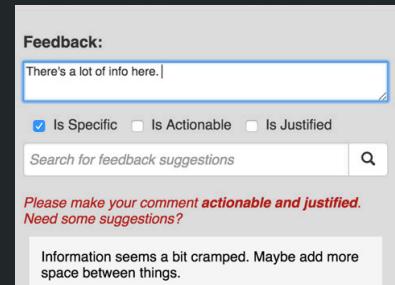
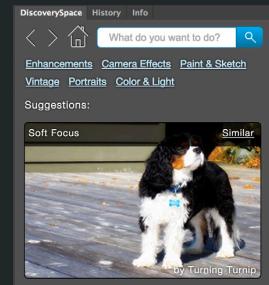
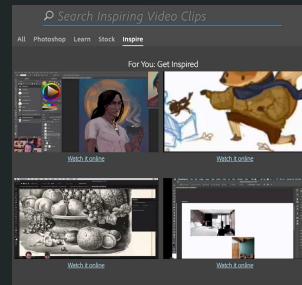
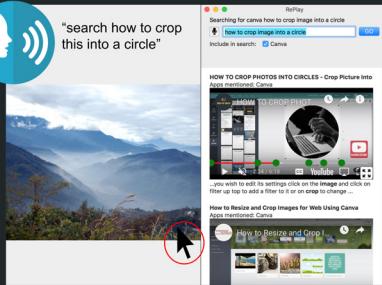
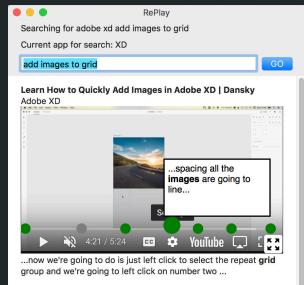


Contextually recommending expert help and demonstrations to improve creativity



Ailie Fraser
Thesis Defense
February 28, 2020

UC San Diego
The Design Lab

Thank you



UC San Diego
The Design Lab

People are creative with powerful software



Non-professionals seek creative outlets too...



...but are thwarted by complex software

The image is a collage of software interface screenshots, primarily from Adobe Photoshop, AutoCAD, and Adobe Premiere Pro, demonstrating the complexity of modern design and editing tools.

- Photoshop:** Shows the Photoshop menu bar with over 1000 commands, a color palette, and a brush tool.
- AutoCAD:** Shows the AutoCAD interface with its Application Menu, Quick Access Toolbar, Drawing Window, Project Navigator, Viewport Controls, Navigation Bar, and Properties Palette.
- Premiere Pro:** Shows the Premiere Pro interface with its own set of controls and panels.
- OmniGraffle:** Shows the OmniGraffle interface for creating diagrams.
- Final Cut Pro:** Shows the Final Cut Pro interface for video editing.
- Illustrator:** Shows the Illustrator interface with its own set of tools and panels.

[Lafreniere Thesis '14, McGrenere GI'00]

...but are thwarted by complex software



PROBLEM

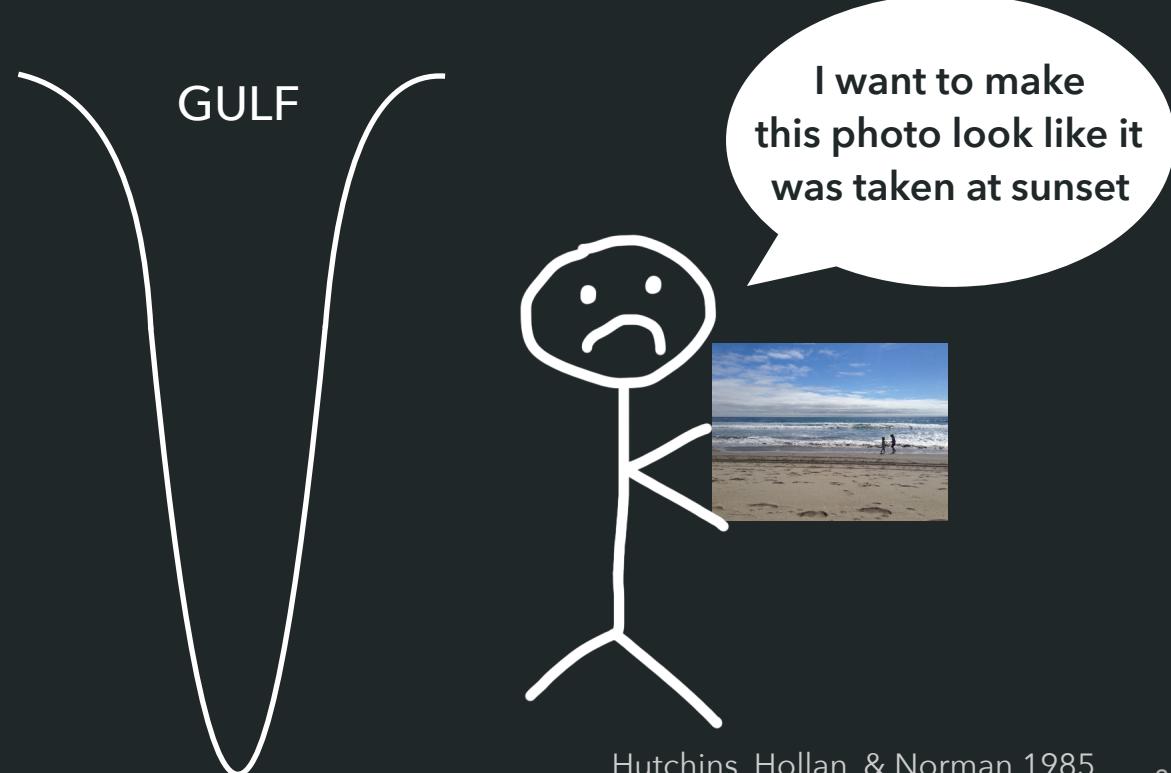
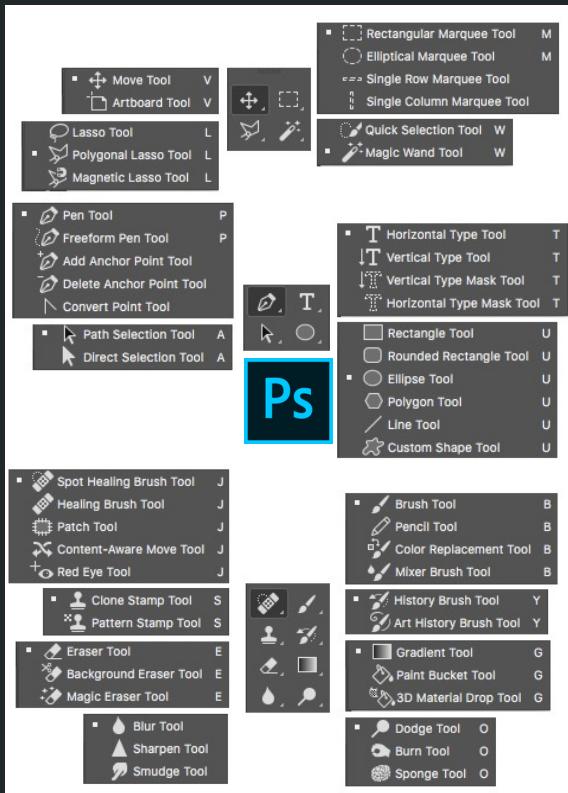
Complex software has a large gulf of execution



Hutchins, Hollan, & Norman 1985

PROBLEM

Complex software has a large gulf of execution

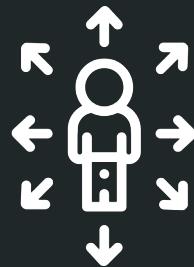


Hutchins, Hollan, & Norman 1985

PROBLEM

3 main challenges with creative software

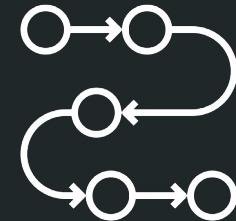
Many options



Lack of vocabulary



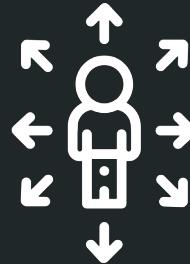
Multiple steps



PROBLEM

3 main challenges with online resources

Many options



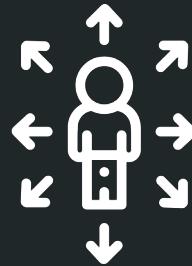
The screenshot shows a YouTube search results page for "adobe xd how to set margins in layout grid". The results are as follows:

- How to use the grid tool in Adobe XD** (13K views, 2 years ago)
- Responsive Layout Grids Adobe XD Tutorial** (8K views, 2 years ago)
- Handoff Design Specs Adobe XD Tutorial** (11K views, 2 years ago)
- Create a 12-Column Grid in Adobe XD** (3.8K views, 9 months ago)
- Create Guides in Adobe XD | 2 Minute Tutorial** (39K views, 1 year ago)

