

Of Muppets, Metaballs, and Ballroom Dance

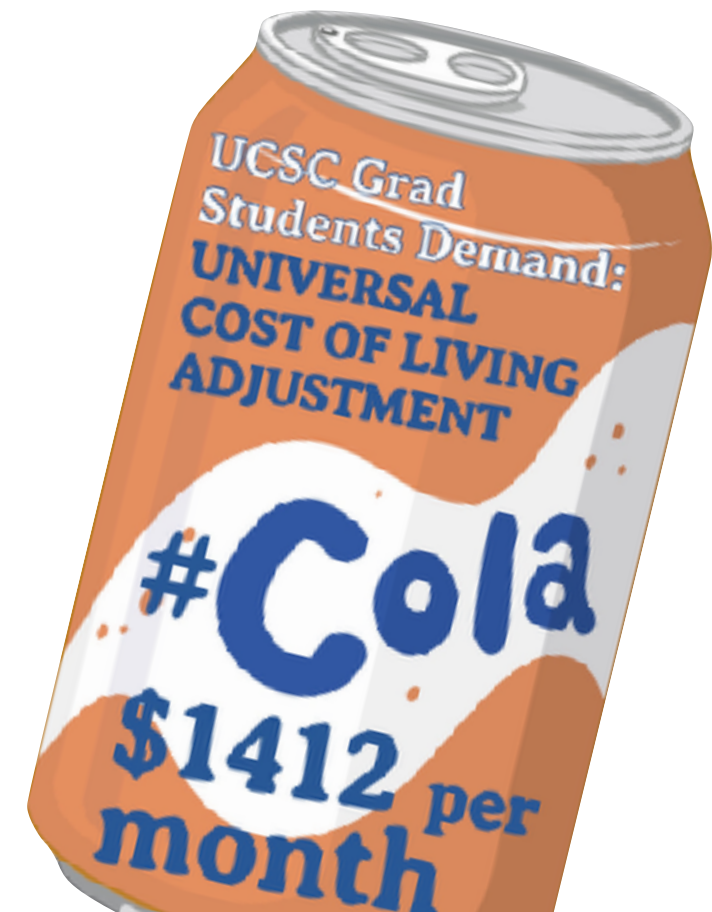
(dr) Kate Compton

UCSC

@galaxykate

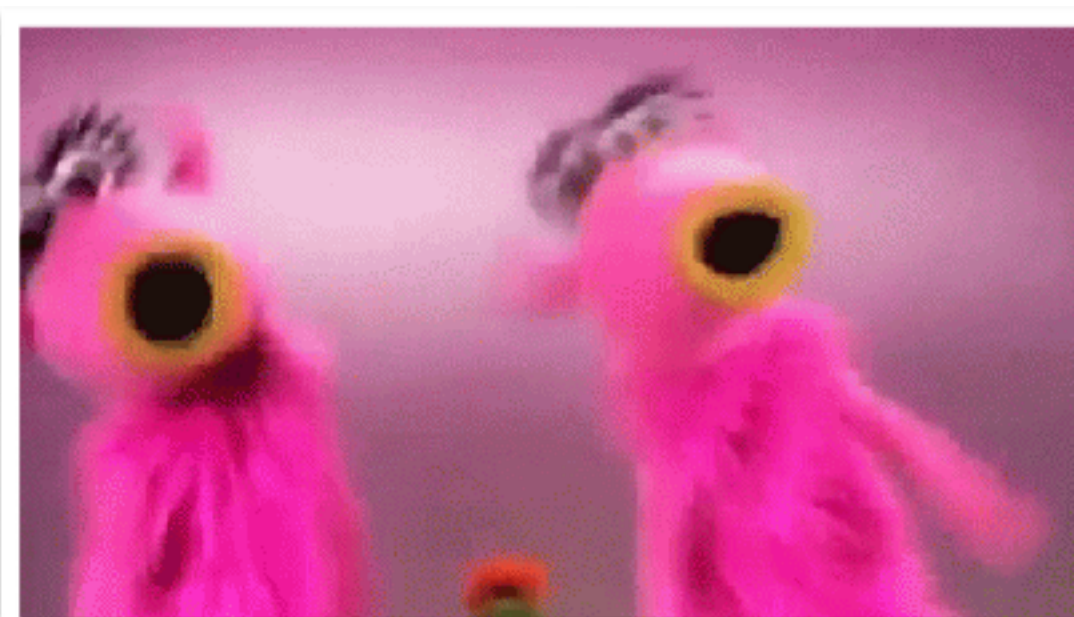
galaxykate.com

[github.galaxykate](https://github.com/galaxykate)





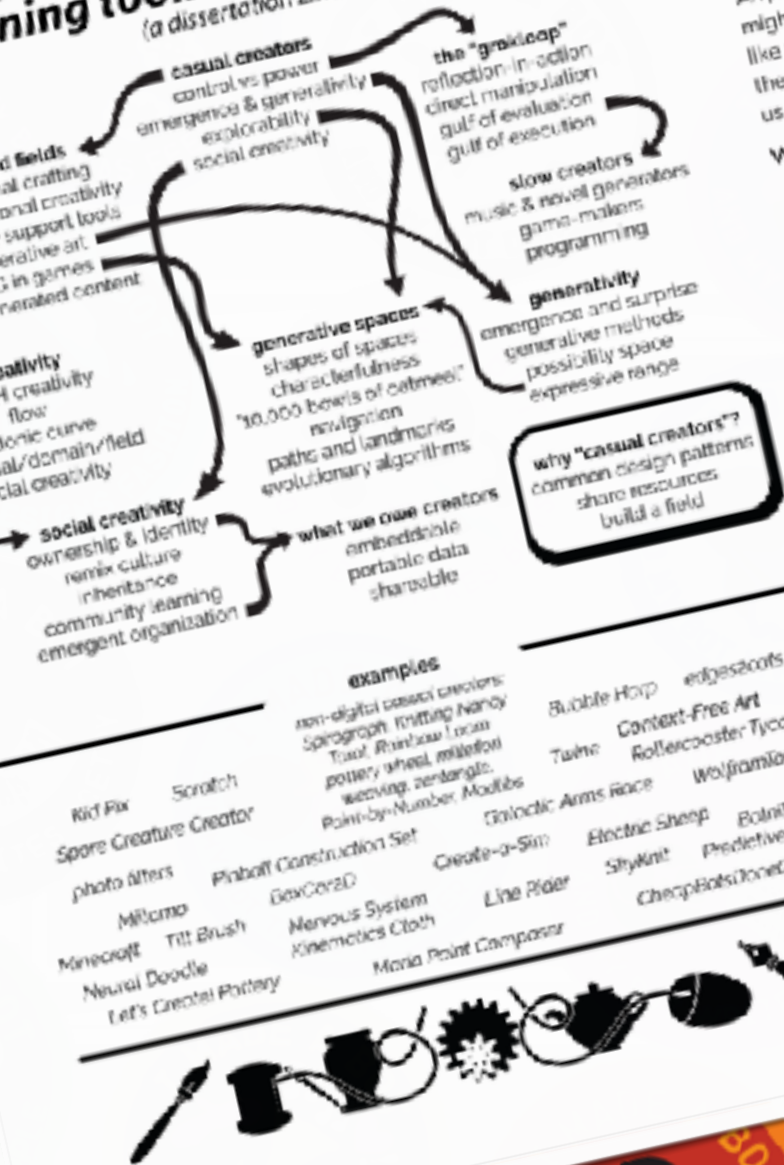
MUPPET GIFS!!!





Casual Creators

(a dissertation zine)



Can AI be a Kindergarten Art Teacher?

We have created AI that can trade stocks, AI that can drive cars, AI that can shoot weapons. Could we make AI of an encouraging kindergarten art teacher? What would an AI Bob Ross look like? This zine is about creativity for casual users, and how to write software systems (or apps) that enable casual creativity. I call apps like that "Casual Creators".

Anything with a built-in system to casual creativity can be a casual creator. This might be a photo editing or music-making app, or it might be embedded in a game, like a character creator. It might even be a physical object, like a pottery wheel. All these systems share some properties, though, and what we learn from some can help us better design others.

What is a Casual Creator? A Casual Creator is:

- an interactive system that makes "artifacts"
- provides some mechanical or generative assistance
- generativity creates a rich possibility space
- enables fast, confident, and pleasurable exploration
- encourages a feeling of creativity and creative ownership
- often amplifies that feeling of creativity with social sharing

Usually they are digital, but not always (spirographs, rainbow looms, and pottery wheels are all examples of physical casual creators). These systems are used to make things, like art or music or patterns or 3D models. You can design a casual creator to make any sort of thing so in this zine I refer to the things the casual creator is making as "artifacts".

Here's my academic definition:

A Casual Creator is an interactive system that encourages the fast, confident, and pleasurable exploration of a possibility space, resulting in the creation or discovery of surprising new artifacts that bring feelings pride, ownership, and creativity to the users that make them.

You have probably used lots of casual creators before. Lots of kids crafting kits make the casual creator trade-off (generative power vs control), but so do a lot of tools that don't expect mastery from their users (such as embedded systems like game-character creators).

There are many pieces of software designed for maximum creative control, to help the potential Mozarts of their field to create the magnum opus of their dreams. This zine isn't about that software, or about those users. Instead, this zine is about playful, doodling software that uses AI to help sort-of-creative people create sort-of-interesting things in not-very-much-time.

out me

te, galaxykate.com

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Expressive Intelligence Studio:

e for generative text. Used

, hosting 11000+ active

ote these slides)

games, art tools and more

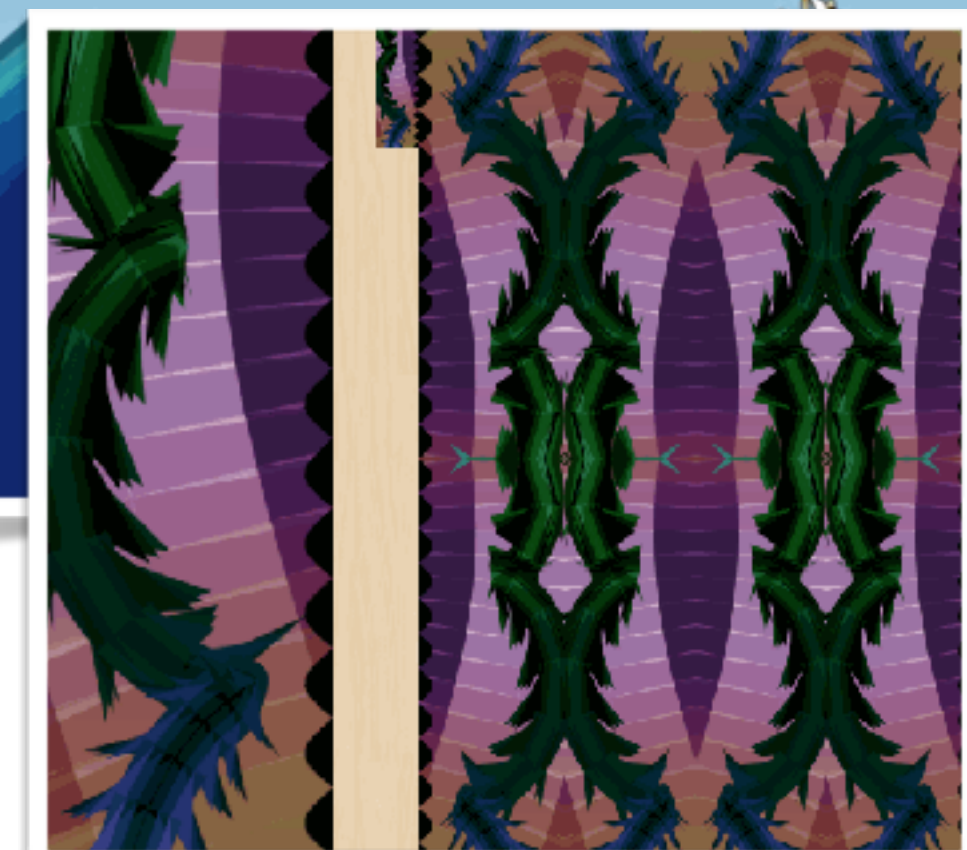
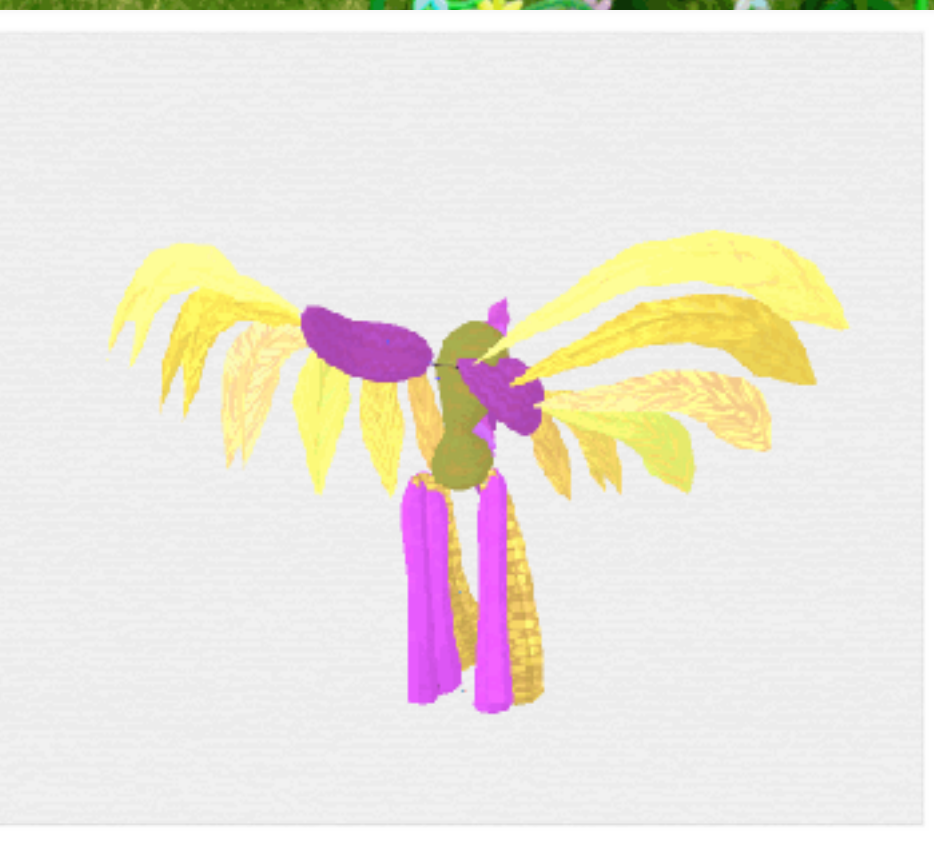
teach others how to

me for zines)

students, indies, AAA studios, app-makers, Google) understand how **generativity** works, and how to use generativity **in a way that suits the needs of their field**

Currently supported by the generosity of the **Center For Research in Open Source Software**





About me



@galaxykate, galaxykate.com

she/her

PhD, UC Santa Cruz, **Expressive Intelligence Studio**:
AI for human expression

Made Tracery, a language for generative text. Used
for CheapBotsDoneQuick, hosting 11000+ **active**
bots (unless they've been banned since I wrote these slides)

I make generative artbots, games, art tools and more
(I made the planets on Spore)

I write about, give talks, and teach others how to
make generative things (ask me for zines)

