right queries

and filtering the right records. After filtering the right information, the challenge will be to display them in a practical, informative and interactive way.

The third algorithm will be the scrap to pattern matching algorithm. This could be a very complex thing to do. If there are a lot of scraps to choose from, a normal algorithm for this would be too long to solve. I was thinking of using machine learning to solve this problem. I could create a “fake” dataset of scraps in order to train the algorithm. Then, the ML model could be used on real scraps records to see if it is possible to assemble the scraps together in an efficient way.

Discuss how each of the two readings listed above have inspired/motivated your current choices with regards to the project.

I feel like the following sentence from the *The Point of Collection* reading resonates with my project:

It's easy to forget that the people collecting a data set, and how they choose to do it, directly determines the data set. -Mimi Onuoha

I think that by letting actual artists, crafters and designers create their own dataset, we give ourselves the best chance to create a high quality and meaningful pool of data. In this project, collecting data has a cost. It requires time from the user, manual manipulation and verification that the scan is appropriate and of high quality. This “cost” will probably mean that the users will think twice before collecting data, maybe asking questions like:

Is this scrap still useful?

Can I, or someone else, actually use this?

Is it worth the time it takes me to record it?

While this may slow down the rate of incoming data, I believe it will ensure that the records are worth the time of the other users. We are used to very fast data collection and datasets so big that we can't even analyze them ourselves. Slowing down data collection forces us to think about the data we're collecting and give more value to the data.

I also think that letting the users of the platform collect the data themselves empowers them, gives them control. My job here is simply to give them all the right tools to do so.

Similar Projects Inspiration

[Dear Data](#) by Giorgia Lupi

What really inspires me about this project is the manual and slow methods of collecting data. It's a little bit of what I am trying to accomplish in my project as well. What this project shows and why it convinces me to go ahead with it is that it shows that the volume of data does not have to be large to be useful and meaningful. I would even say it shows the opposite. Since the data is carefully collected, it has immense quality and value. It has a lot of context and care put into it, even when it comes to its visualization. The two participants probably learned a lot more by looking at this small set of data that was carefully noted rather than looking at the millions of data points they could have collected from their cell phones or computers. This is a methodology that will follow into my project. It's important that the collected data is meaningful and useful.

Nicole McLaughlin Scraps Re-Use

Nicole McLaughlin is a designer who's practice centers around reusing scraps, used clothes, food wrappers or even food waste to create garments. She has released a

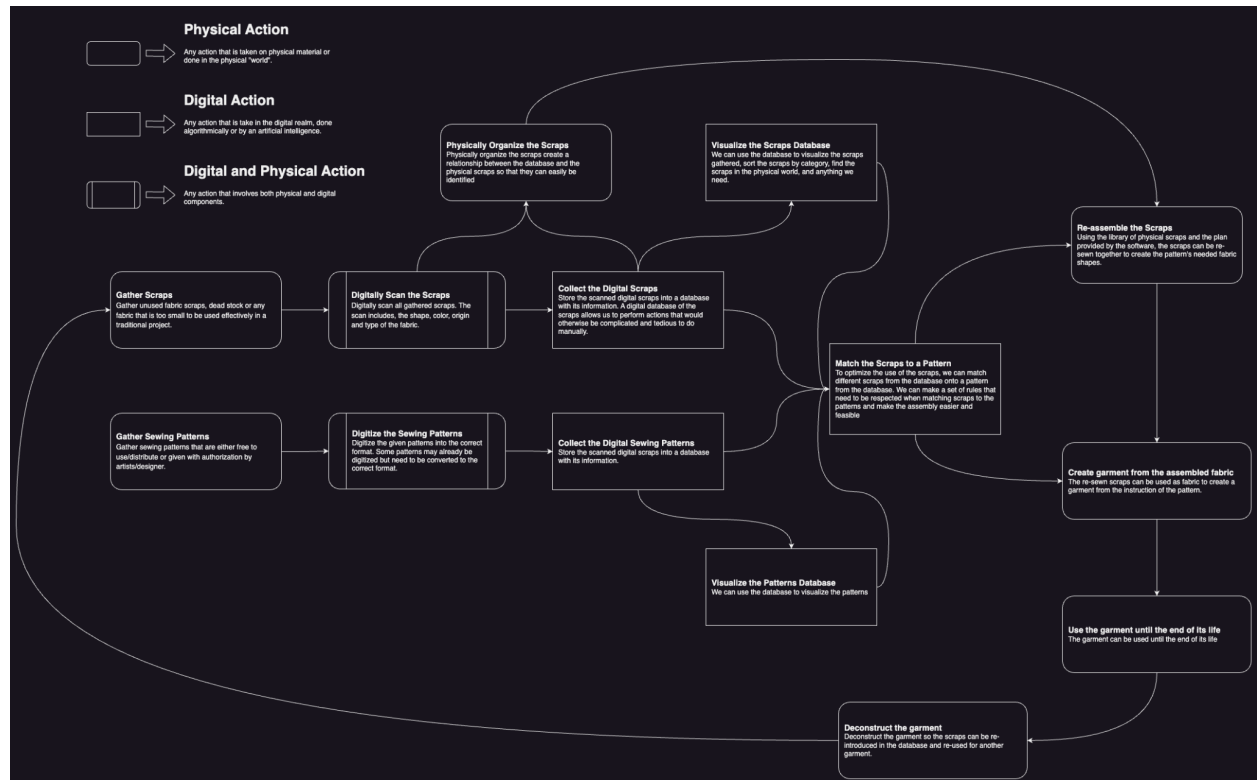
[book](#) with her pieces but she has plenty of projects on her [Instagram profile](#). Her pieces do not necessarily have real practical use or purpose (but some of them do!) but I think they show what is possible to do with neglected materials and scraps. I think she's trying to convey that the material is not what's stopping a project getting started but rather how you use that material and how the creativity behind the methods is what matters most. I feel like it heavily relates to my project. The foundation is the same: Making the most out of neglected materiality. The stunning projects she makes just shows how relevant a platform like the one I'm trying to make can be.