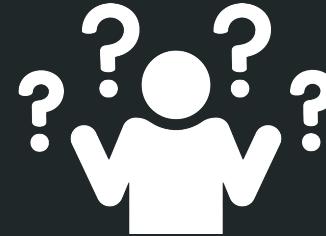
PROBLEM

3 main challenges with online resources

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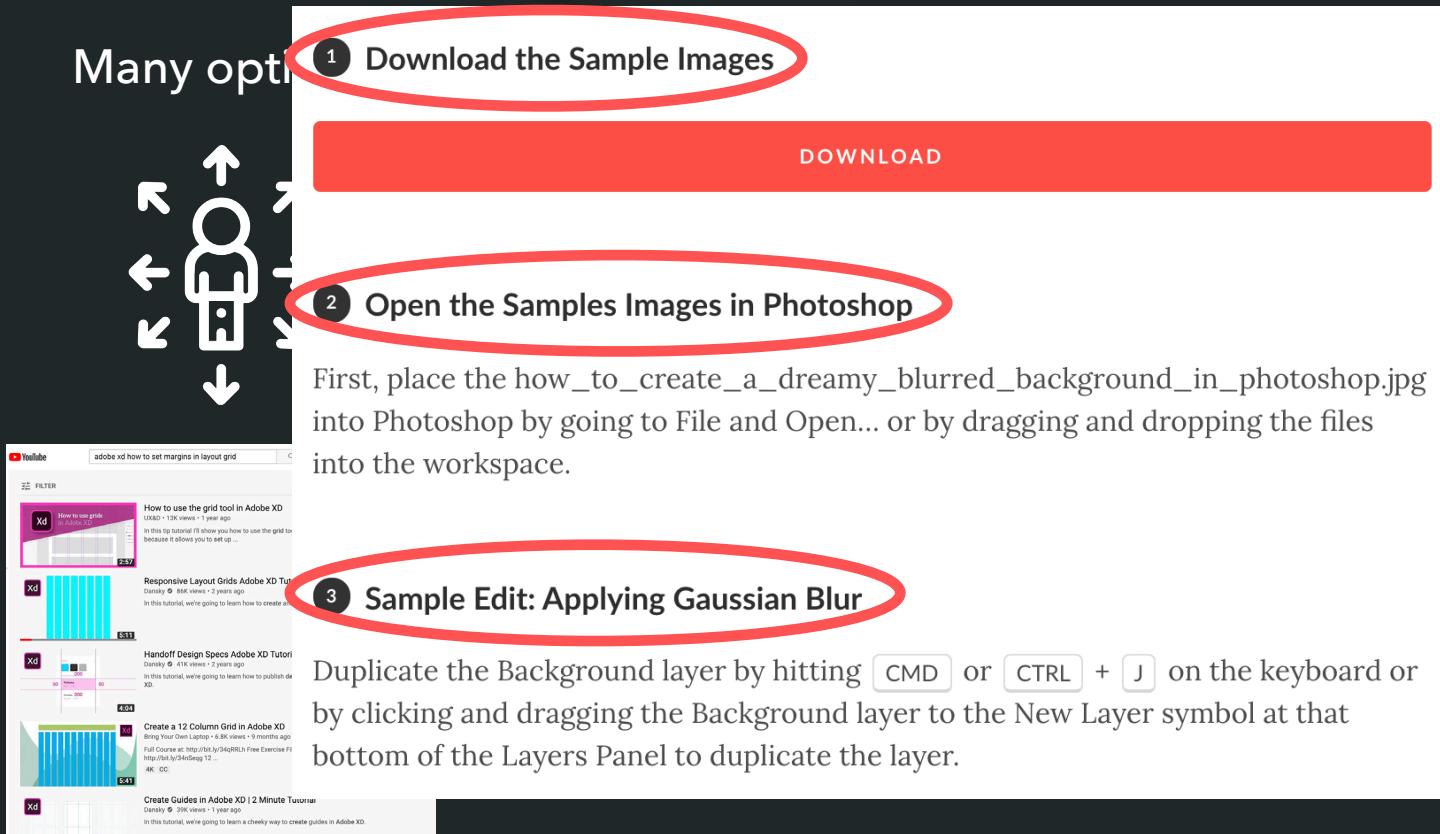


A screenshot of a YouTube search results page for "adobe xd how to set margins in layout grid". The results show several video thumbnails related to Adobe XD, including "How to use the grid tool in Adobe XD", "Responsive Layout Grids Adobe XD Tutorial", "Handoff Design Specs Adobe XD Tutorial", "Create a 12 Column Grid in Adobe XD", and "Create Guides in Adobe XD | 2 Minute Tutorial". Each thumbnail includes the video title, view count, and upload date.



PROBLEM

3 main challenges with online resources



Many options

- 1 Download the Sample Images
- 2 Open the Samples Images in Photoshop
- 3 Sample Edit: Applying Gaussian Blur

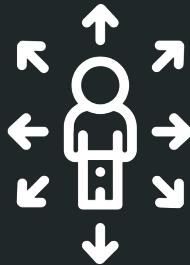
First, place the `how_to_create_a_dreamy_blurred_background_in_photoshop.jpg` into Photoshop by going to File and Open... or by dragging and dropping the files into the workspace.

Duplicate the Background layer by hitting `CMD` or `CTRL` + `J` on the keyboard or by clicking and dragging the Background layer to the New Layer symbol at that bottom of the Layers Panel to duplicate the layer.

PROBLEM

3 main challenges with online resources

Many options

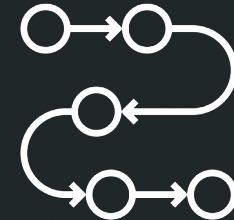


A screenshot of a YouTube search results page for "adobe xd how to set margins in layout grid". The results show several video thumbnails related to Adobe XD, such as "How to use the grid tool in Adobe XD", "Responsive Layout Grids Adobe XD Tutorial", "Handoff Design Specs Adobe XD Tutorial", "Create a 12 Column Grid in Adobe XD", and "Create Guides in Adobe XD | 2 Minute Tutorial". Each thumbnail includes the video title, number of views, and upload date.

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Multiple steps



① Download the Sample Images
[DOWNLOAD](#)

② Open the Samples Images in Photoshop
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Duplicate the Background layer by hitting `CMD + J` or `CTRL + J` on the keyboard or by clicking and dragging the Background layer to the New Layer symbol at that bottom of the Layers Panel to duplicate the layer.

My dissertation introduces systems that address the...

3 main challenges with online resources

Many options

Lack of vocabulary

Multiple steps

...by:

- *curating expert help and demonstrations*
- *and presenting them in context*

Thesis Statement

- *Curating expert help and demonstrations*
- *and presenting them in context*

enables people to produce better work.



My focus: Creative work

Published Papers

- 2020 ACM CHI** *Temporal Segmentation of Creative Live Streams.*
[C. Ailie Fraser](#), Joy Kim, Valentina Shin, Joel Brandt, Mira Dontcheva
- 2019 ACM C&C** *Sharing the Studio: How Creative Livestreaming can Inspire, Educate, and Engage.*
[C. Ailie Fraser](#), Joy O. Kim, Alison Thornsberry, Scott Klemmer, Mira Dontcheva
- 2019 ACM CHI** *RePlay: Contextually Presenting Learning Videos Across Software Applications.* **Honourable Mention**
[C. Ailie Fraser](#), Tricia J. Ngoon, Mira Dontcheva, Scott Klemmer
- 2018 ACM CHI** *Interactive Guidance Techniques for Improving Creative Feedback.* **Honourable Mention**
Tricia J. Ngoon, [C. Ailie Fraser](#), Ariel S. Weingarten, Mira Dontcheva, Scott Klemmer
- 2017 ACM CHI** *WeBuild: Automatically Distributing Assembly Tasks Among Collocated Workers to Improve Coordination.*
[C. Ailie Fraser](#), Tovi Grossman, George Fitzmaurice
- 2016 ACM DIS** *DiscoverySpace: Suggesting Actions in Complex Software.*
[C. Ailie Fraser](#), Mira Dontcheva, Holger Winnemöller, Sheryl Ehrlich, Scott Klemmer
- 2016 ACM CHI** *Framing Feedback: Choosing Review Environment Features that Support High Quality Peer Assessment.*
Catherine M. Hicks, Vineet Pandey, [C. Ailie Fraser](#), Scott Klemmer

SOLUTION

Expert resources can help with...