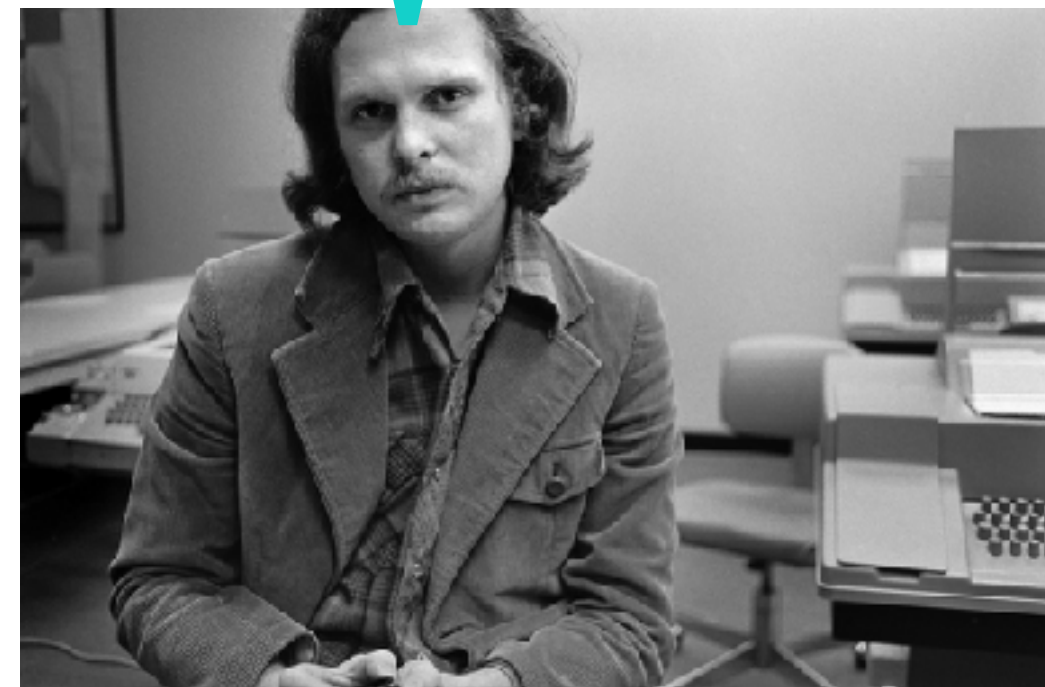
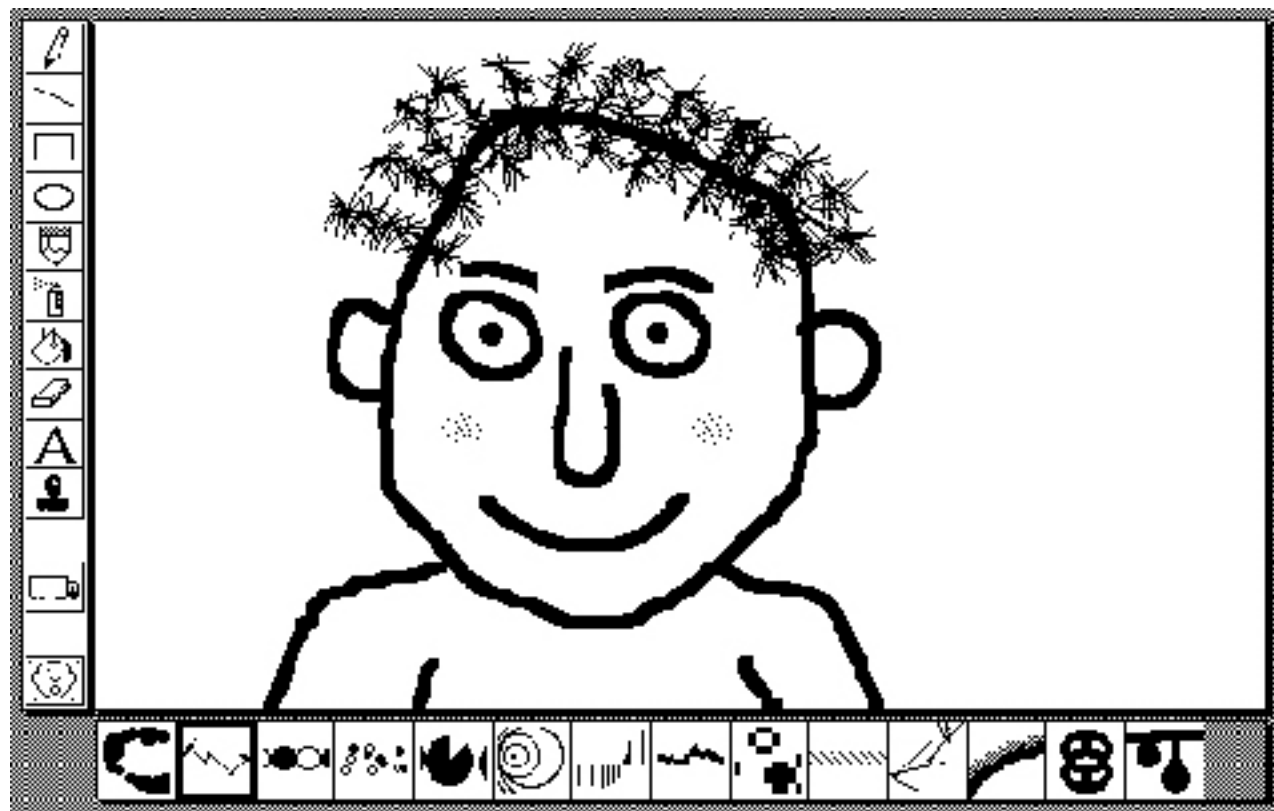
I help people (students, indies, AAA studios, app-
makers, Google) understand how **generativity** works,
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Craig Hickman, Kid Pix 1989

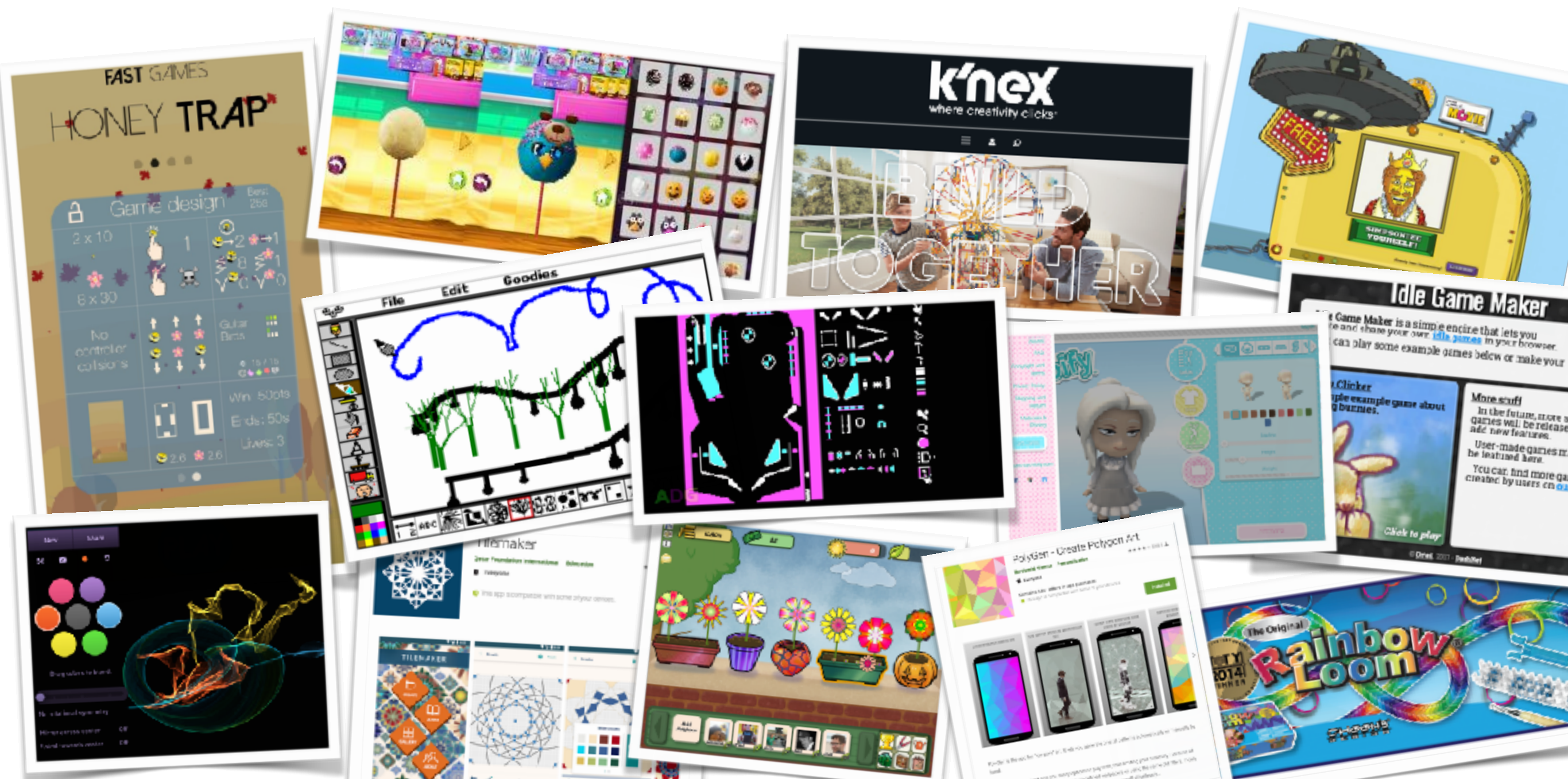
<http://red-green-blue.com/kid-pix-the-early-years>

1. **(The Prime Directive)** The program should be **extremely easy to use**. No manual should be needed and program features should "explain themselves" through use. All tasks should be able to be performed in the simplest, most straightforward way. The program should go out of its way to meet the user.
2. As long as The Prime Directive is not violated, every opportunity should be taken to make the program **surprising and satisfying to use**. No opportunity should be missed. **The process of making a picture should be as important as the picture produced.**



Casual creators...

are creativity systems for casual users



Creativity has many meanings

Who is creative?



When are we creative?



Problems in creativity

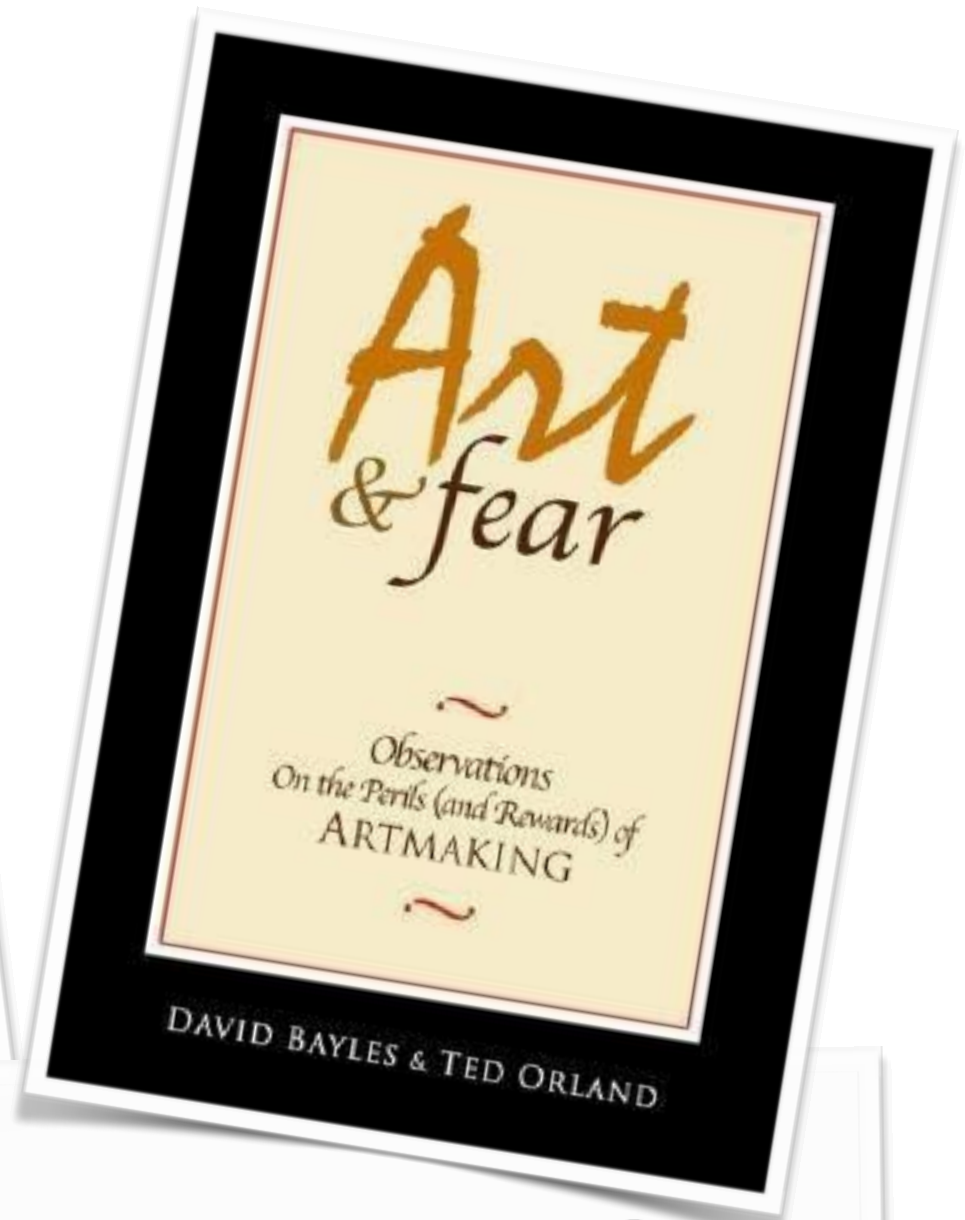
MANAGING YOURSELF

Reclaim Your Creative Confidence

How to get over the fears that block your best ideas by Tom Kelley and David Kelley



Most people are by children, we rev play, ask our land draw blobs and call them over time, because of so formal education, a lot of those impulses. We learn judgment, more caution. The world seems to divide and "noncreatives," and consciously or unconsciously to the latter category. And yet we know that essential to success in an industry. According to a of chief executives around the most sought-after traits. No one can deny that creativity enabled the rise and continued of countless companies, like Facebook and Google, Procter & Gamble and Google. Students often come to university's "d.school" (which one of us—David Kelley—Hasso Plattner



DESIGN & ILLUSTRATION > DRAWING THEORY



"Can I Draw?"—How to Tell If You're Good Enough

Problems in creativity

- Being undirected
- Being trained to come up with the “*right*” answer
- Being afraid of negative judgement
- Running out of ideas



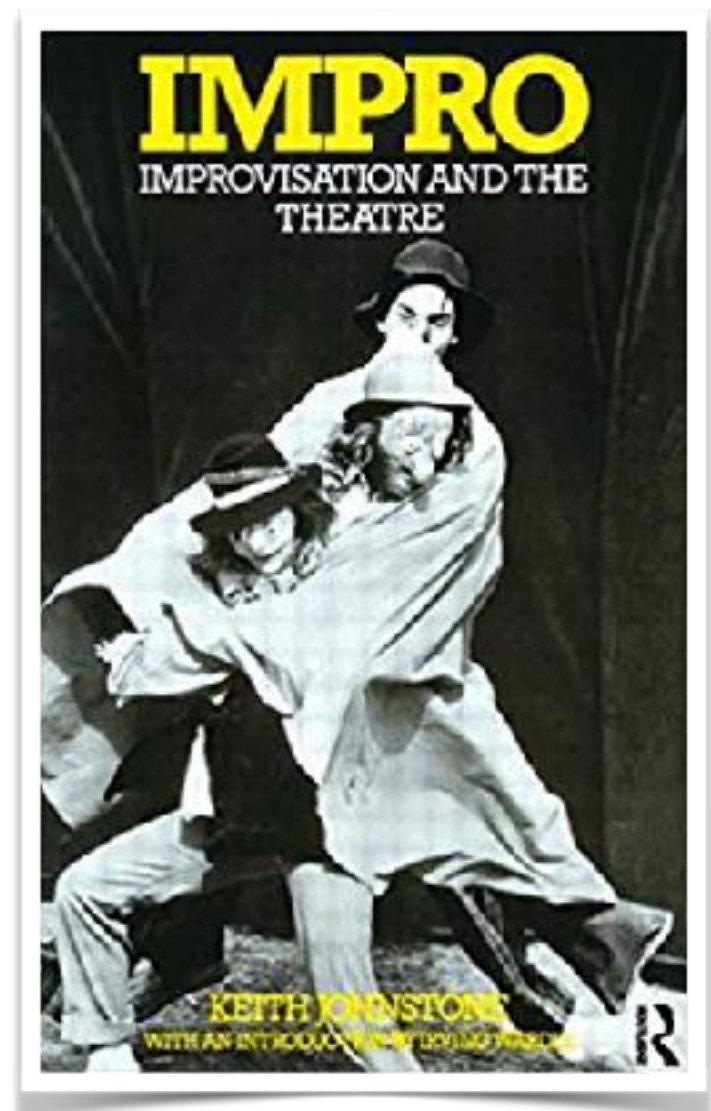
Problems in creativity

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Problems in creativity

- Being undirected prompts
- Being trained to come up with the “right” answer acknowledgement
- Being afraid of negative judgement “Yes-and”
- Running out of ideas



Questions

- How do we get people to be creative?
- How do we get people to move?
- How do we get people to move creatively?



