# Personal Fabrication

## #Plotter Twitter

Larry Yu & Katiana Wieser

# Personal Fabrication

# What's Up with Personal Fabrication?

Analog ➜ Digital; Digital ➜ Analog Pattern

1. Analog ➜ Digital converter turns physical objects into digital representations
2. Digital ➜ Analog converter turns virtual objects into physical objects

A more complex process but also offers more ***flexibility***

# Translating into Digital forms lets you solve problems with SOFTWARE

# Personal Fabrication for Consumers Checklist

- ❑ Hardware & Materials
  - ❑ Users can fabricate intended object
  - ❑ Build off accessible hardware
  - ❑ Reduce upfront investment
- ❑ Domain Knowledge
  - ❑ Bridge knowledge gap of consumer beginners
  - ❑ Reduce technical skill required
- ❑ Interactive Feedback
  - ❑ What you see is what you get
  - ❑ Users can see and respond to what the final output will look like
  - ❑ Support exploration
- ❑ Machine Knowledge
  - ❑ Reduce physical skill required
  - ❑ Bridge knowledge gap of how to use the machine

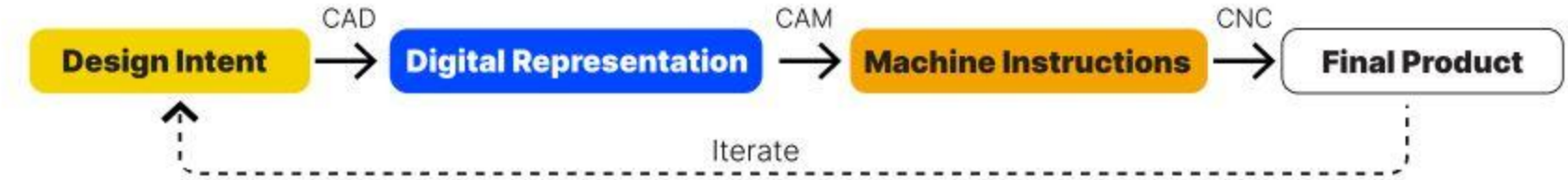
# What's next?

Anything...but based on trends in computing here are some ideas

1. Mobile Fabrication
2. Collaborative & Social Fabrication
3. Ubiquitous & Pervasive Fabrication
4. Shared Repository of Physical Objects
5. Physical Object Synthesis
6. Open Source & Crowd Fabrication

# #Plotter Twitter

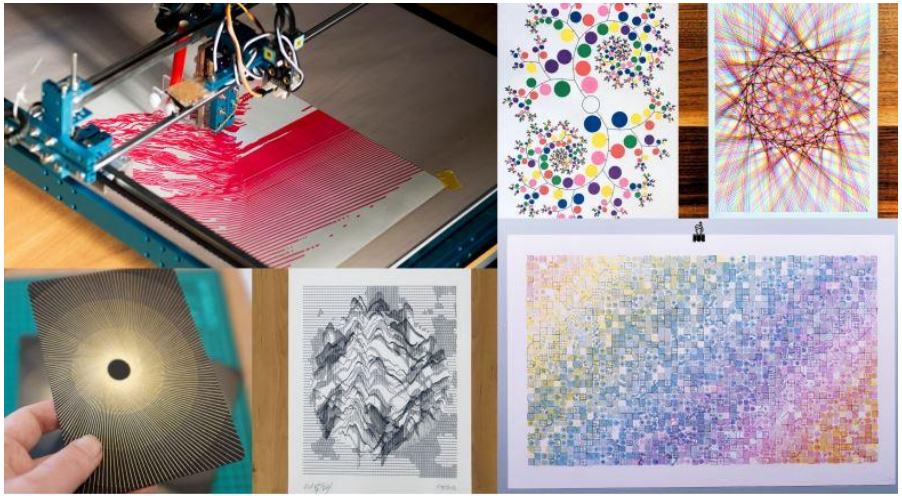
# The Canonical Workflow




## Is this a definitive formula?

# #PlotterTwitter

- Personal fabrication involving plotters - computer controlled drawing machines
- Members share their projects, process, and questions through #PlotterTwitter
- Small scale, customized manufacturing challenges the canonical workflow



# Novel Workflow Aspects

- Users are able to ‘tap in’ to the collective knowledge of the community
- Failures/misplots are more seen of as ‘happy accidents’
- The plotters, and even the workflow itself, are seen as integral parts of the actual art

**“Digital fabrication can be *more* than a series of steps, that materials have agency *alongside* a user’s goals, and that opportunities for creative exploration are *more important* than seamless control.”**

# Activity

# Looking at Existing Projects

1. Split up into groups, ~4 people
2. Check out one of the Personal Fabrication Research Projects
3. Critique & Discuss the project with your group
4. Share out some comments with the class

# Suggested Projects

- Shape-Haptics
- Embr
- Towards Decomposable Interactive Systems
- FoolProofJoint
- InfraredTags
- Print-A-Sketch

## Critique Suggestions:

- What is the goal of the project?
- How are researchers going about their goal?
- What stood out to you about this project?
- How do the readings relate to this project?
    - What Fabrication Challenges are they addressing?
    - How are they addressing user agency?

# Discussion Questions

Let's Talk!

- Where do you see personal fabrication going in the future?
- The authors spent a lot of time comparing personal fabrication to computing trends, what if anything could be gained from approaching from the more analog making side?
- Do you think there's anything missing from the 6 Challenges listed in Personal Fabrication? How does it compare with the ideas presented in #PlotterTwitter about user agency?