*"I need help
accomplishing my goal"*

*"I don't know what my
end goal is"*

*"I have a goal and want
it done"*

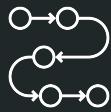
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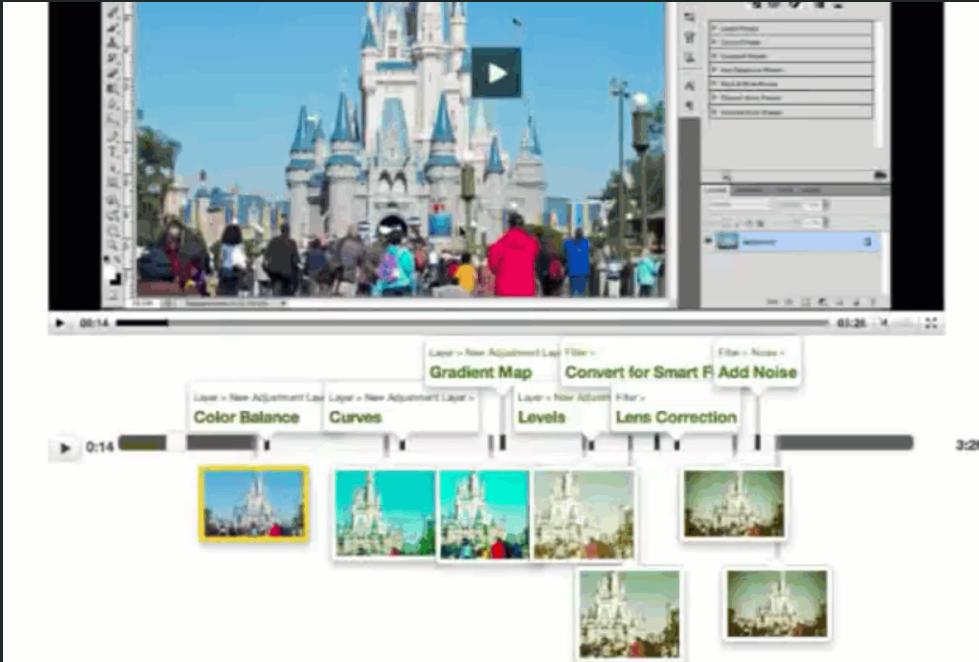
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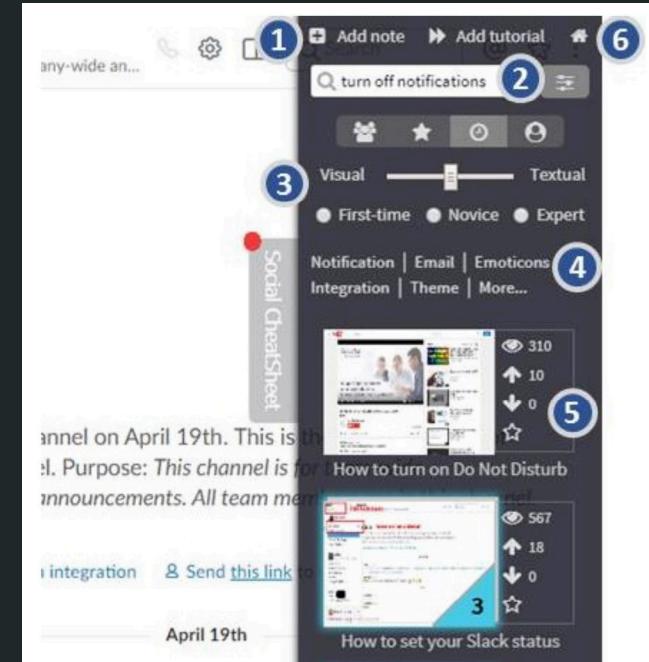


Segmenting tutorials & displaying them in context eases in-task use

ToolScape. Kim CHI '14



Social CheatSheet. Vermette CSCW '17

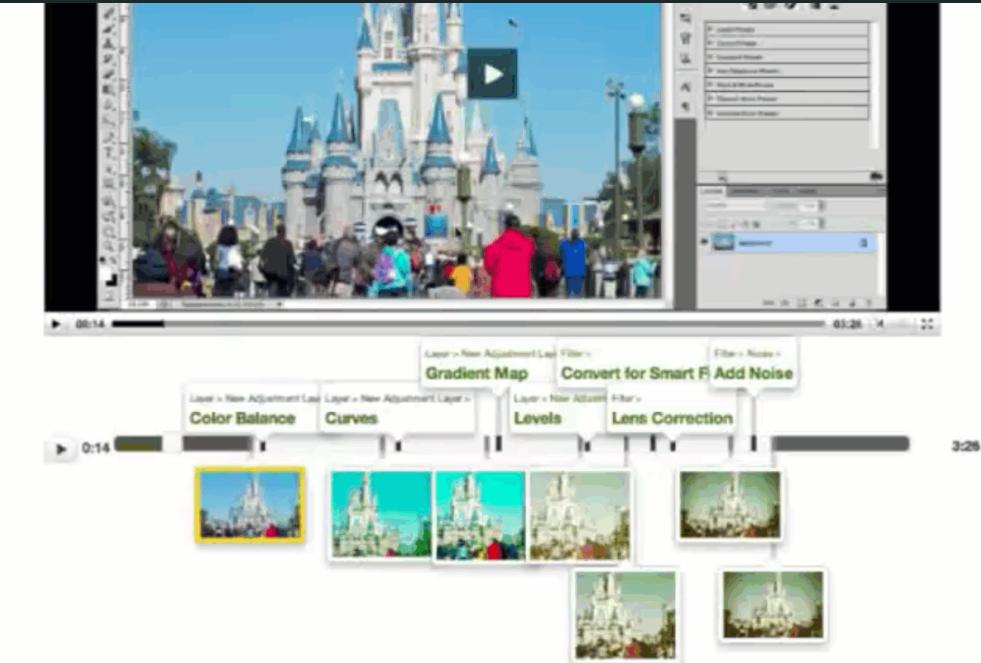


[Kim CHI EA '13, Banovic UIST '12, Chi UIST '12, Matejka CHI '11, Nguyen CHI '15, Vermette GI '15, Chilana CHI '12, Ichinco CHI '17, Kelleher CHI '05, Lafreniere OzCHI '14]

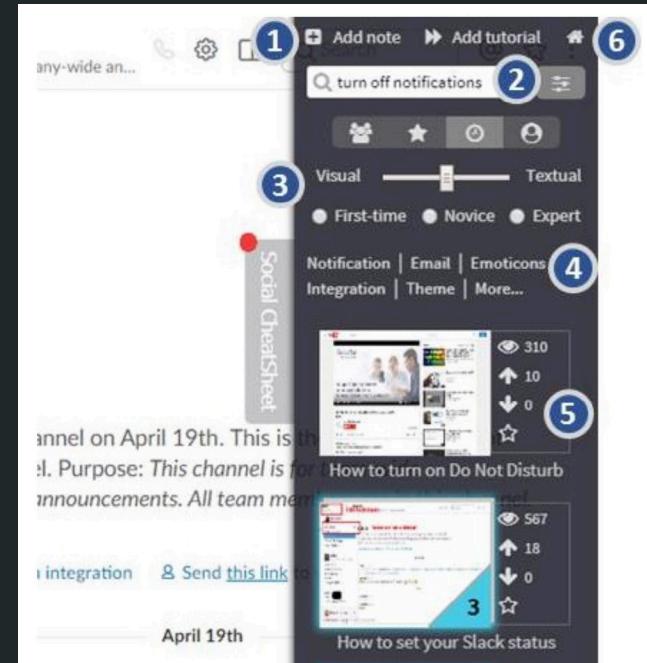


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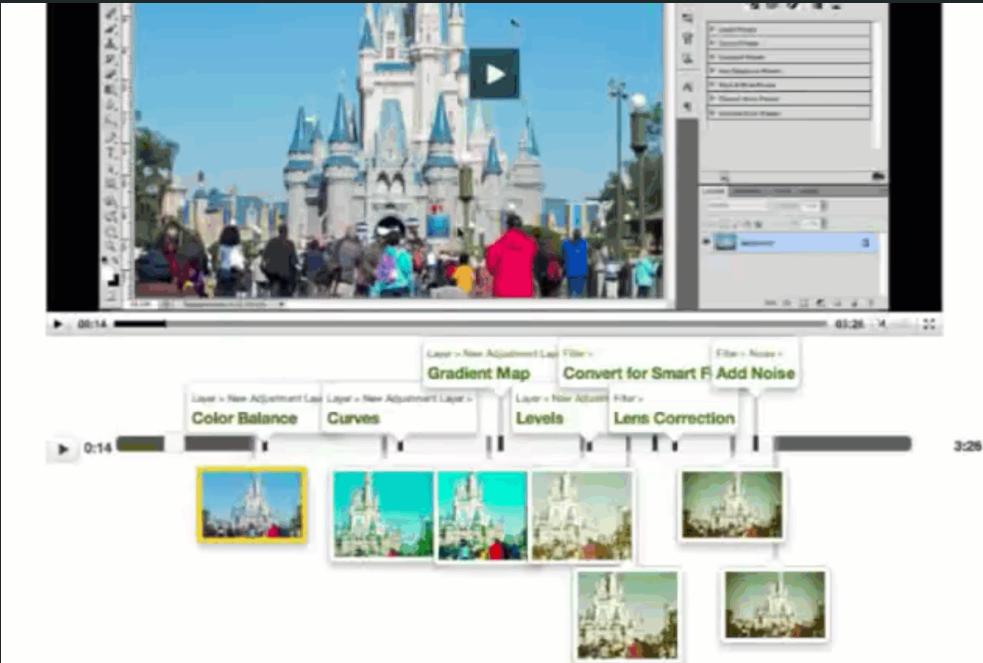
Social CheatSheet. Vermette CSCW '17