Lets do some improv!

Lets do some improv!

Do something

Lets do some improv!

Say something

Lets do some improv!

***Your hand is a
puppet,***

***say hello to your
neighbor***

Lets do some improv!

Name a pokémon

Lets do some improv!

Ooooooh

the year was 1778

Lessons:

- We like to be ***right*** when answering
- Prompts give us hints for what **a few possible right answers** could be

Lessons:

- Prompts can be verbal
- They can also be
 - Props
 - Music
 - Clothing
 - Cultural expectation



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Nobody:

Somebody:

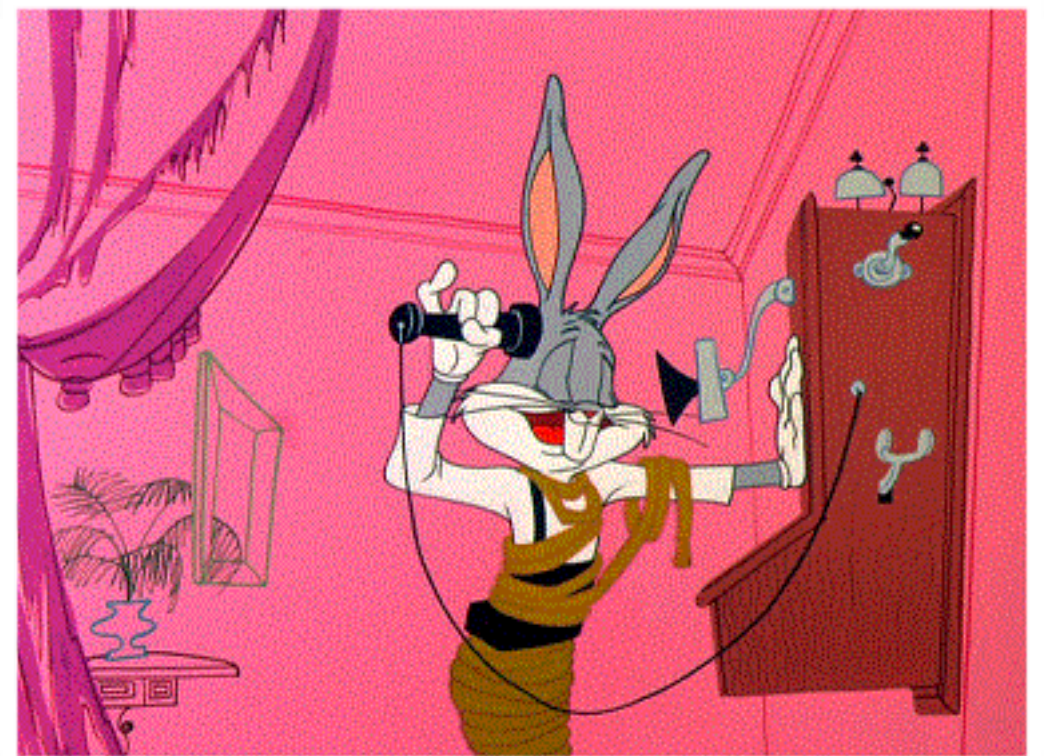
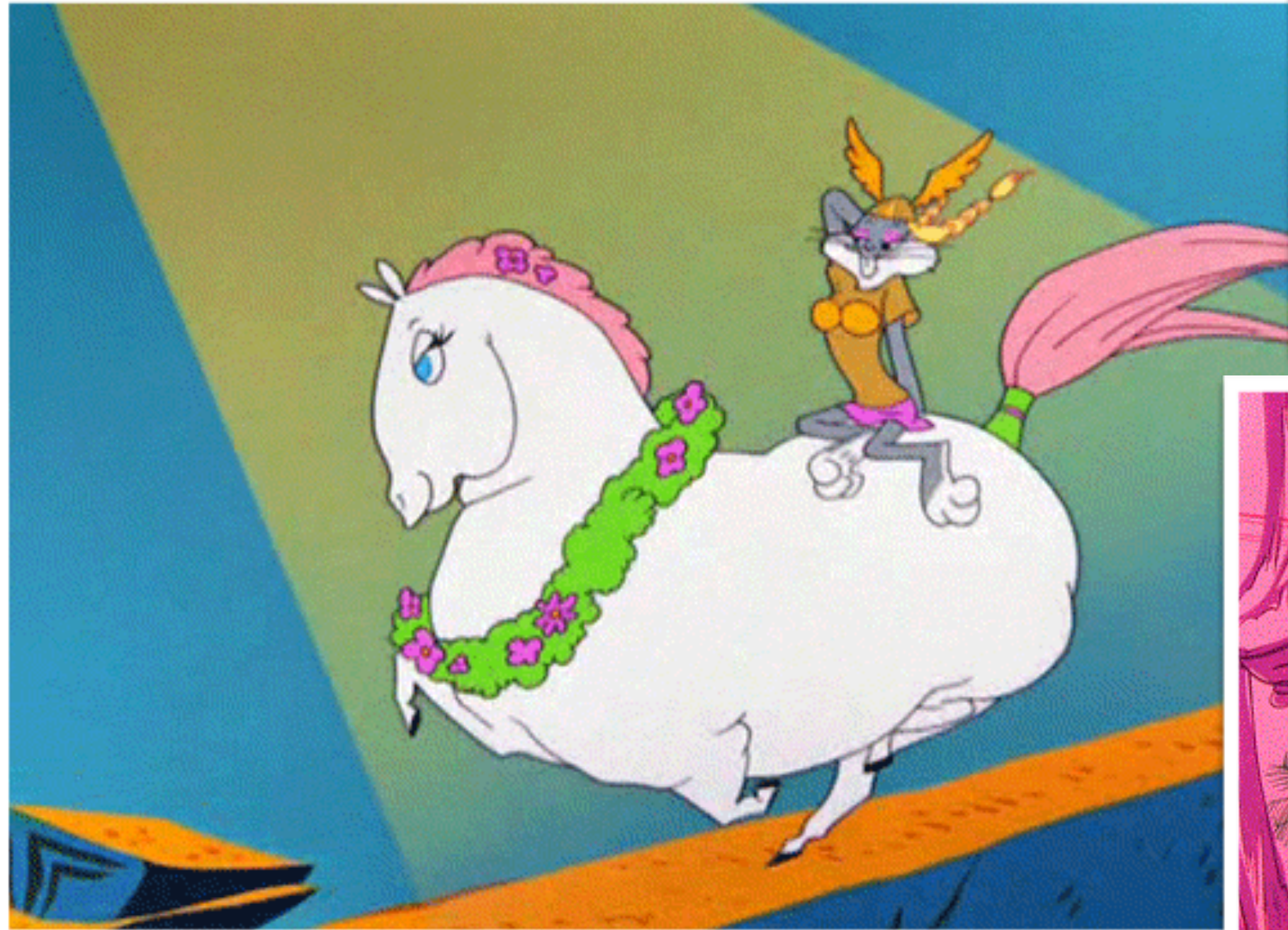


Clothing is an improv partner!

- “Yes-and”
- A prompt
- A prop
- A partner

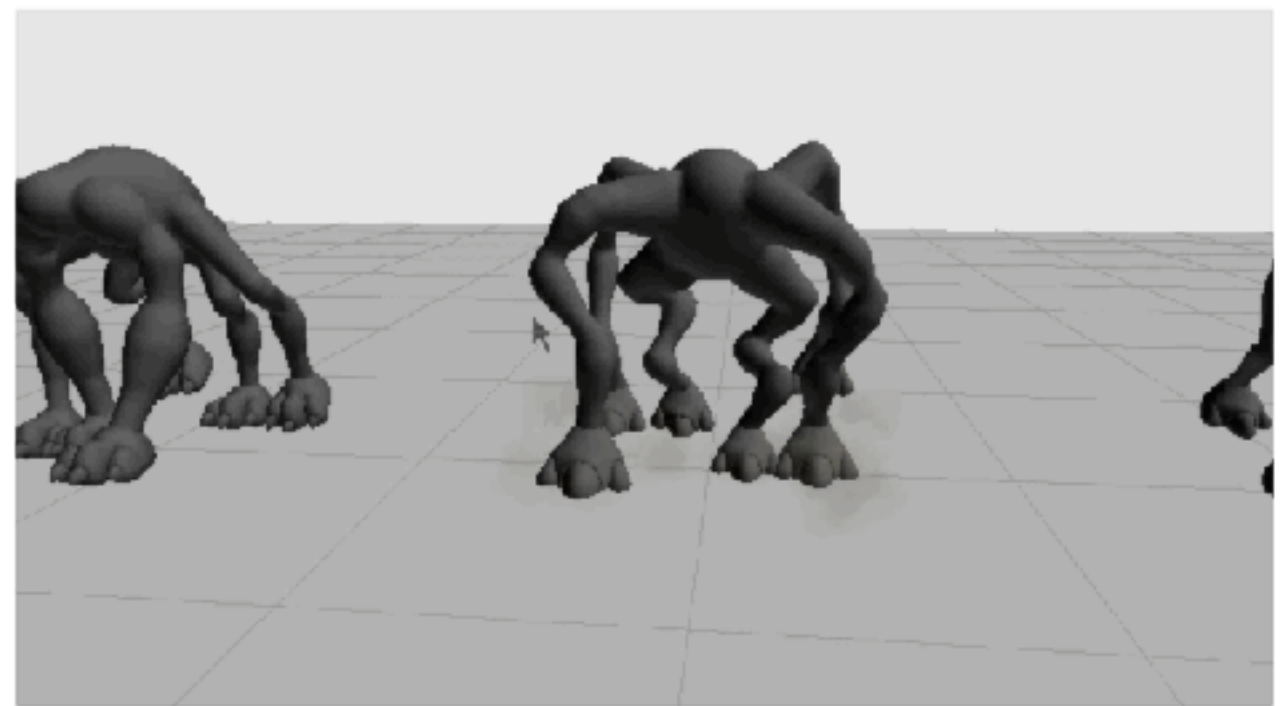
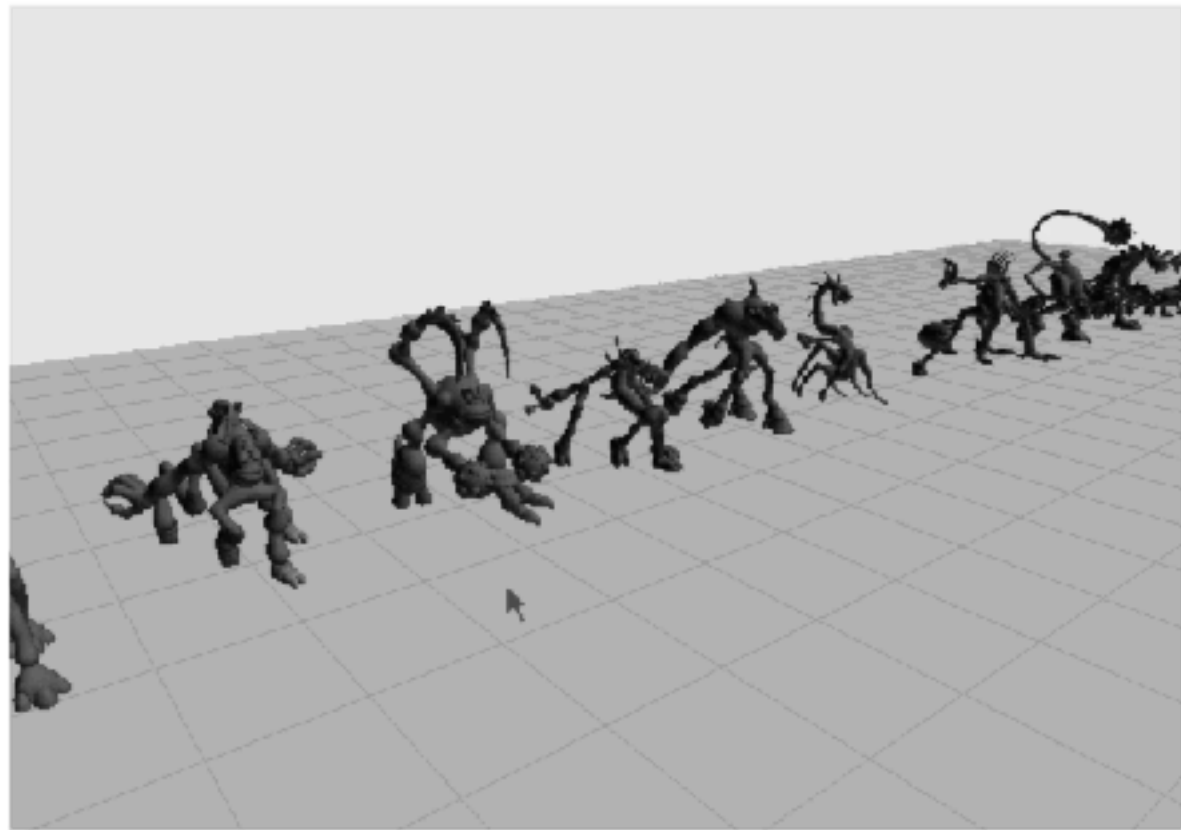