David McCandless' Data Visualization

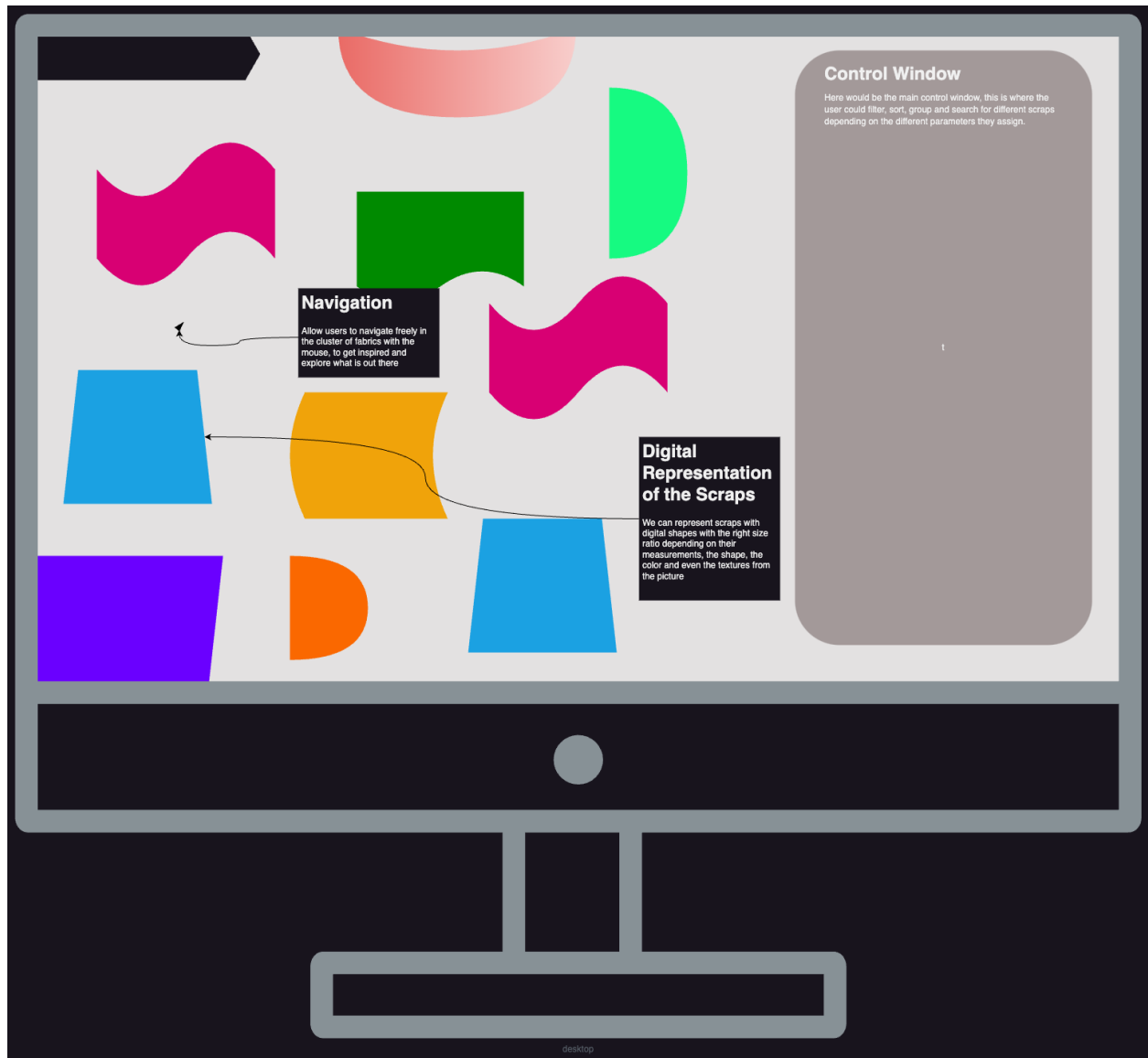
[David McCandless](#) is an artist that has done multiple data visualization projects and also written books about the subject. He is also the founder of [Information is Beautiful](#), a website dedicated to data visualization and design. I am using David's work and the content of "Information is beautiful" as an inspiration for creating the interface of my platform. If I want the platform to be useful and informative, I need to think about how the data will be displayed to the user, how it will be categorized, sorted and filtered so that the user can easily find what they need or discover something that they did not know they needed. David's work is very informative and educational, it will be a great reference to have when creating the platform.