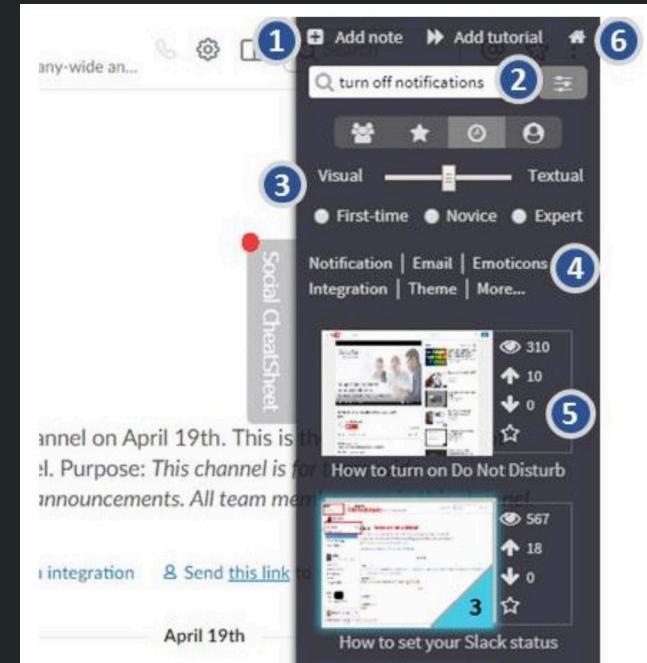
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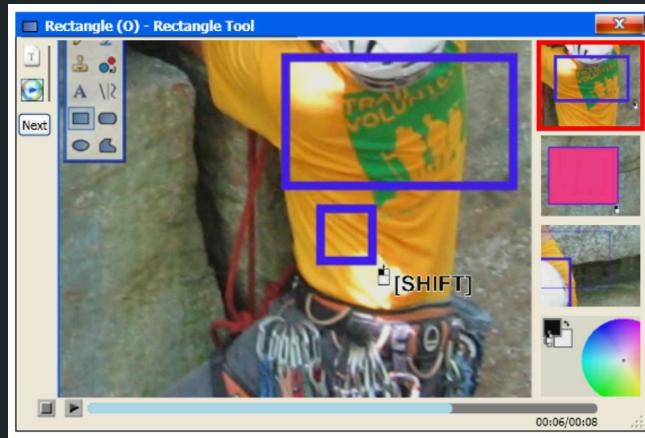
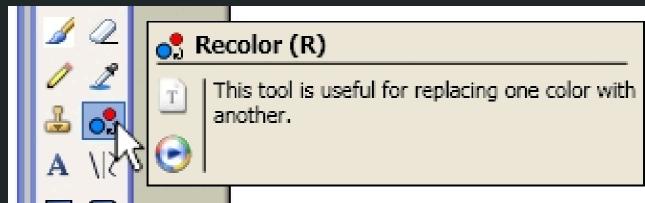
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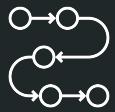
? ? ? In-situ examples support learning & inspiration

ToolClips. Grossman CHI '10



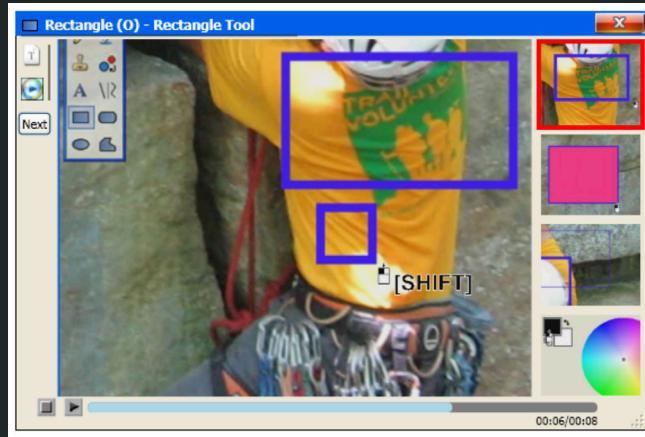
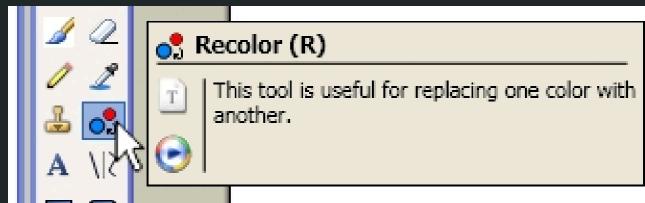
Herring CHI '09





In-situ examples support learning & inspiration

ToolClips. Grossman CHI '10



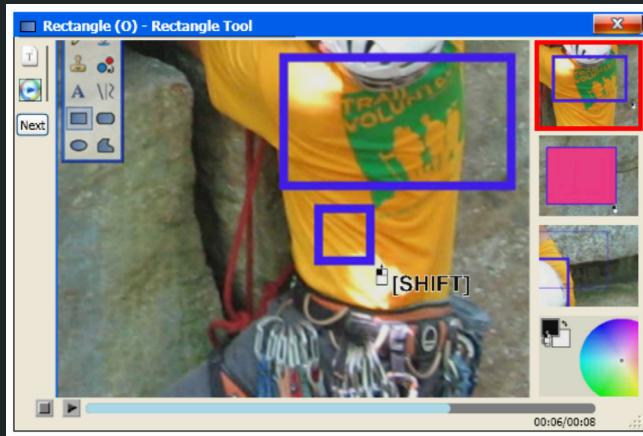
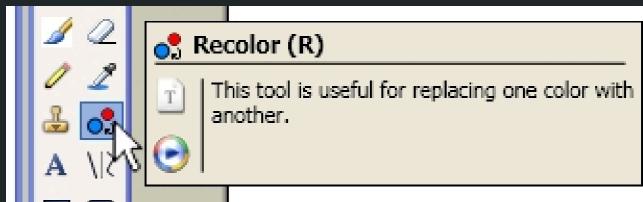
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ToolClips. Grossman CHI '10



Herring CHI '09



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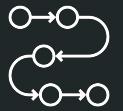
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Contextual solutions & operations help accomplish tasks faster

Blueprint. Brandt CHI '10

The screenshot shows a desktop application window with a title bar 'urlLoader'. Inside, there's a search icon and a section titled 'Flex 3 - Using the URLLoader class' with a link to 'http://livedocs.adobe.com/flex/3/net/URLLoader.html'. Below this, a snippet of ActionScript code is displayed:

```
<?xml version="1.0" encoding="utf-8"?>
<mx:Application xmlns:mx="http://www.adobe.com/2006/mxml">
    urlLoader
```

```
var loader:URLLoader = new URLLoader();
loader.addEventListener(function(e:Event){
    trace("loaded");
});
loader.load(new URLRequest("example.com"));
```

The screenshot shows a desktop application window with a title bar 'urlLoader'. Inside, there's a search icon and a snippet of ActionScript code that appears to be a pasted example. The code includes comments indicating it was pasted on Tuesday, March 24, 2009, at 13:24:06 PDT. The code itself is identical to the one in the first window.

```
<?xml version="1.0" encoding="utf-8"?>
<mx:Application xmlns:mx="http://www.adobe.com/2006/mxml">
<mx:Script>
```

```
// @url http://livedocs.adobe.com/flex/3/net/URLLoader.html
// @pasted Tue Mar 24 13:24:06 PDT 2009
// @query: urlloader
```

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var loader:URLLoader = new URLLoader();
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    urlLoader [?] [x]
    <mx:Script>
        <![CDATA[
            var loader:URLRequest = new URLRequest();
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        ]]&gt;
    &lt;/mx:Script&gt;
&lt;/mx:Application&gt;</pre>

Flex 3 - Using the URLRequest class  
http://livedocs.adobe.com/flex/3/net/URLRequest.html  
You can use the URLRequest class to load XML data from a URL.



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function handleLoad(e:Event) {
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}
```

The screenshot shows a desktop application window with a title bar 'urlLoader'. Inside, there's a search icon and a code snippet pasted from a source. The code is identical to the one in the first window:

```
<?xml version="1.0" encoding="utf-8"?>
<mx:Application xmlns:mx="http://www.adobe.com/2006/mxml">
<mx:Script>
```

```
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Expert resources can help with...

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display in context

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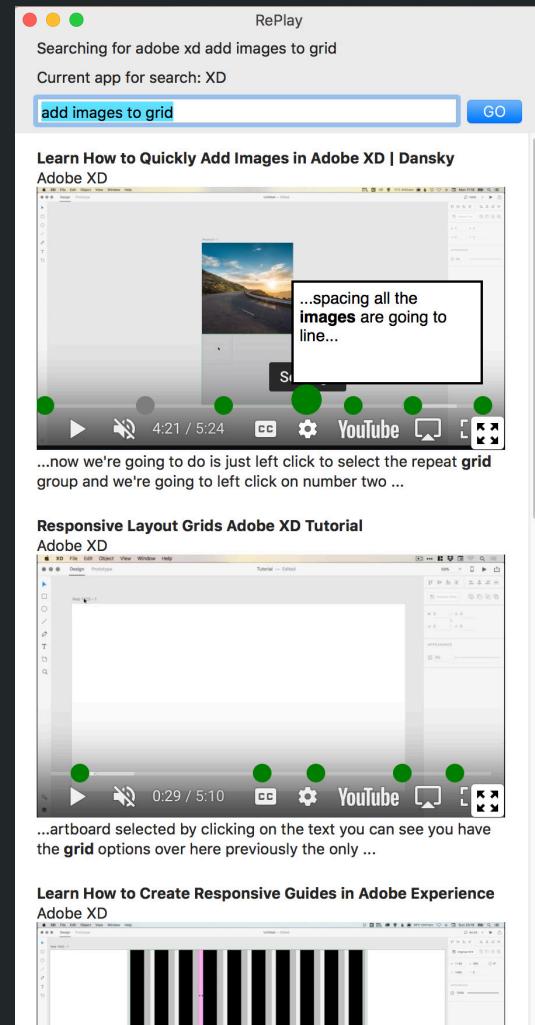
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RePlay: Contextually Presenting Learning Videos Across Applications

Ailie Fraser, Tricia Ngoon, Mira Dontcheva, Scott Klemmer

Proceedings of CHI 2019 - Honourable Mention 



The image displays three screenshots of the RePlay application interface, which allows users to search and present learning videos across different applications. The top screenshot shows a search bar with 'adobe xd add images to grid' and a 'GO' button. The middle screenshot shows a video player for 'Learn How to Quickly Add Images in Adobe XD | Dansky Adobe XD', with a callout box highlighting a text input field and the text '...spacing all the images are going to line...'. The bottom screenshot shows a video player for 'Responsive Layout Grids Adobe XD Tutorial Adobe XD', with a callout box highlighting a text input field and the text '...now we're going to do is just left click to select the repeat grid group and we're going to left click on number two ...'. The third screenshot at the bottom shows a video player for 'Learn How to Create Responsive Guides in Adobe Experience Adobe XD', displaying a design interface with vertical black and white stripes.