Secondary motion

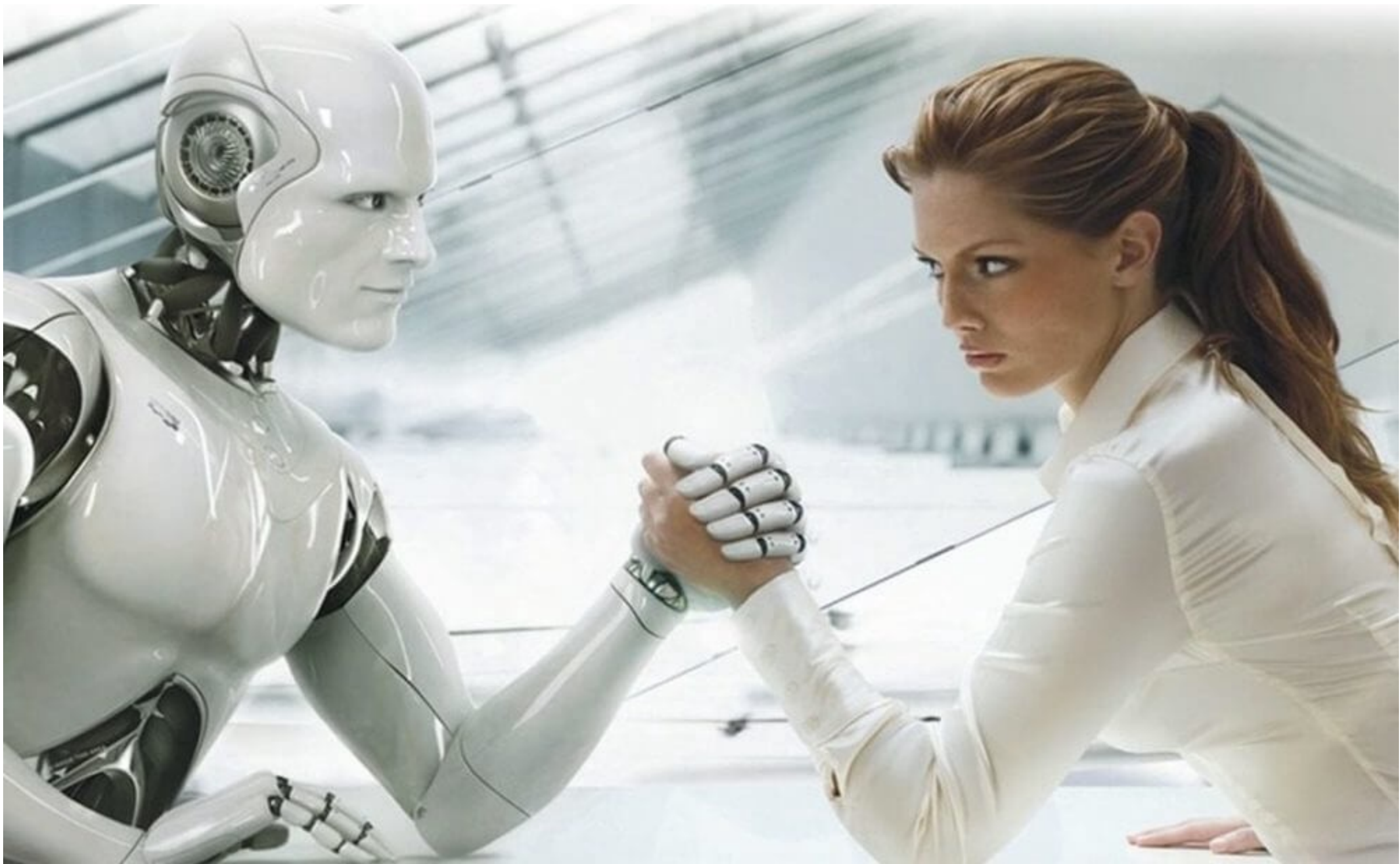


(yeah but what's it called in puppetry and dance?)

Secondary motion



(yeah but what's it called in puppetry and dance?)



Dancing with a computer



Tokhuro University, the Partner Ballroom Dance Robot (PBDR)

Types of human-computer dance interaction

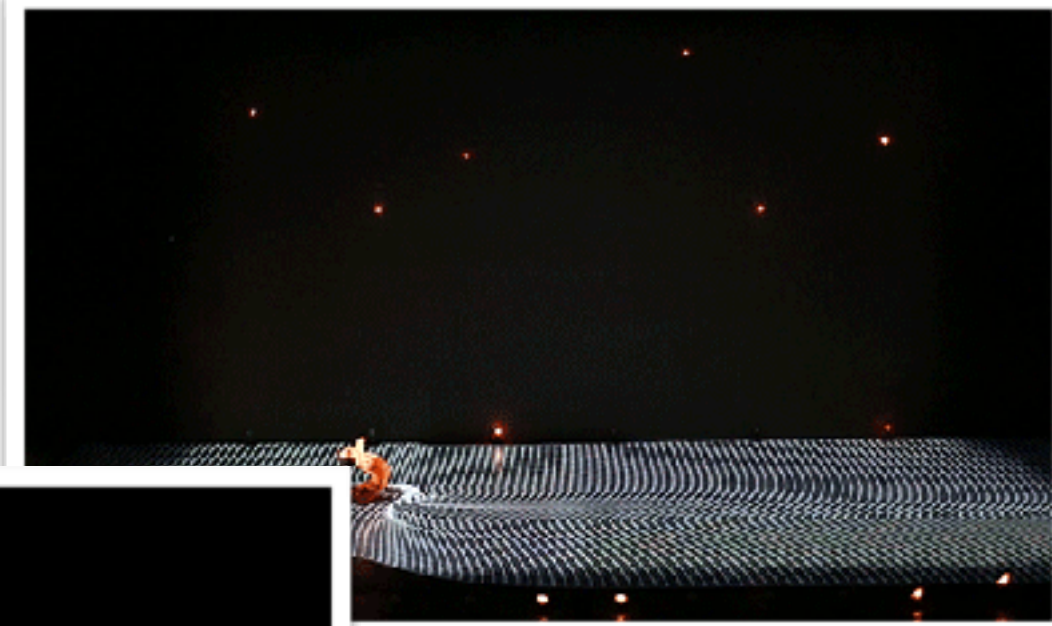
- Costumes/Wearables
- Fields
- Agents

How does the computer “**listen**”?

What is it listening to?

How does it **speak**?

Is it a mirror or an agent, or something in between?



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Costumes



Costumes

- Secondary motion
- “Yes-and” for physical gestures
- Locationally, directionally, temporally linked to a movement
- *very direct* causal link!
- Emergence (movement + generativity)



Costumes

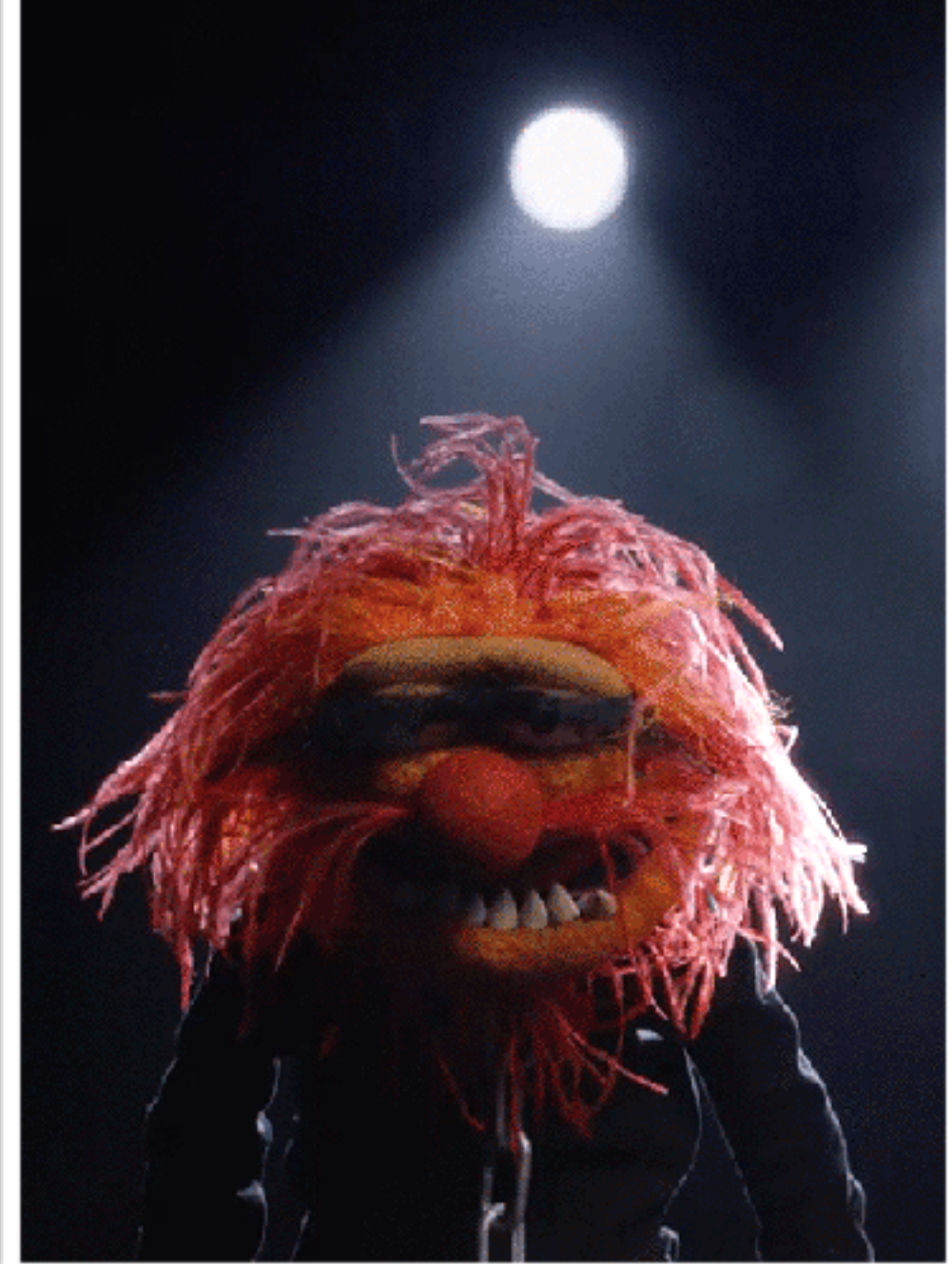
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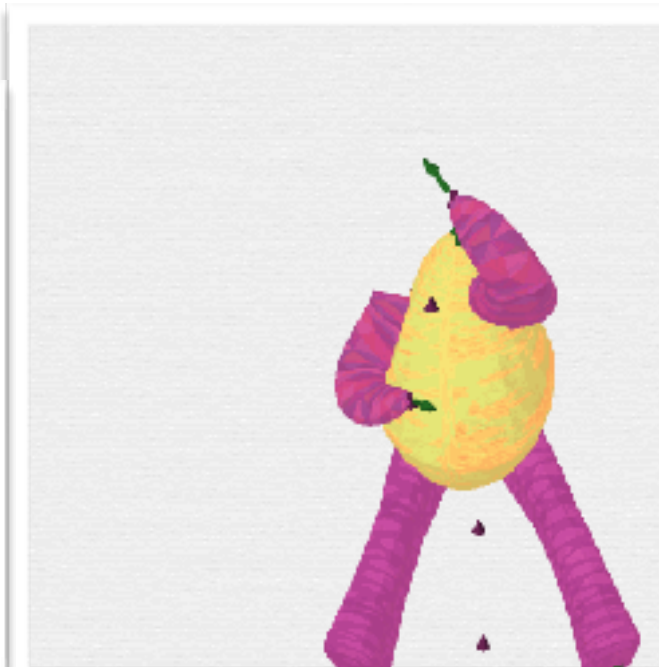
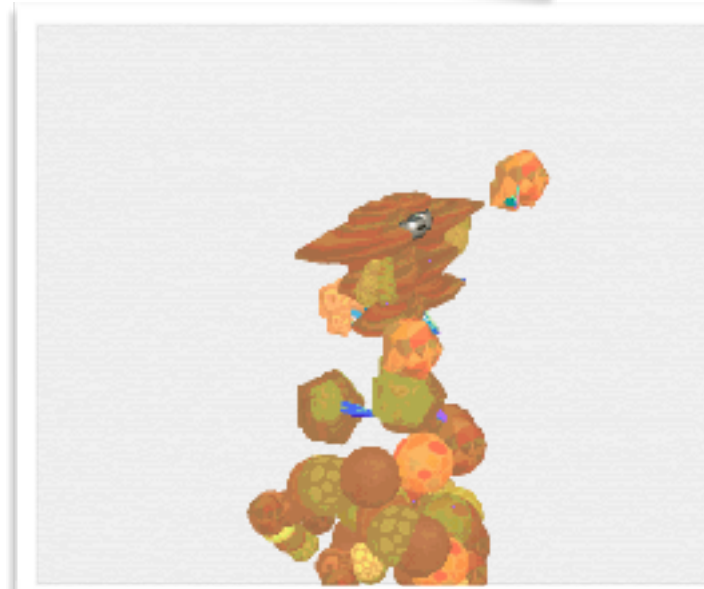
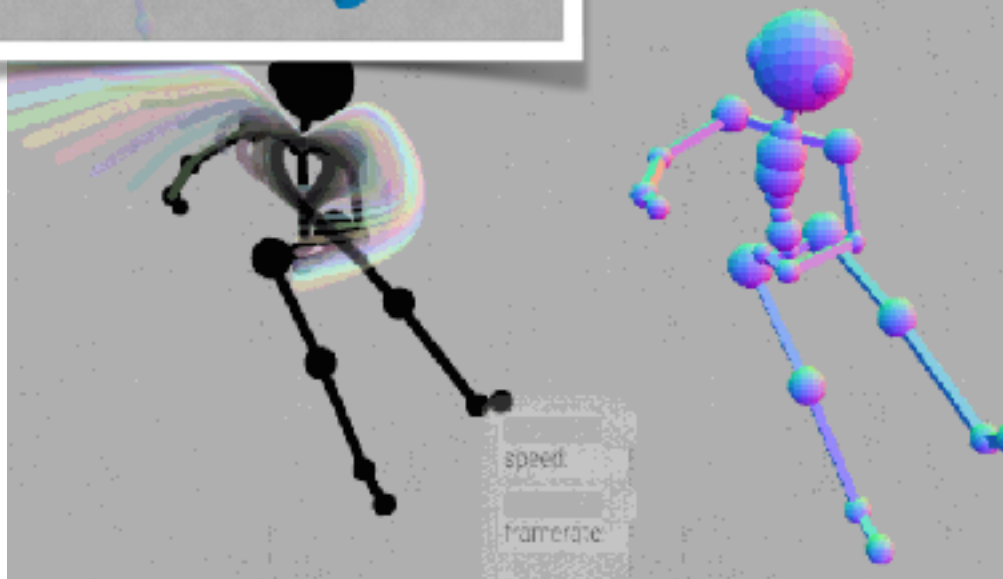
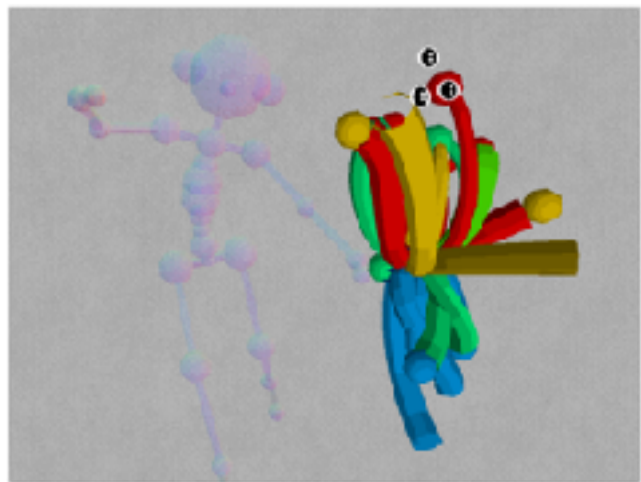
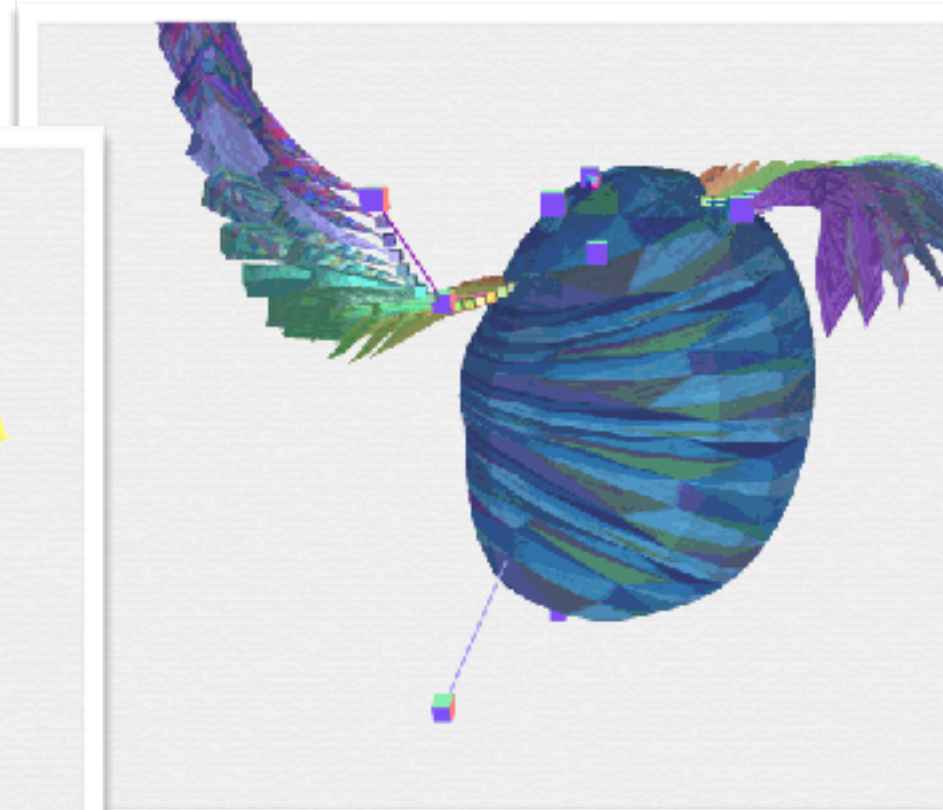
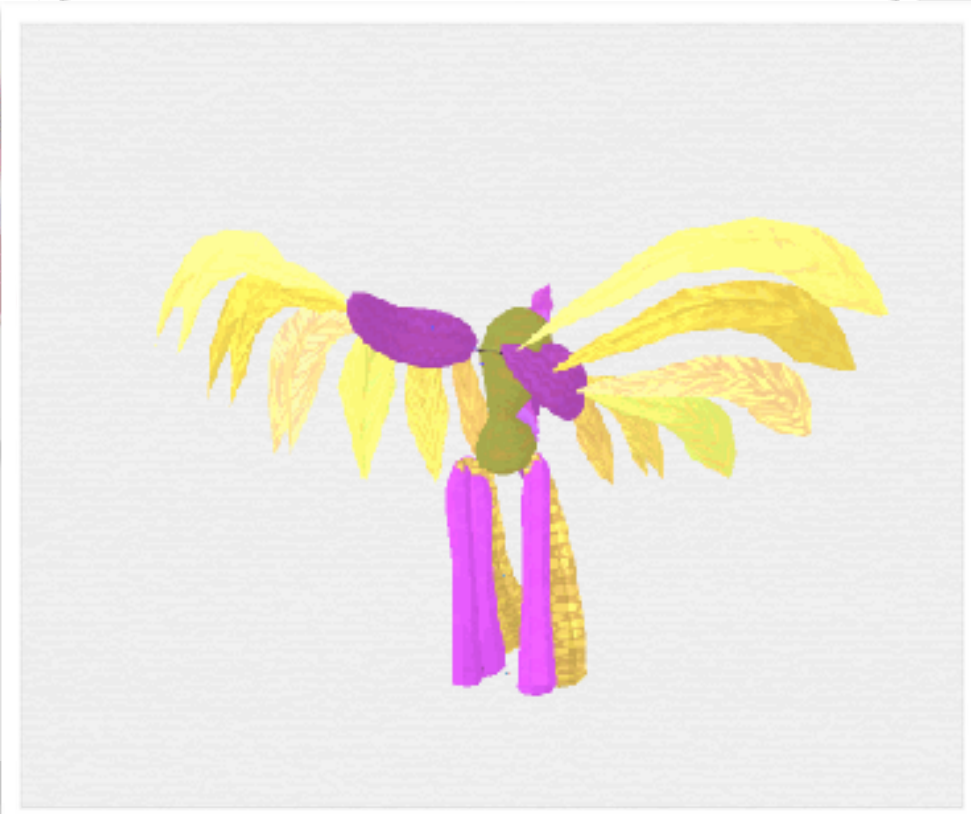
Costumes