Storyboard

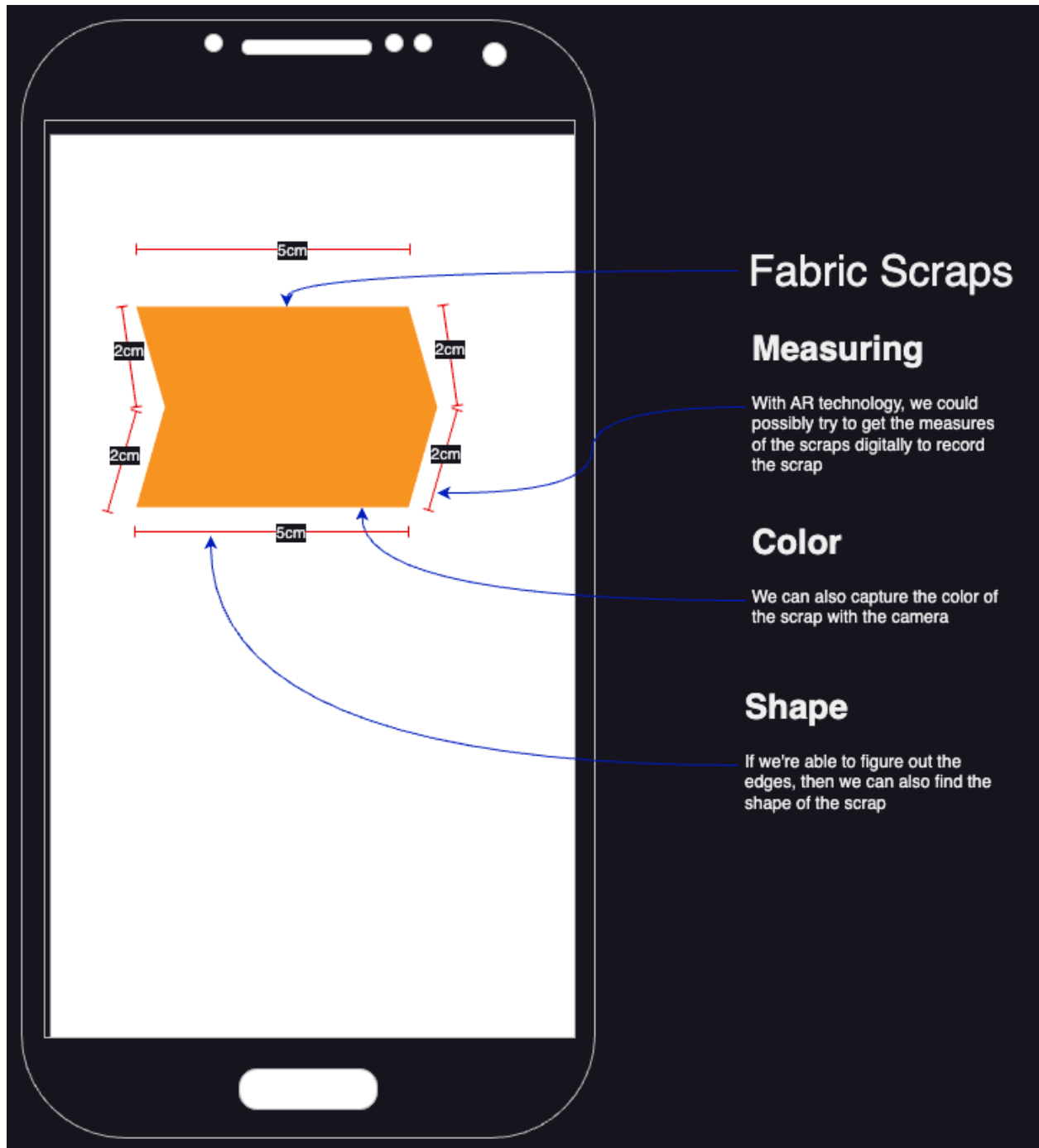
Process Flow



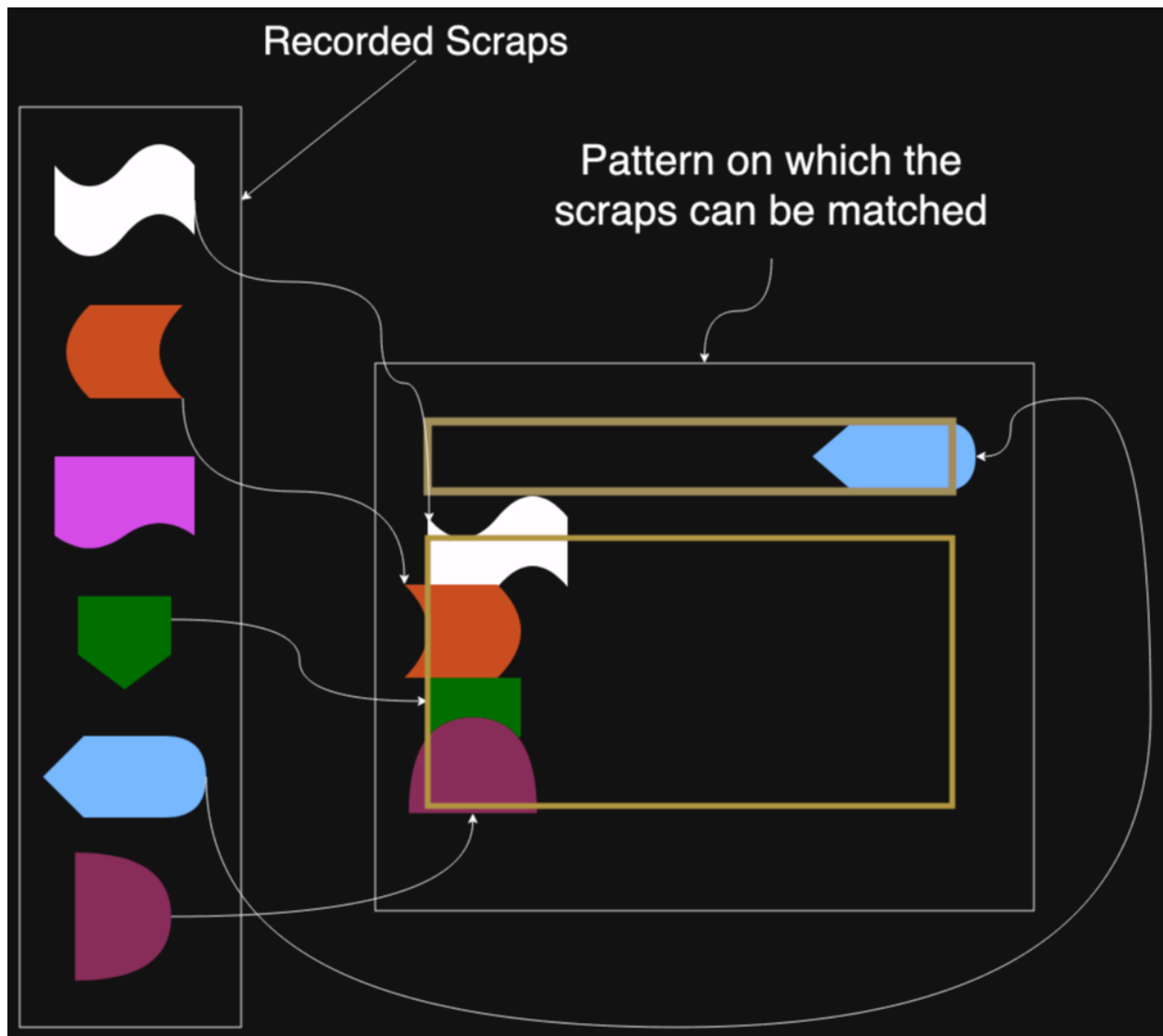
Visual Interface Mockup



Recording Scraps Mockup



Manually Assemble Scraps onto a Pattern



Automatic Matching of Scraps onto a pattern