RePlay

Searching for adobe xd add images to grid

Current app for search: XD

add images to grid

Learn How to Quickly Add Images in Adobe XD | Dansky
Adobe XD

...spacing all the images are going to line...

4:21 / 5:24 CC YouTube

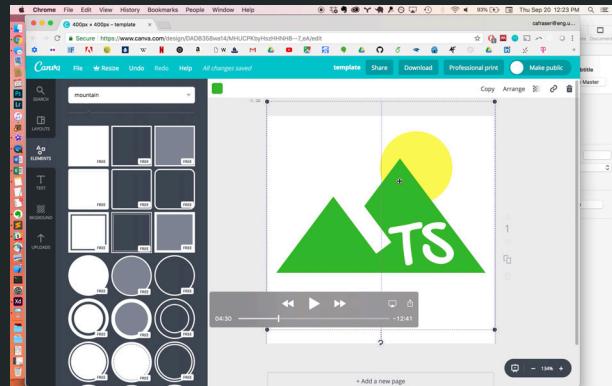
Responsive Layout Grids Adobe XD Tutorial
Adobe XD

0:29 / 5:10 CC YouTube

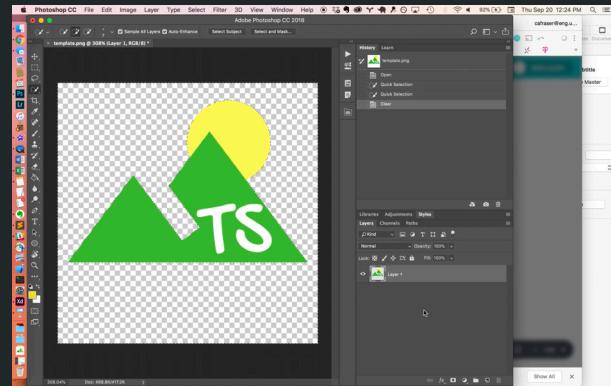
artboard selected by clicking on the text you can see you have the grid options over here previously the only ...

Learn How to Create Responsive Guides in Adobe Experience
Adobe XD

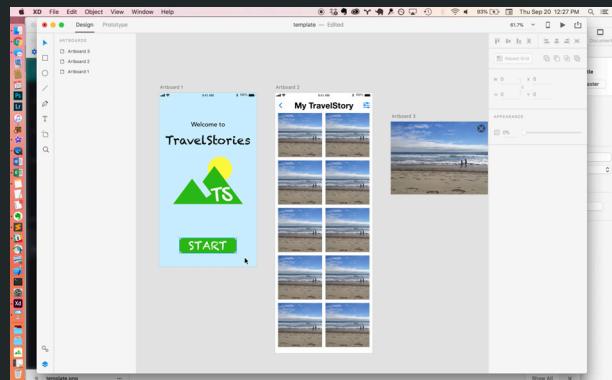
Complex activities often comprise multiple applications



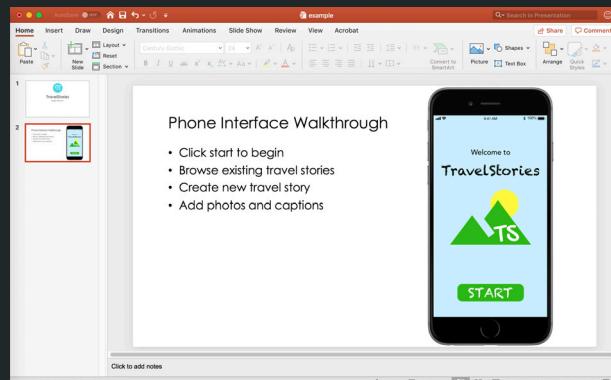
Canva



Photoshop

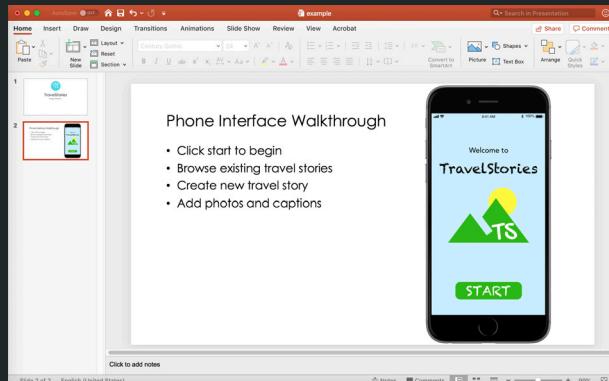
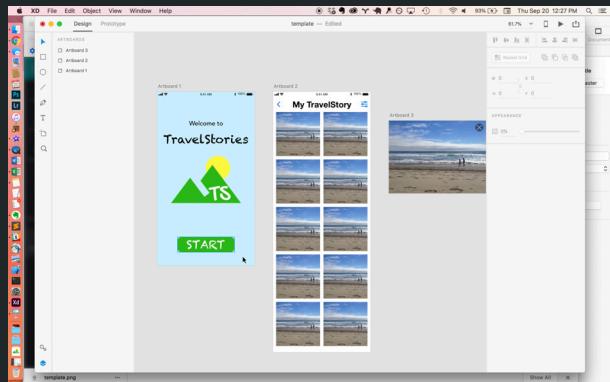
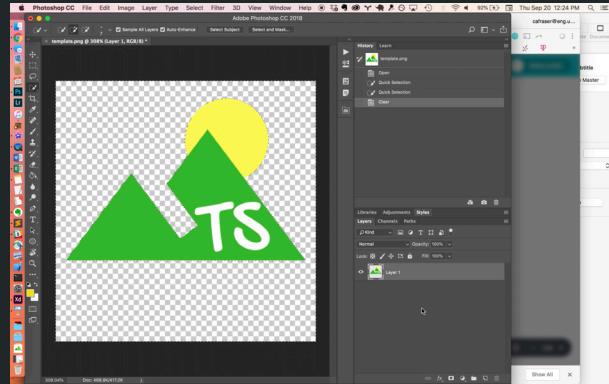
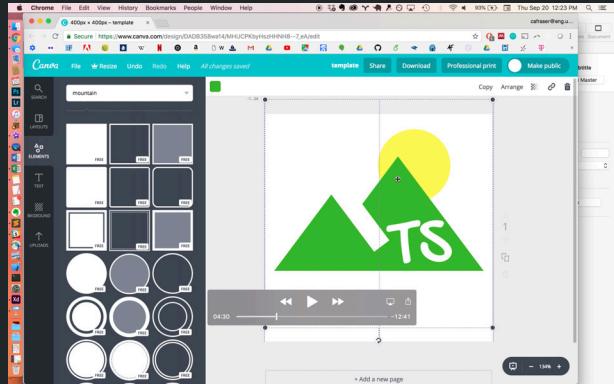