Costumes



Costumes for computers



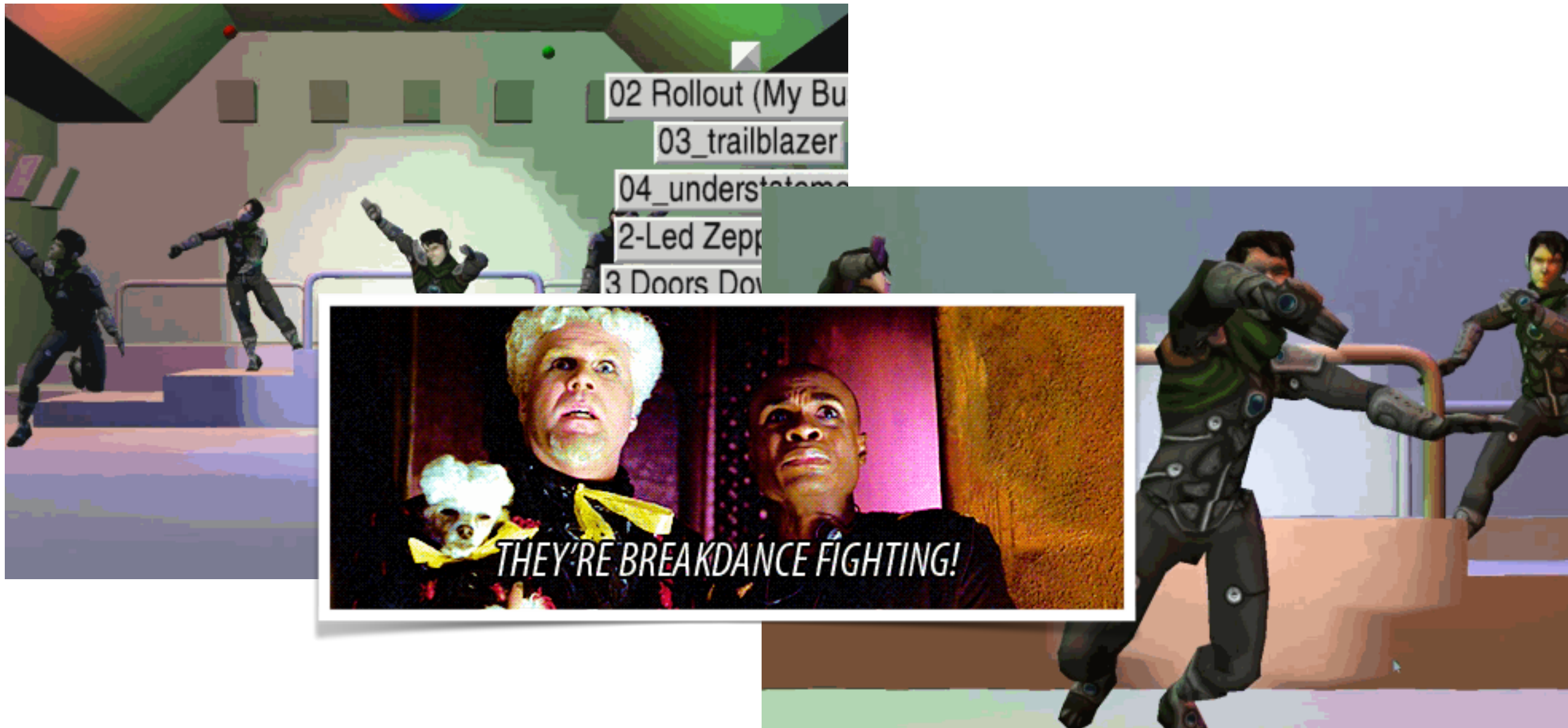
Untitled Project for Google Creative Labs, me, 2018

The most important thing is immediacy



the second most important is
connection, which **immediacy** assists!

The most important thing is immediacy



But we often get this wrong

Lumin.AI

(Duri Long, Mikhail Jacob, Nicholas Davis, Brian Magerko)



“only 14 people entered the dome and did not physically interact with the system at all”

“It's not about judging or whether we know how to dance, just about playing with body movements...that's how dancing should be”



Issues:

Generativity creates interestingness in the “body”, but not used for surprise in the dance

Lack of temporal immediacy, rhythm, weight

Does the AI “hear” my movements right?

Is it improvising, or has it lost Kinect tracking?

Move Mirror

Google Creative Lab

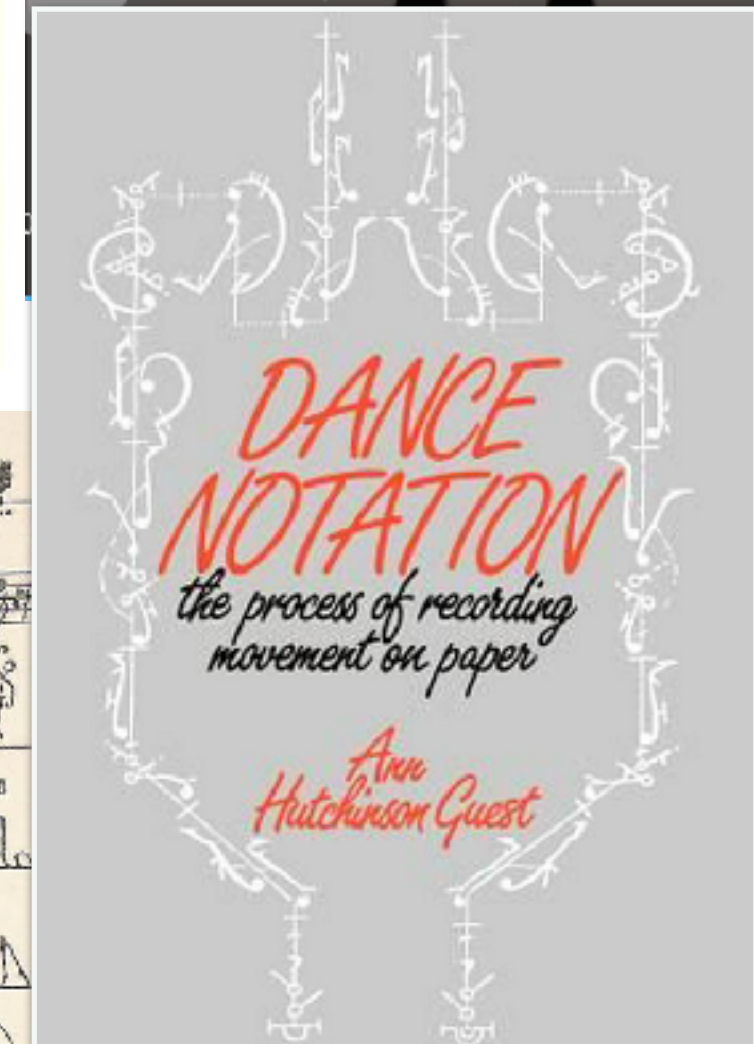
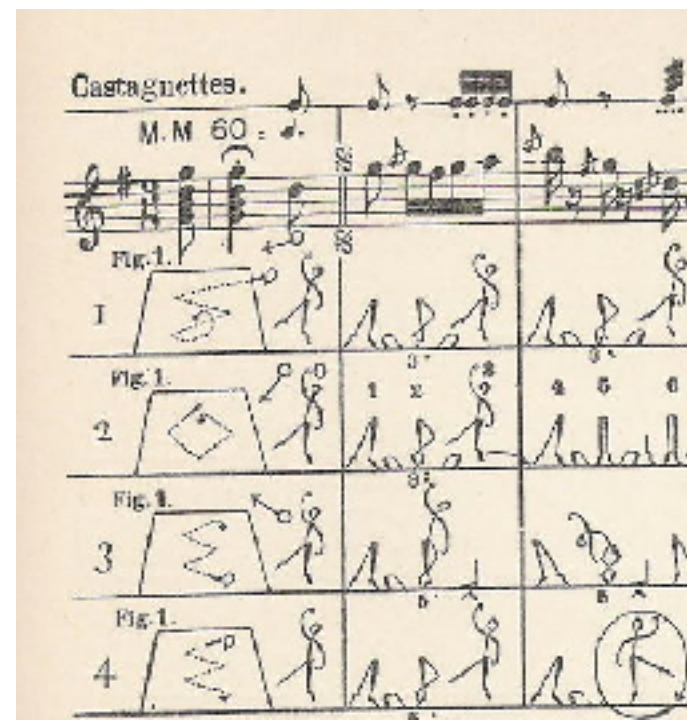
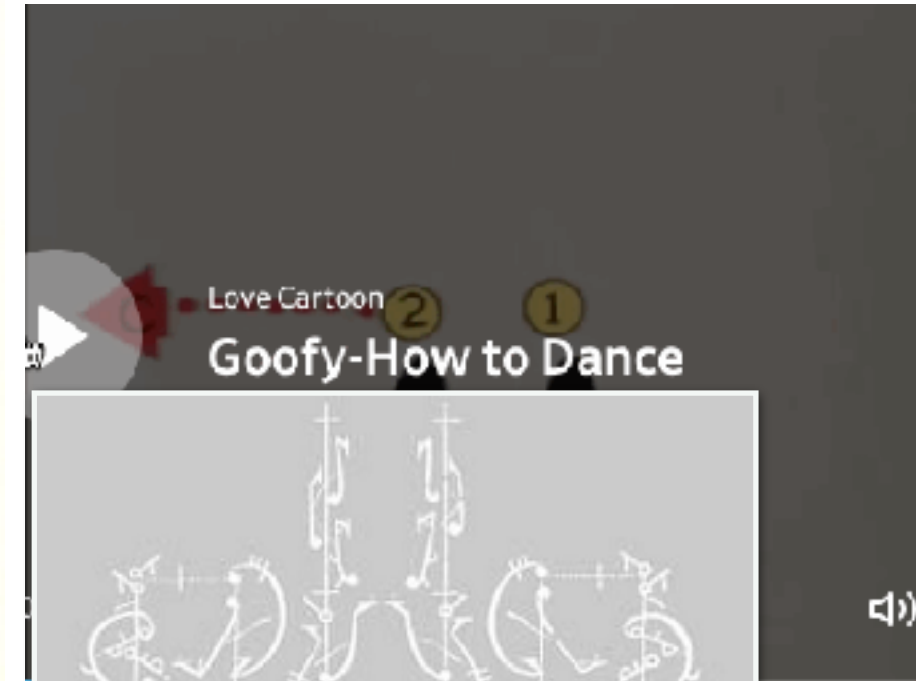
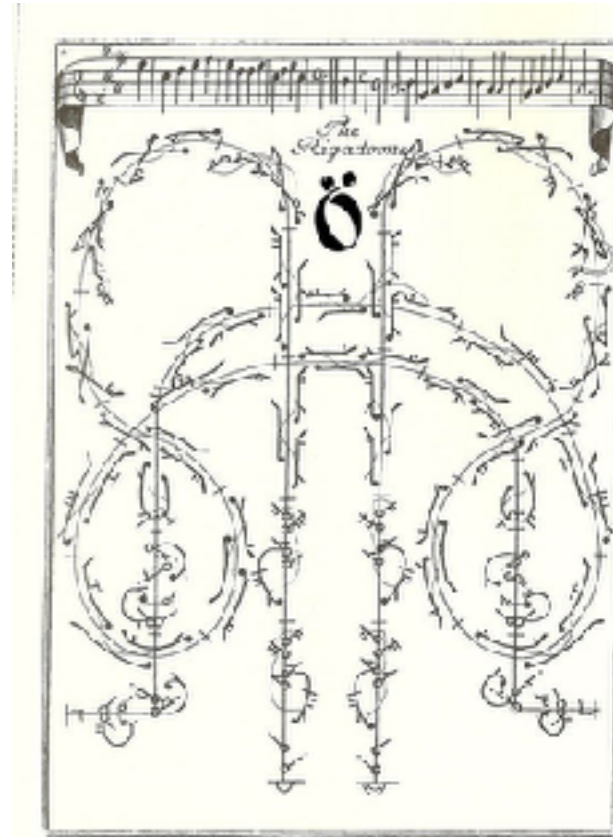


Oculus Quest “First Steps”



What is dance about?

- A series of poses
- Forces
- Responses to a stimulus
- A script to follow



What is dance about?

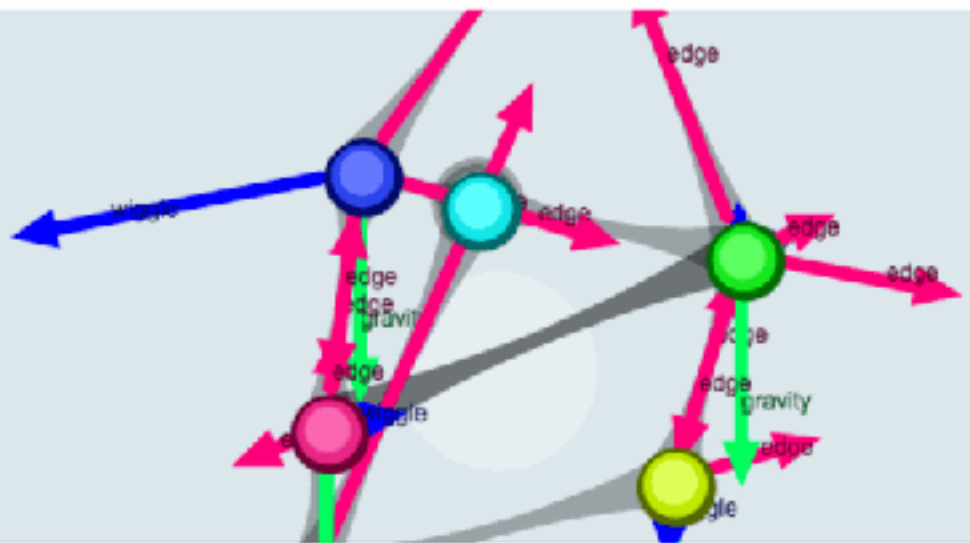
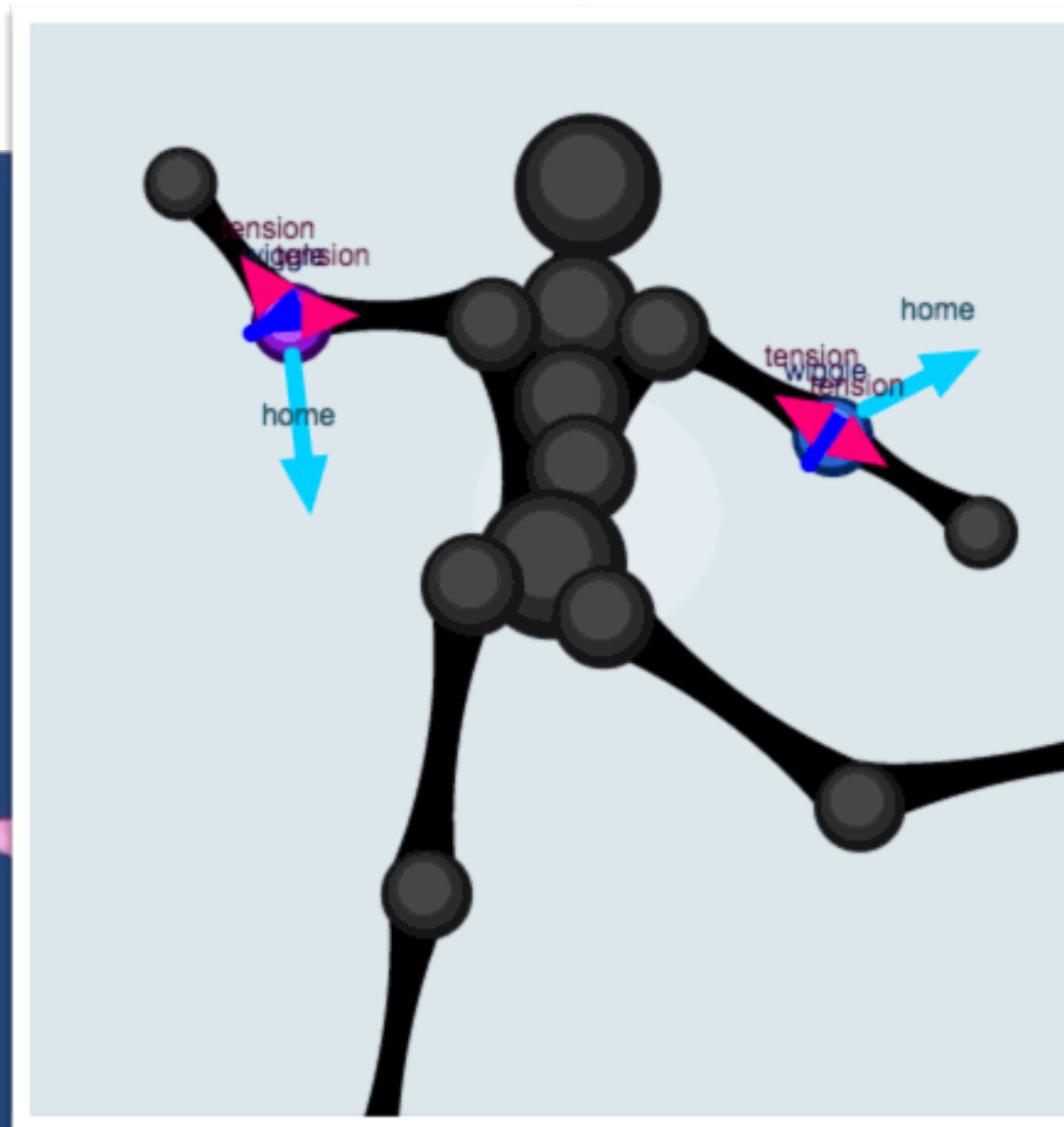
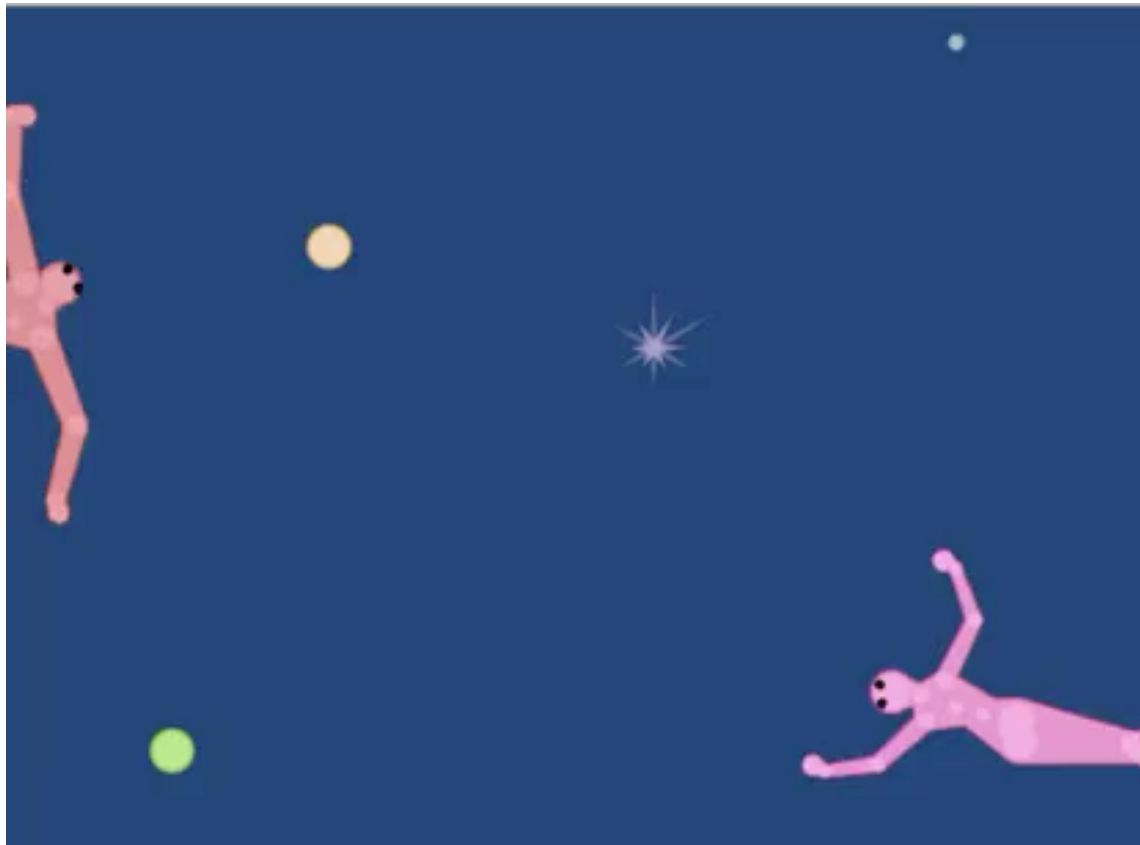
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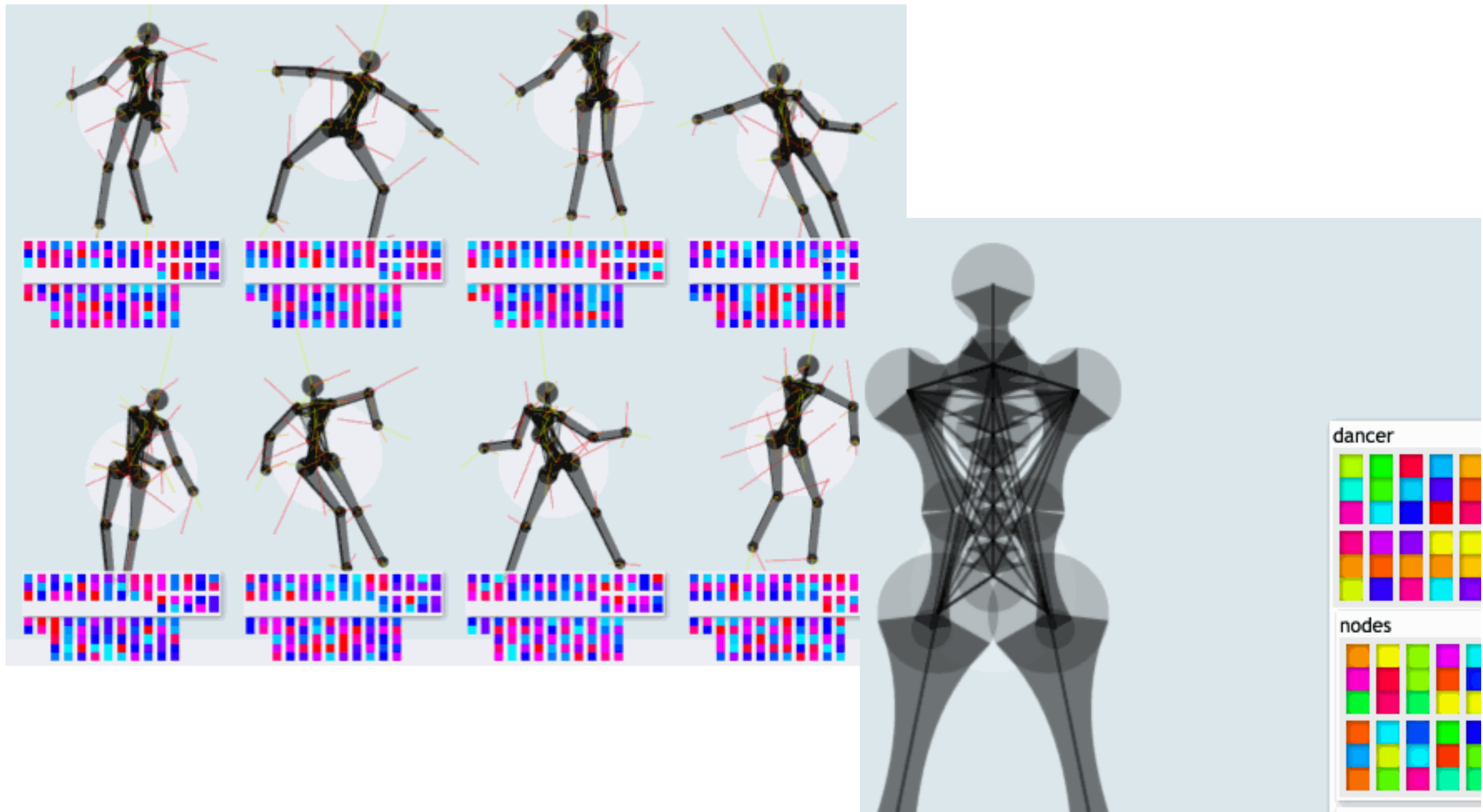
What can we do immediately?