Adobe XD



Powerpoint

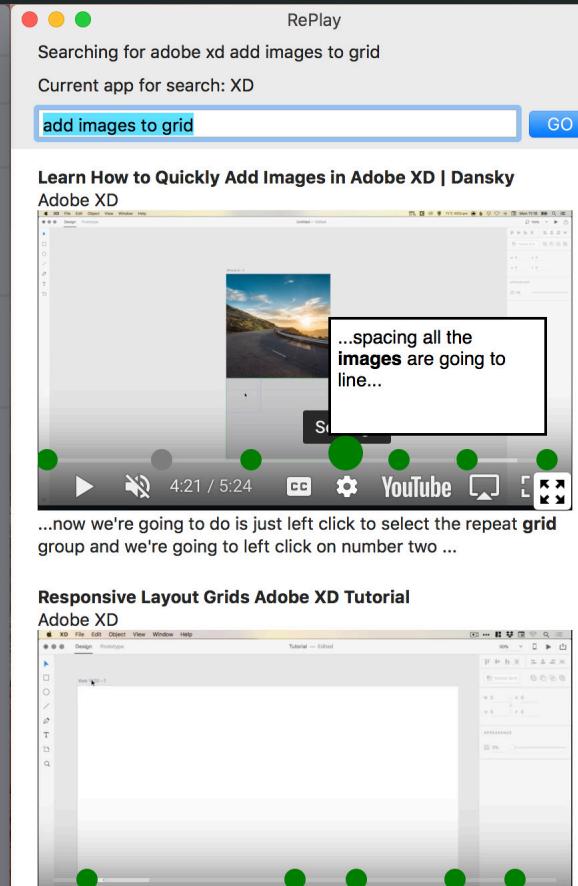
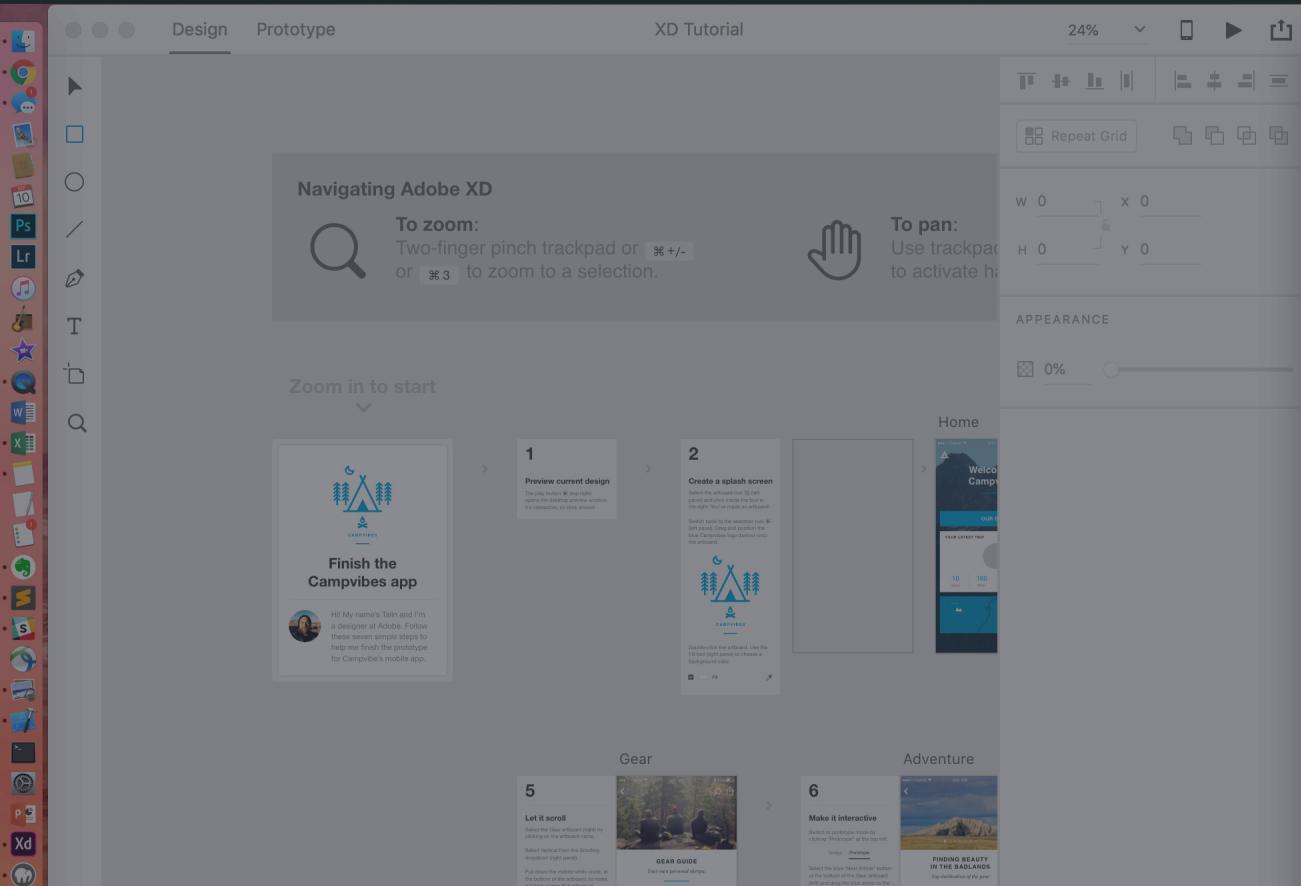
Applications are walled gardens



Research Questions

- How might we provide contextual assistance across multiple applications?
- Does contextual assistance help people find what they need more quickly?

RePlay: an application-independent approach





1. Help users create better search queries

Saved OFF

File Edit View Insert Format Tools Data Window Help

mturk_data_full Search Sheet

Draw Page Layout Formulas Data Review View

Calibri (Body) 11 A A% Conditional Formatting

B I U Cells Editing

Cell Styles

fx =SUM(AZ3:CT3)

DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DN	
llscore	testallacc	testoldscore	testoldacc	testnearscore	testnearacc	testfarscore	testfaracc	analogyacc	change			
20	0.83333333		11	0.91666667		5	0.83333333		4	0.66666667	0.56666667	0.11111111
21	0.875			10	0.83333333	6	1		5	0.83333333		0.59722222
14	0.58333333		7	0.58333333	4	0.66666667		3	0.5	0.86666667	0.27777778	
20	0.83333333		11	0.91666667	5	0.83333333	4	0.66666667	0.86666667	0.44444444		
14	0.58333333		7	0.58333333	3	0.5	4	0.66666667	0.6	0.36111111		
24	1		12	1	6	1	6	1	0.5		0.5	
12	0.5		7	0.58333333	4	0.66666667	1	0.16666667	0.63333333	0.44444444		
12	0.5		6	0.5	4	0.66666667	2	0.33333333	0.63333333	0.38888889		
20	0.83333333		11	0.91666667	6	1	3	0.5	0.76666667	0.55555556		
24	1		12	1	6	1	6	1	0.83333333	0.33333333		
17	0.70833333		9	0.75	3	0.5	5	0.83333333	0.83333333	0.375		
18	0.75		8	0.66666667	5	0.83333333	5	0.83333333	0.56666667	0.41666667		
23	0.95833333		12	1	6	1	5	0.83333333	0.63333333	0.625		
23	0.95833333		11	0.91666667	6	1	6	1	0.43333333	0.625		
22	0.91666667		10	0.83333333	6	1	6	1	0.36666667	0.36111111		
11	0.45833333		6	0.5	2	0.33333333	3	0.5	0.8	0.40277778		
15	0.625		7	0.58333333	4	0.66666667	4	0.66666667	0.83333333	0.29166667		
17	0.70833333		8	0.66666667	5	0.83333333	4	0.66666667	0.46666667	0.70833333		
11	0.45833333		5	0.41666667	4	0.66666667	2	0.33333333	0.5	0.45833333		
15	0.625		9	0.75	4	0.66666667	2	0.33333333	0.43333333	0.45833333		
14	0.58333333		8	0.66666667	3	0.5	3	0.5	0.56666667	0.47222222		
15	0.625		7	0.58333333	4	0.66666667	4	0.66666667	0.83333333	0.56944444		
21	0.875		10	0.83333333	5	0.83333333	6	1	0.56666667	0.59722222		
15	0.625		8	0.66666667	4	0.66666667	3	0.5	0.4	0.125		

You clicked Home.

Current app for search: Microsoft Excel

Home GO

Excel Tutorial: Learn Excel in 30 Minutes - Just Excel

Start Mail Select Address Book Insert Merge Fields Start Mail Header

Message refines To: From: Subject: Mail format: Send records: All Compose message

We have the following address field that corresponds with the Excel data file you press email here you click all StreetAddress, nCity, nState

cc YouTube

...send email messages for the subject in here and then the to field that is the field that corresponds with

The Beginner's Guide to Excel - Excel Basics

Excel

i



1. Help users create better search queries

Detect user behaviour

RePlay

OS Accessibility API



Design Prototype Share

Accessibility Inspector

```
<AXApplication: "XD">
<AXWindow: "template-edited">
<AXCheckBox: ">
```

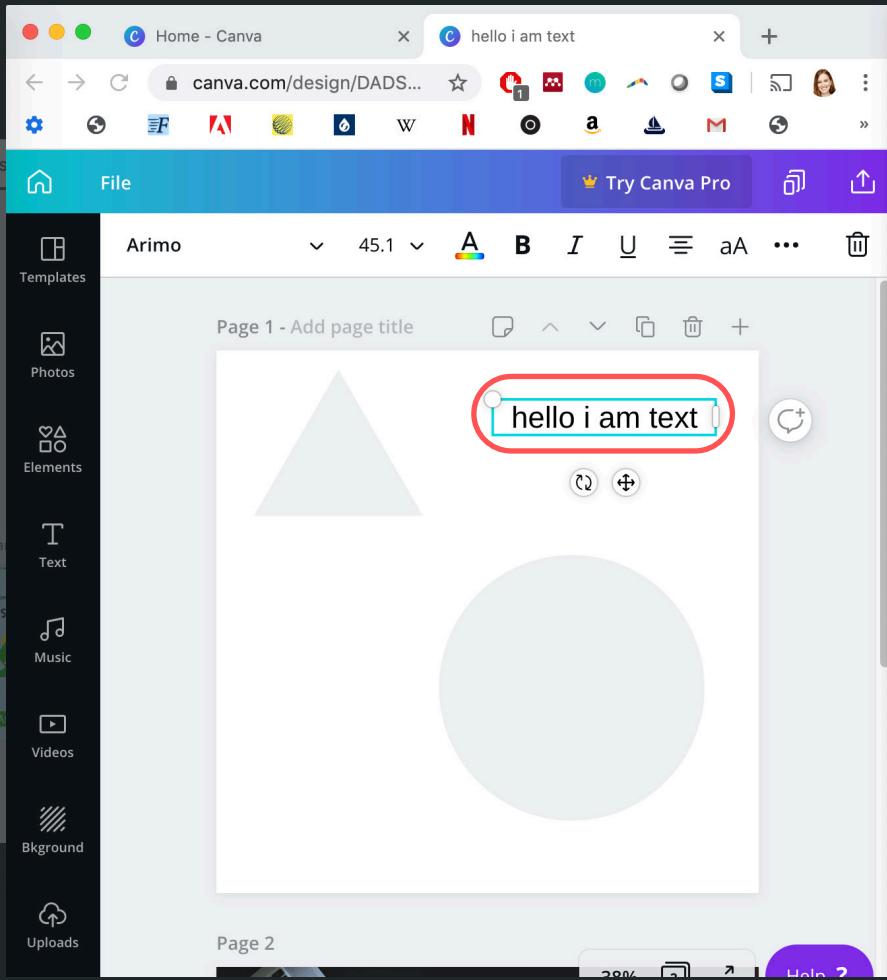
Attributes:

```
AXIdentifier: "toolbarEllipseButton"
AXEnabled: "1"
AXDescription: "Ellipse"
AXParent: "<AXWindow: "template-edited">"
AXSize: "w=28 h=24"
AXFocused (W): "0"
AXActivationPoint: "x=382 y=156"
AXRole: "AXCheckBox"
AXTopLevelUIElement: "<AXWindow: "template-edited">"
AXHelp: "Ellipse (E)"
AXValue: "1"
AXPosition: "x=368 y=144"
AXWindow: "<AXWindow: "template-edited">"
AXRoleDescription: "toggle button"
AXTitle: ""
AXSubrole: "AXToggle"
AXFrame: "x=368 y=144 w=28 h=24"
```