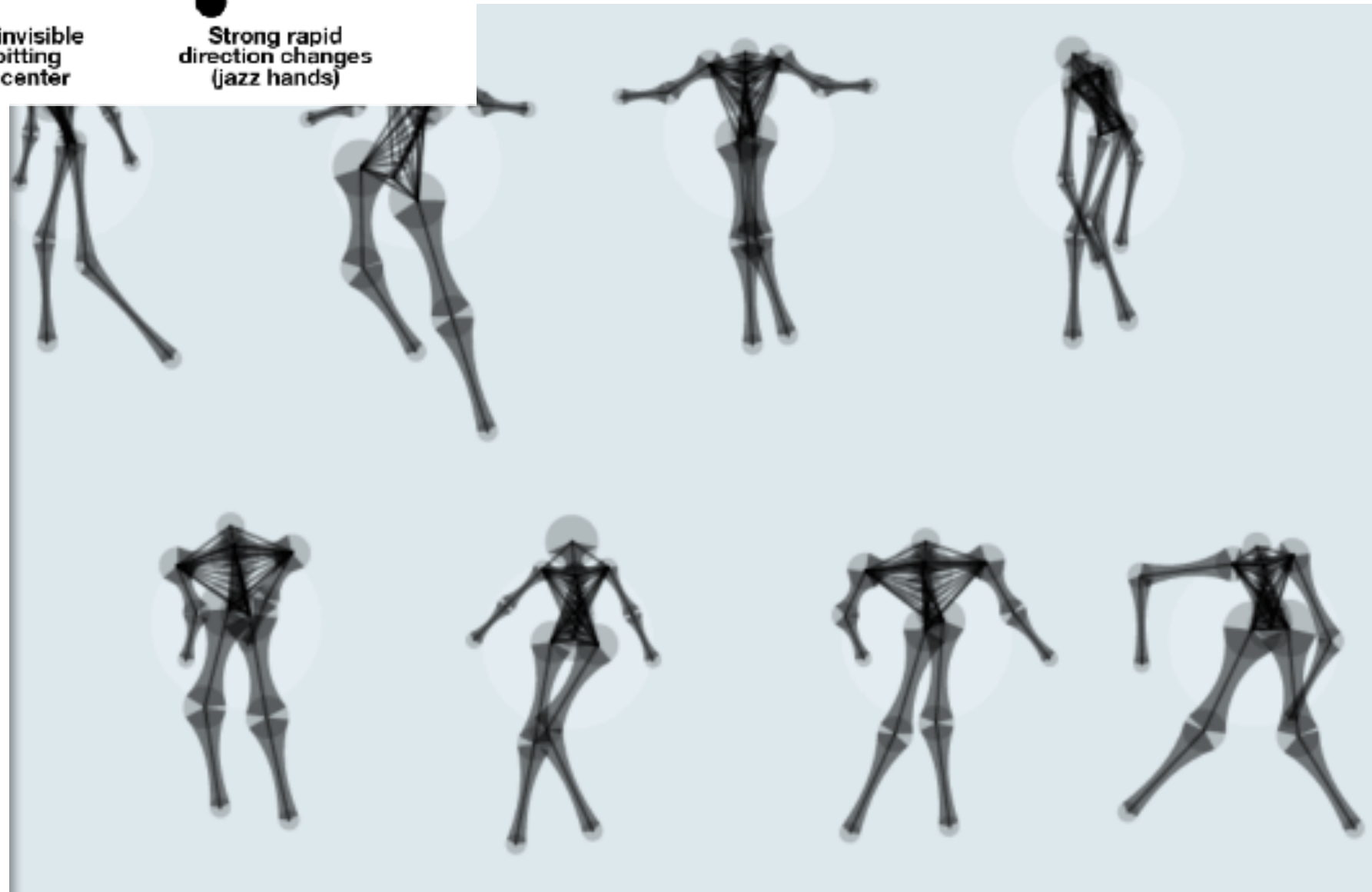
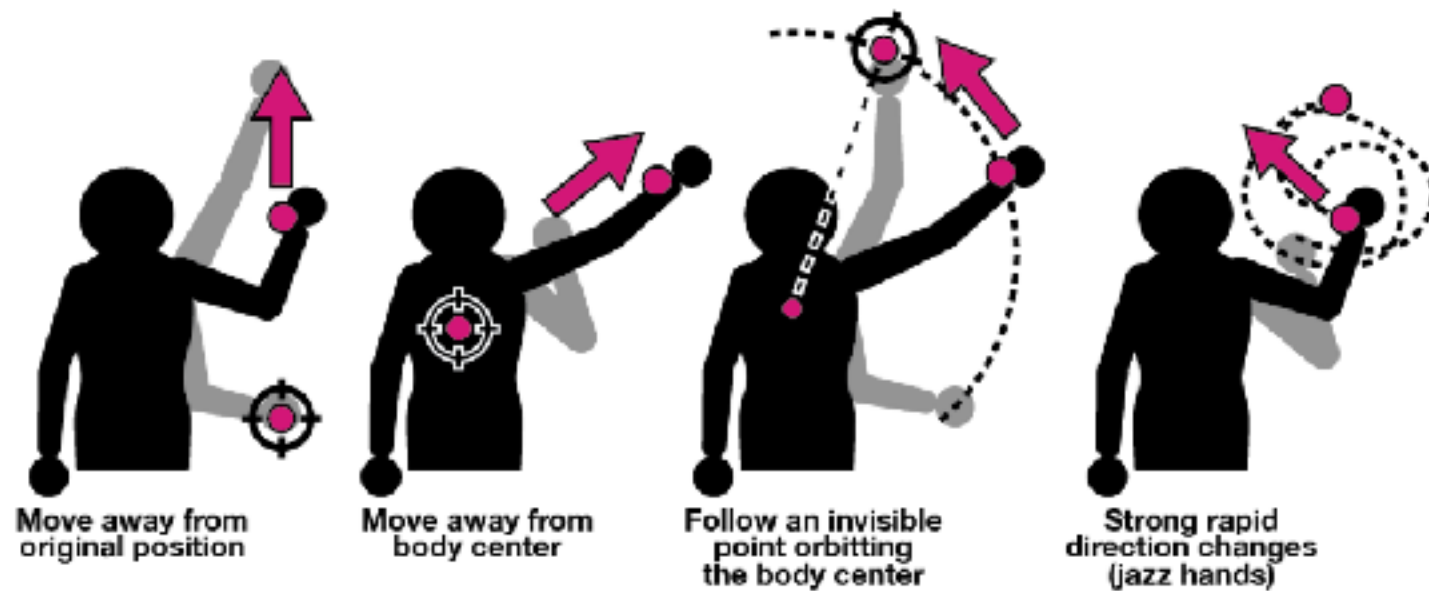
Playing with forces



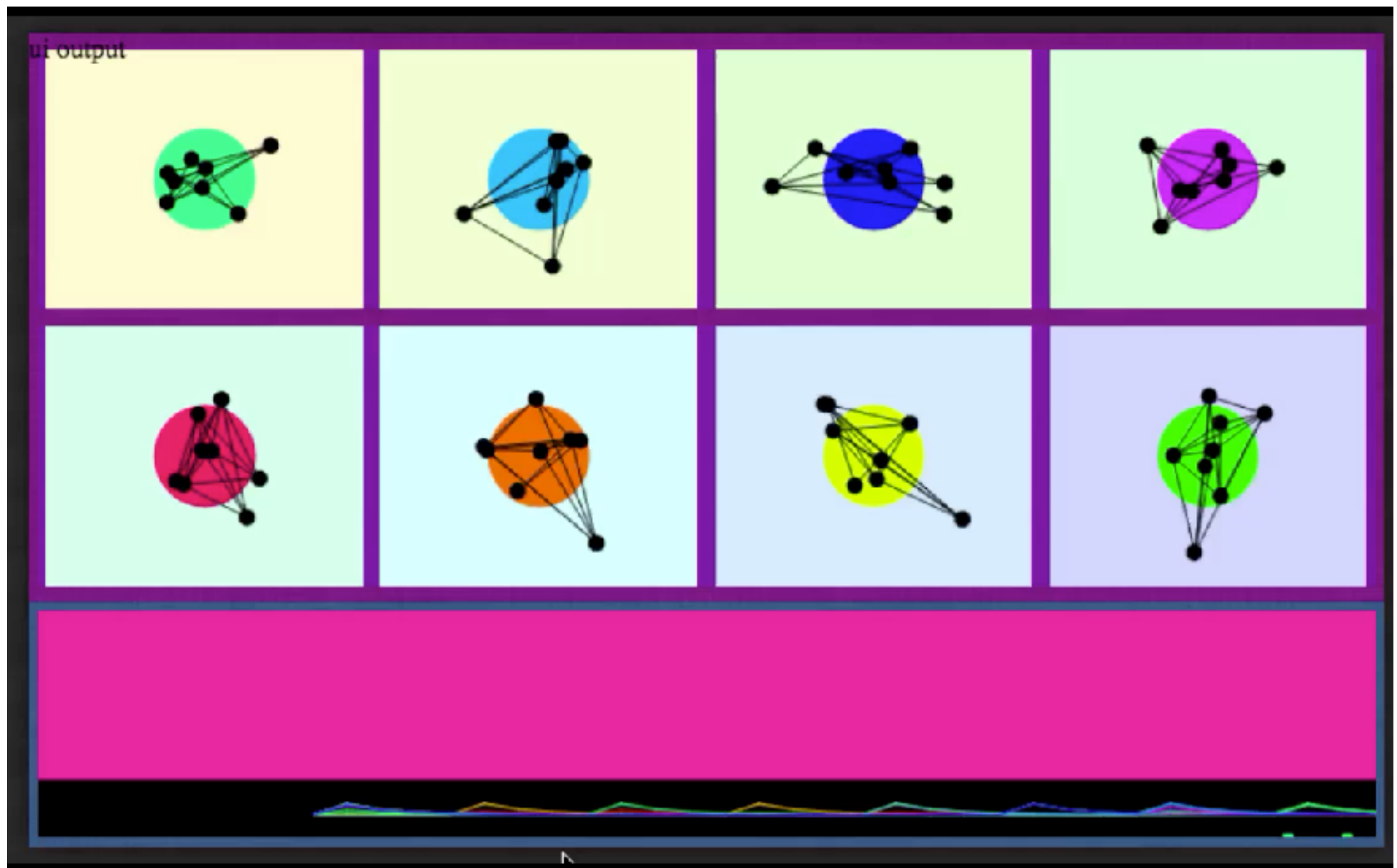
Solution: DANCE TRIBBLES



Solution: DANCE TRIBBLES



Respond to what?

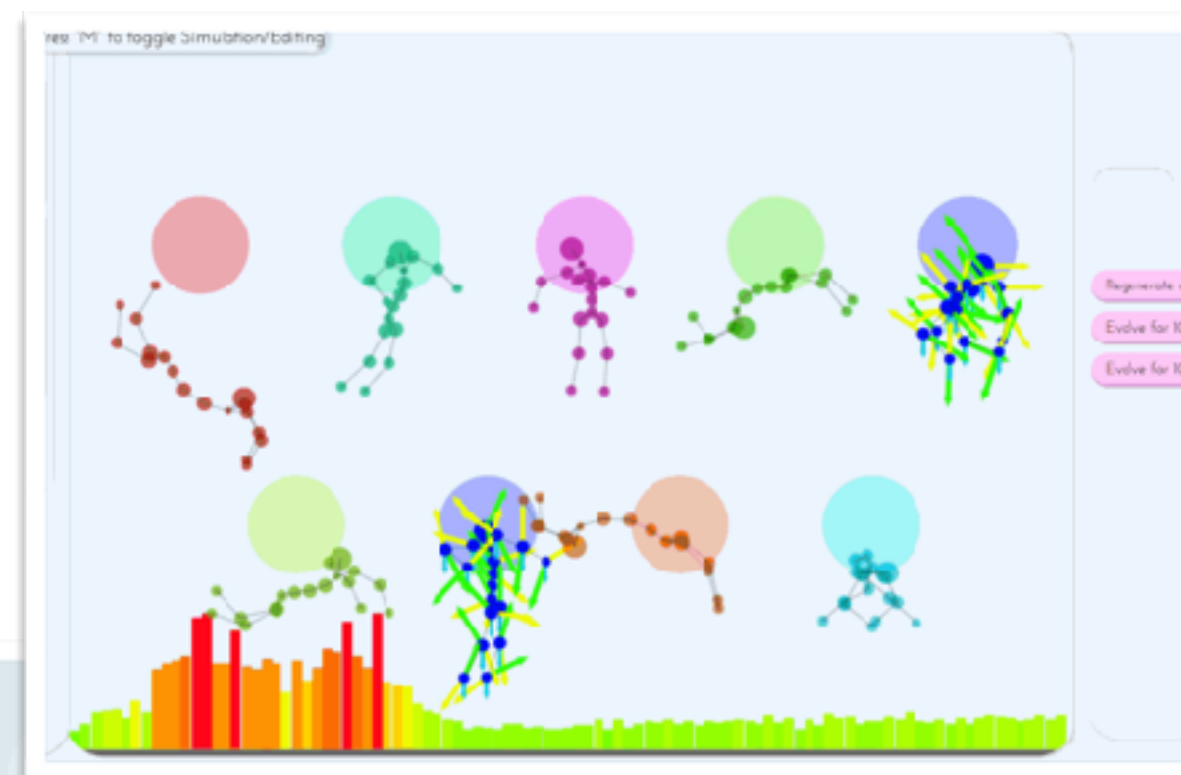




+



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Lets “talk” to computers

We have more input devices than ever!!!!

- Kinects (🦴), PoseNet
- LeapMotion
- Hand tracking (bare or with controllers)
- Braaaaaain waaaaves
- Cameras, music, mouse, midi...

Developer Stories · TensorFlow.js

Real-time Human Pose Estimation in the Browser with TensorFlow.js

May 07, 2018



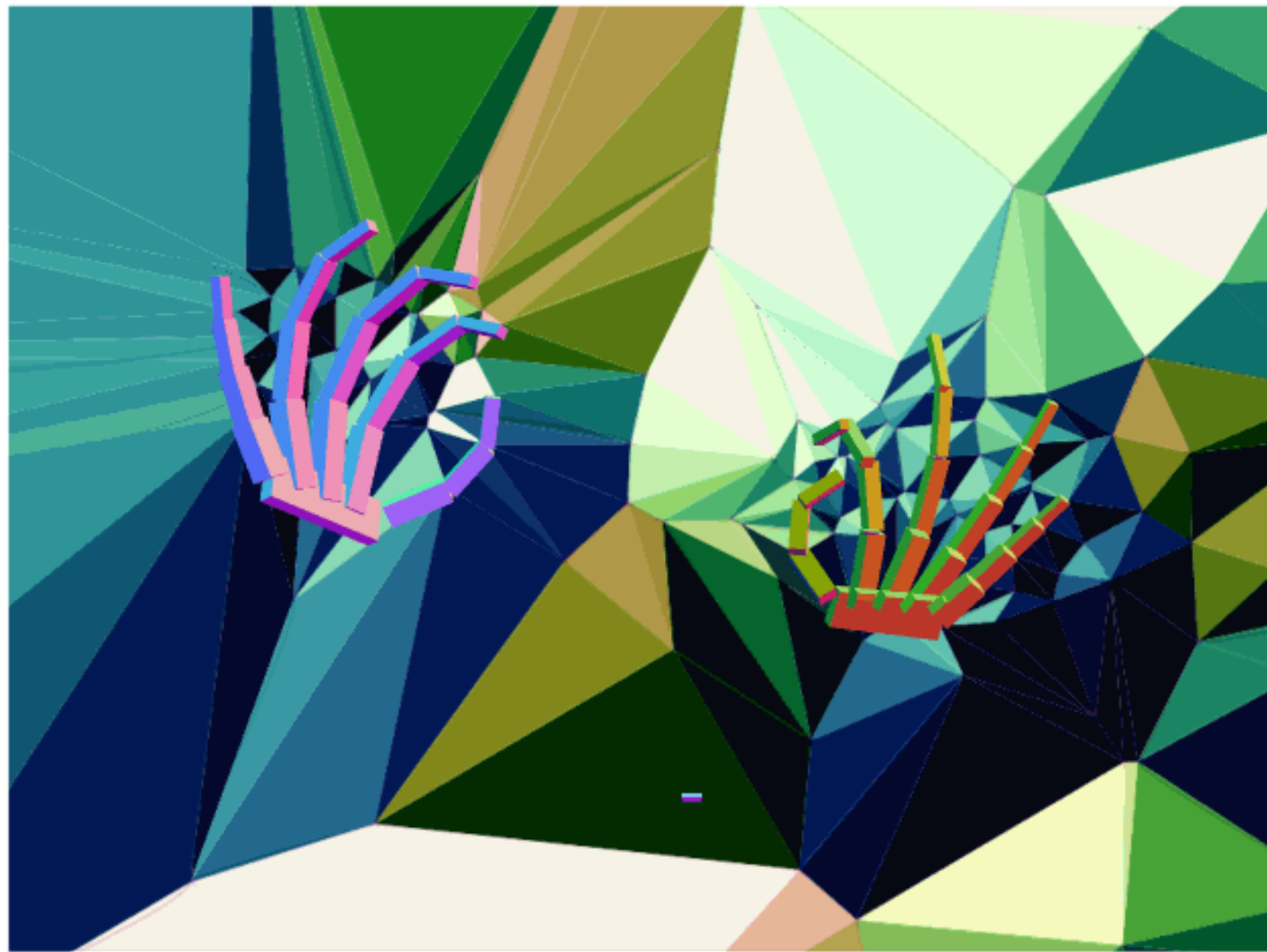
Posted by: [Dan Oved](#), freelance creative technologist at Google Creative Lab, graduate student at ITP, NYU. Editing and illustrations: [Irene Alvarado](#), creative technologist and [Alexis Gallo](#), freelance graphic designer, at Google Creative Lab.