Actions:

```
AXPress - press
```

The screenshot shows the XD application interface with the Accessibility Inspector panel open. On the left, there's a toolbar with various icons. One specific icon, which is a blue circle with a white dot and a small horizontal line, is circled with a red oval. This icon is part of the toolbar. In the center, there are two artboards labeled 'Artboard 1' and 'Artboard 2'. Artboard 1 displays a mobile application screen titled 'Welcome to TravelStories' with a green mountain icon and a 'START' button. Artboard 2 shows a grid of five smaller images. On the right side of the interface, the Accessibility Inspector panel is displayed, listing various attributes for the selected element. Several attributes are highlighted with red ovals: 'AXRole: "AXCheckBox"', 'AXRoleDescription: "toggle button"', and 'AXSubrole: "AXToggle"'. At the bottom of the inspector, there's a section for actions, with 'AXPress - press' listed.



Accessibility Inspector

Attributes:

```
AXFocused: "0"
AXTitle: ""
AXElementBusy: "0"
AXLinkedUIElements: "<array of size 0>"
AXPosition: "x=412 y=323"
AXSelected: "0"
AXStartTextMarker: "<AXTextMarker 0x600002134b90 [0x7fff887ad8e0]>(length = 56, bytes = 0x02000008b050000fefffff00000000 ... 423633410015b63a)"
```

AXEnabled: "1"
AXVisited: "0"
AXDOMIdentifier: ""
AXHelp: ""
AXChildren: "<array of size 0>"
AXRole: "AXStaticText"
AXParent: "<AXGroup: >"

AXSelectedTextMarkerRange: "<AXTextMarkerRange 0x60000300ceao [0x7fff887ad8e0]>(startMarker:<AXTextMarker 0x600002132350 [0x7fff887ad8e0]>(length = 56, bytes = 0x0000000000000000feffffffffffff ... 0000000000000000) endMarker:<AXTextMarker 0x600002132850 [0x7fff887ad8e0]>(length = 56, bytes = 0x0000000000000000feffffffffffff ... 0000000000000000))"

AXTitleUIElement: "(null)"
AXDOMClassList: "<array of size 0>"
AXDescription: ""
AXSubrole: "(null)"
AXTopLevelUIElement: "<AXWindow: "hello i am text - Google Chrome - Ailie (cafraiser@eng.ucsd.edu)">"

AXValue: "hello i am text"
AXBlockQuotedLevel: "0"
AXRoleDescription: "text"
AXSize: "w=142 h=27"
AXWindow: "<AXWindow: "hello i am text - Google Chrome - Ailie (cafraiser@eng.ucsd.edu)">"

AXEndTextMarker: "<AXTextMarker 0x600002132940 [0x7fff887ad8e0]>(length = 56, bytes = 0x02000008b050000fefffff07030000 ... 42363341007f0000)"

AXFrame: "x=412 y=323 w=142 h=27"

Actions:

```
AXShowMenu - show menu
AXScrollToVisible - AXScrollToVisible
```

Canva.com/design/DADS... hello i am text

Adobe Photoshop CC 2019

Attributes:

```
<AXApplication: "Photoshop CC">
<AXWindow: "Untitled-1 @ 66.7% (RGB/8%)>
```

Attributes:

- AXFocused: "1"
- AXFullScreen: "0"
- AXTitle: "Untitled-1 @ 66.7% (RGB/8%)"
- AXChildrenInNavigationOrder: "<array of size 17>"
- AXPosition (W): "x=169 y=23"
- AXGrowArea: "(null)"
- AXMinimizeButton: "(null)"
- AXDocument: "(null)"
- AXSections (W): "<array of size 1>"
- AXCloseButton: "(null)"
- AXMain (W): "1"
- AXFullScreenButton: "(null)"
- AXProxy: "(null)"
- AXDefaultButton: "(null)"
- AXMinimized (W): "0"
- AXChildren: "<array of size 17>"
- AXRole: "AXWindow"**
- AXParent: "<AXApplication: "Photoshop CC">"
- AXTitleUIElement: "(null)"
- AXCancelButton: "(null)"
- AXModal: "0"
- AXSubrole: "AXStandardWindow"
- AXZoomButton: "(null)"
- AXRoleDescription: "standard window"
- AXSize (W): "w=570 h=895"
- AXToolbarButton: "(null)"
- AXFrame: "x=169 y=23 w=570 h=895"

Actions:

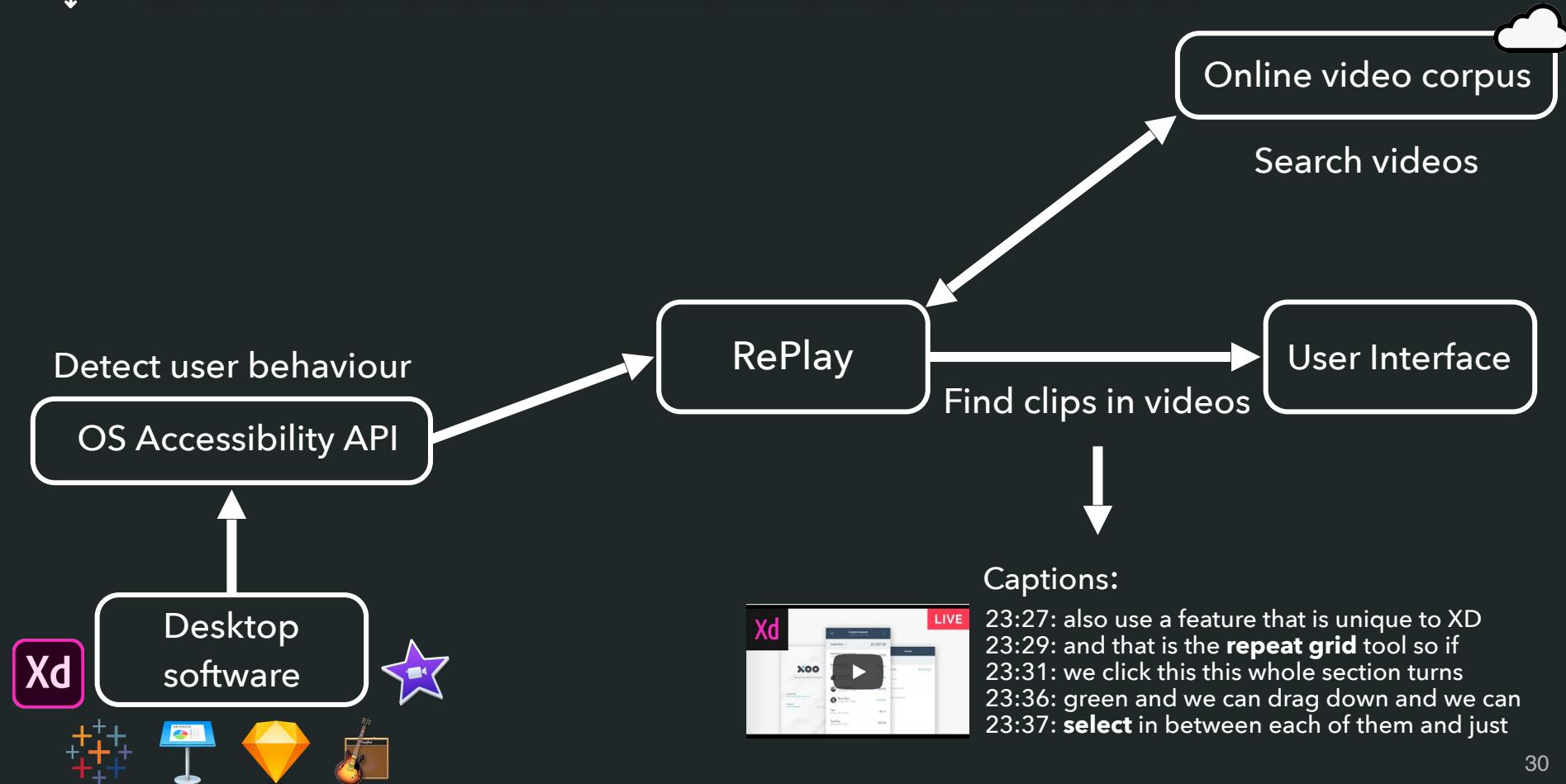
```
AXRaise - raise
```

Actions:

```
AXShowMenu - show menu
AXScrollToVisible - AXScrollToVisible
```



2. Find relevant moments in videos



Obtaining captions for YouTube videos



Heres some code I wrote which grabs all the caption tracks from any youtube video without having to use the API. Just plug the video URL in the `$video_url` variable.