UPDATE: PoseNet 2.0 has been released with improved accuracy (based on ResNet50), new API, weight quantization, and support for different image sizes. With default runs at 10 fps on a 2018 13-inch MacBook Pro. See the Github [README](#) for more details.

In collaboration with Google Creative Lab, I'm excited to announce the release of a [TensorFlow.js](#) version of [PoseNet](#), a machine learning model which allows for real-time human pose estimation in the browser. Try a live demo [here](#).



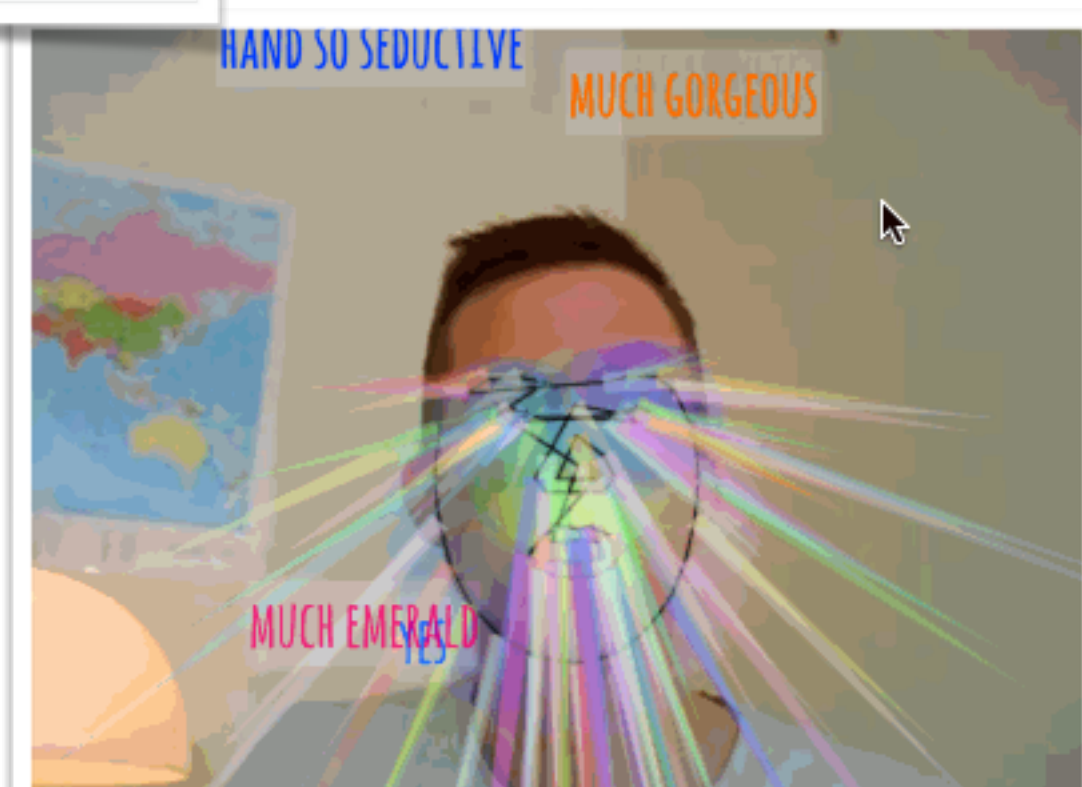
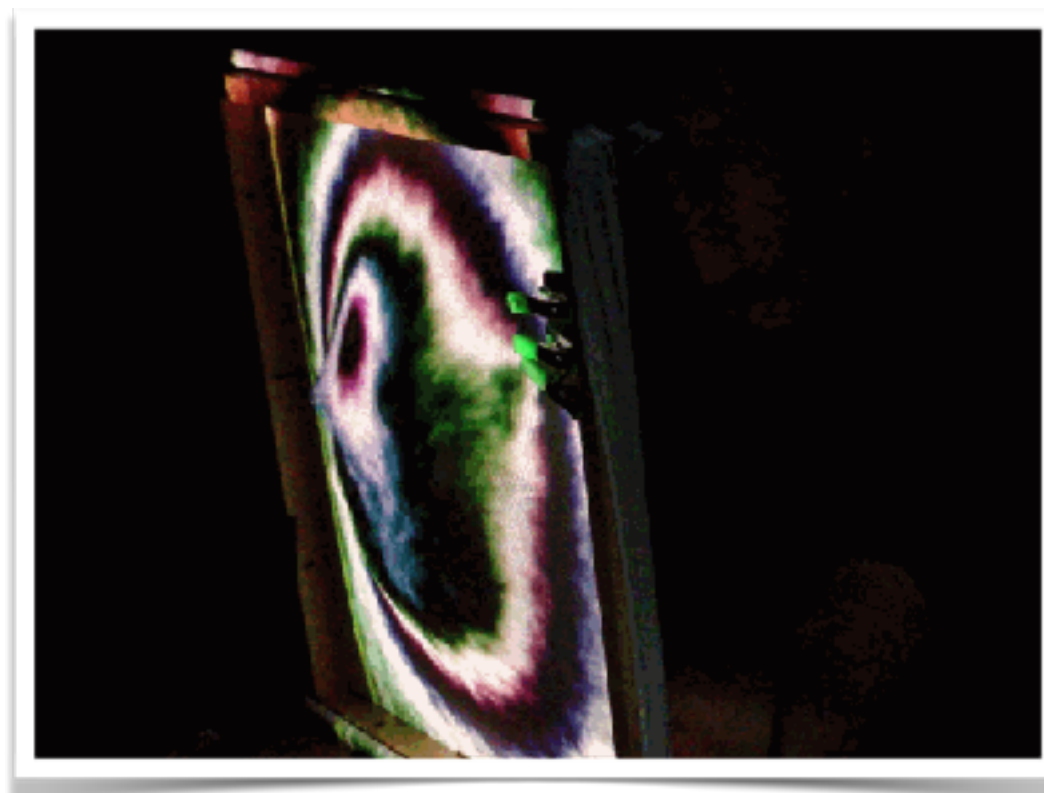
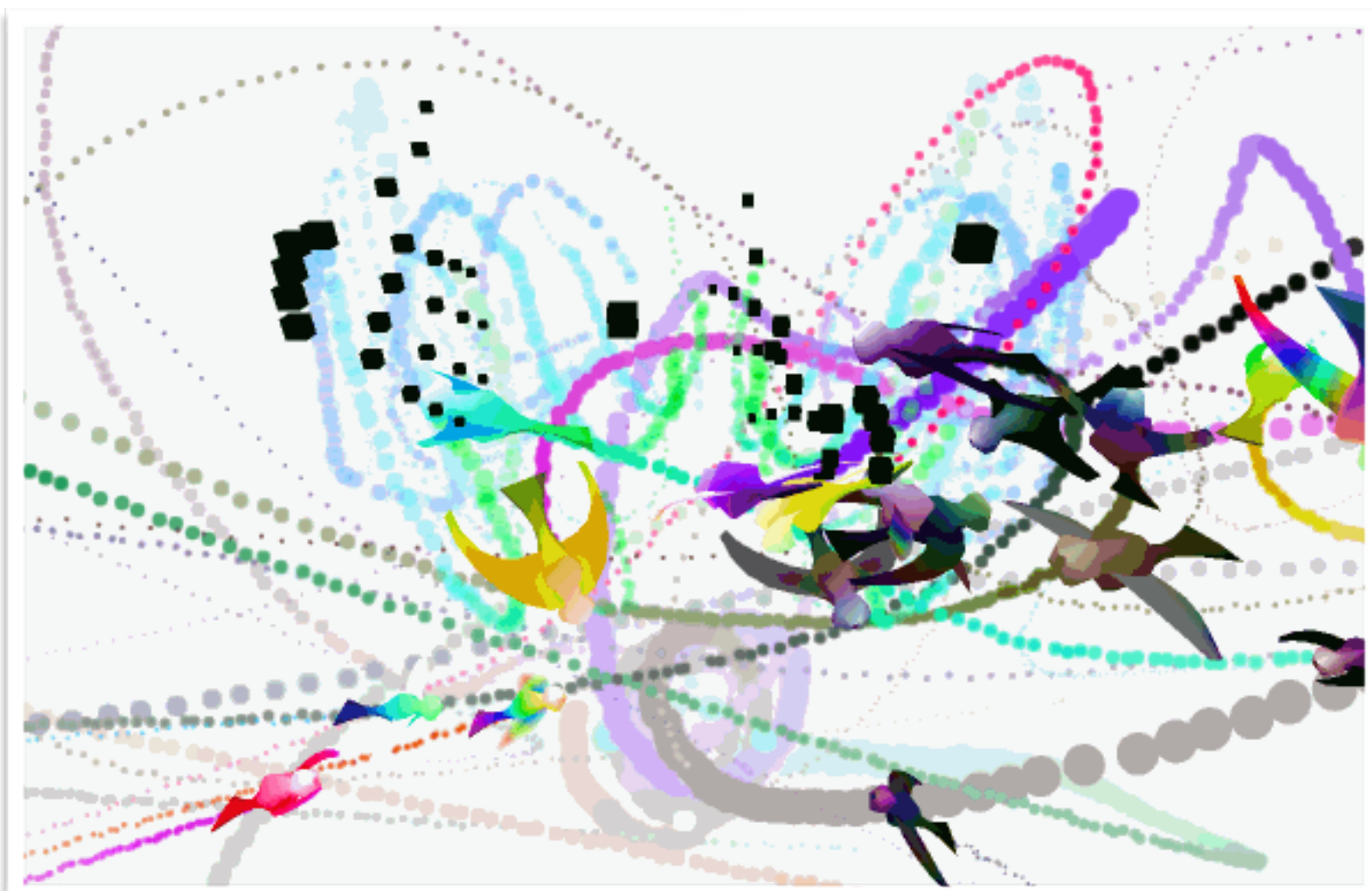
Idle Hands



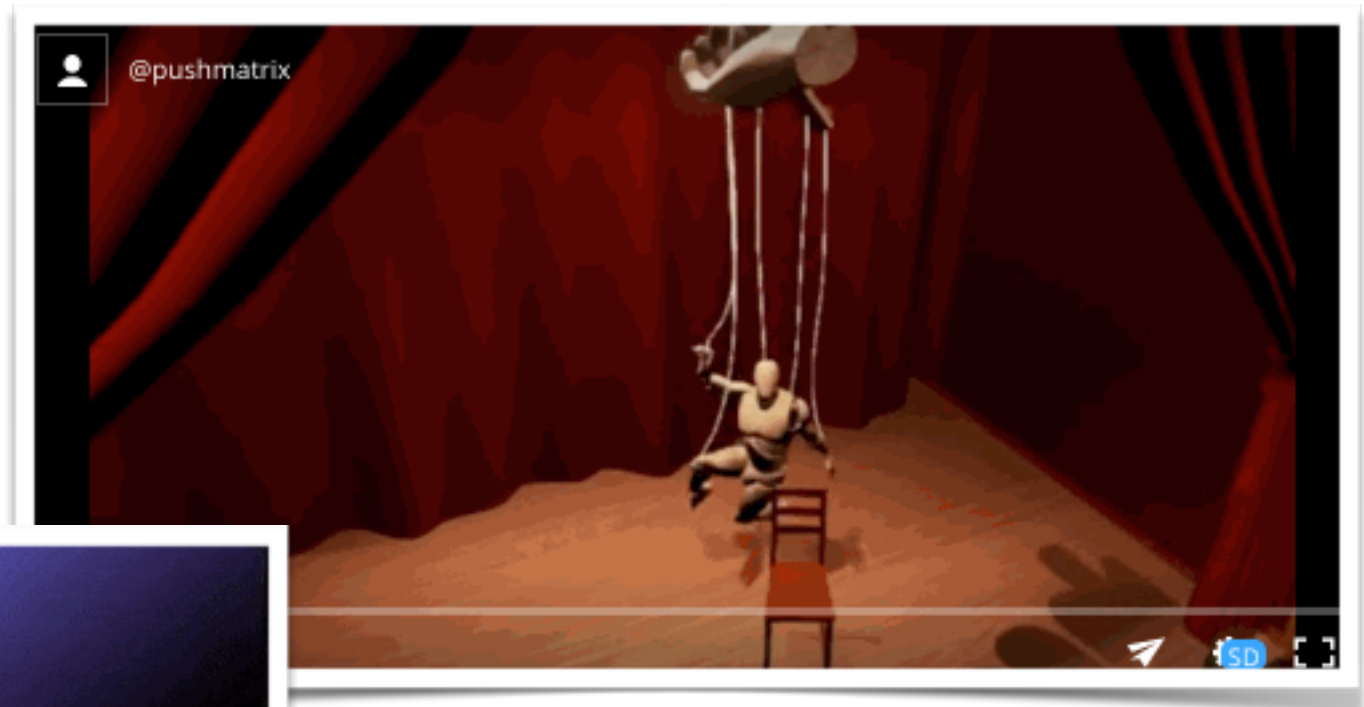
<http://www.galaxykate.com/apps/idlehands/>

AI Photo Booth





What's in the future?



IO Brush (MIT Media Lab)

Questions? MEET ME OUTSIDE

- <http://www.galaxykate.com/apps/>
- @galaxykate
- Go to the Center for Puppetry Arts in Atlanta



 **Max Kreminski** @maxkreminski

do you like casual creativity & the digital tools that support it?

if so, you're in luck: @GalaxyKate & I are co-organizing the first-ever Casual Creators Workshop at @iccc_conf this year!

preliminary paper submission deadline: May 4, 2020

mkremins.github.io/casual-creator...

Casual Creators

An [ICCC 2020](#) Workshop

[Topics](#) • [Submissions](#) • [Dates](#) • [Organizers](#)

The Casual Creators Workshop aims to foster experimentation and build community around the topic of *casual creators*: a recently-defined genre of creativity support tools that are specifically designed to support *autobiote* creativity, or creativity for its own sake. We also hope to promote discussion of the creative practices that emerge around casual creators, which are often casual, unskilled, ephemeral, and social.

The workshop will be held at the [International Conference on Computational Creativity](#) in Coimbra, Portugal.