5

```
// get video id from url
$video_url = 'https://www.youtube.com/watch?v=kYX87kkyubk';
preg_match("#(?:v=)[a-zA-Z0-9-]+(?:=&)|(?<=v\/)[^&\n]+(?:=\?)|(?<=v=)[^&\n]+|(?:youtu.be/)[^&]

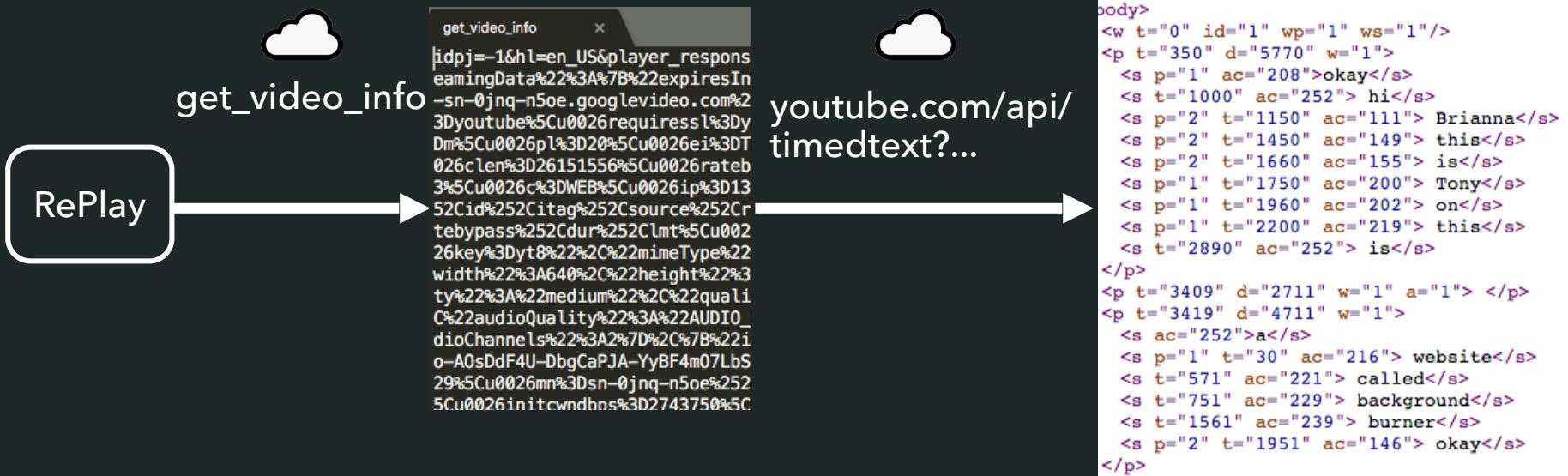
// get video info from id
$video_id = $matches[0];
$video_info = file_get_contents('http://www.youtube.com/get_video_info?&video_id='.$video_id);
parse_str($video_info, $video_info_array);

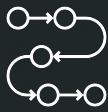
if (isset($video_info_array['caption_tracks'])) {
    $tracks = explode(',', $video_info_array['caption_tracks']);

    // print info for each track (including url to track content)
    foreach ($tracks as $track) {
        parse_str($track, $output);
        print_r($output);
    }
}
```



Obtaining captions for YouTube videos





3. Present moments to the user

RePlay File Edit Format View Window Help

template — Edited 56.3% 85% Thu Sep 20 1:28 PM

Design Prototype

ASSETS

All Assets Colors Character Styles Symbols

Light Status Bar

Welcome to TravelStories START

Artboard 1 Artboard 2

9:41 AM 9:41 AM

My TravelStory

APPEARANCE

W 0 X 0 H 0 Y 0

Repeat Grid

0%

...together so once you've created your icon just select it and in a symbols panel select the plus and you'll see ...

Layers & Symbols in Adobe XD

Illustrator, Adobe XD

Symbol search results: adobe xd Symbols from illustrator

Current app for search: XD

Symbols from illustrator GO

Color & Character Styles Adobe XD Tutorial

Adobe XD

... together so once you've created your icon just select it and in a symbols panel select the plus and you'll see ...

0:24 / 5:19 YouTube

The image shows a Mac desktop interface with the RePlay application open. The main window displays a mobile application design in Adobe XD. Artboard 1 shows a welcome screen with the text 'Welcome to TravelStories' and a 'START' button. Artboard 2 shows a grid of beach images titled 'My TravelStory'. A symbols panel on the right contains a 'Repeat Grid' symbol. A video player overlay is visible, showing a search result for 'adobe xd Symbols from illustrator' in the 'Symbols from illustrator' search bar, with a 'GO' button. The video player also displays the text '...together so once you've created your icon just select it and in a symbols panel select the plus and you'll see ...'. Below the video, another section of the Adobe XD interface is shown with the title 'Color & Character Styles Adobe XD Tutorial' and 'Adobe XD'. The desktop dock on the left includes icons for various applications like Safari, Mail, and Photoshop.

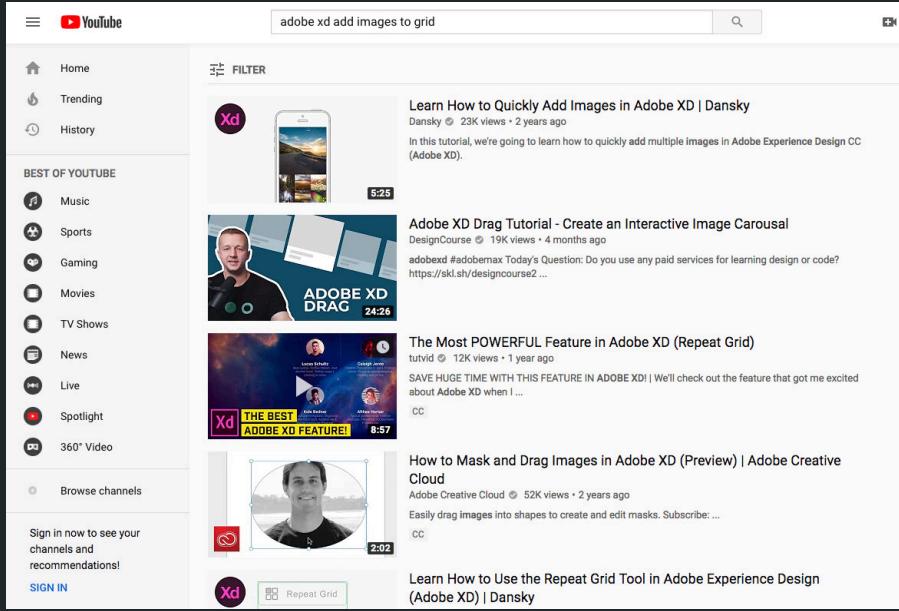
Does contextual assistance help people find what they need more quickly?

- Does RePlay make searching and browsing faster than online video search?
- Does RePlay change how people browse and navigate videos?

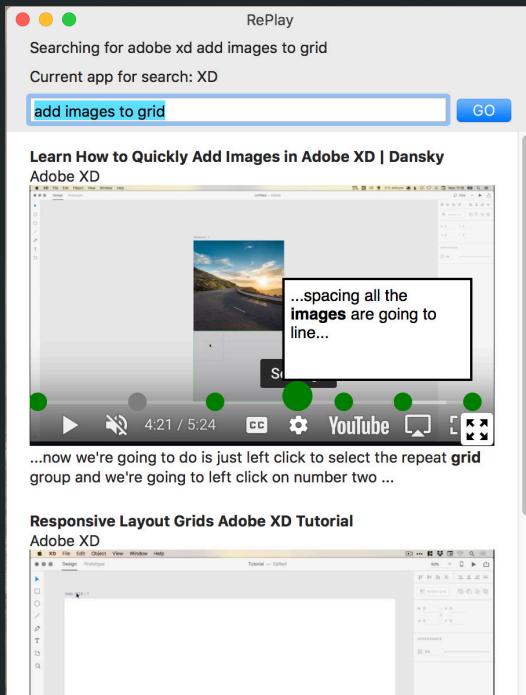
Does contextual assistance help people find what they need more quickly?

Between-subjects study

Web (n = 12)

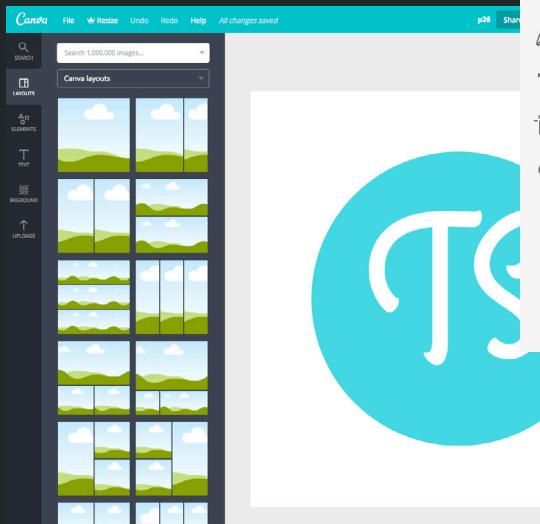


RePlay (n = 12)

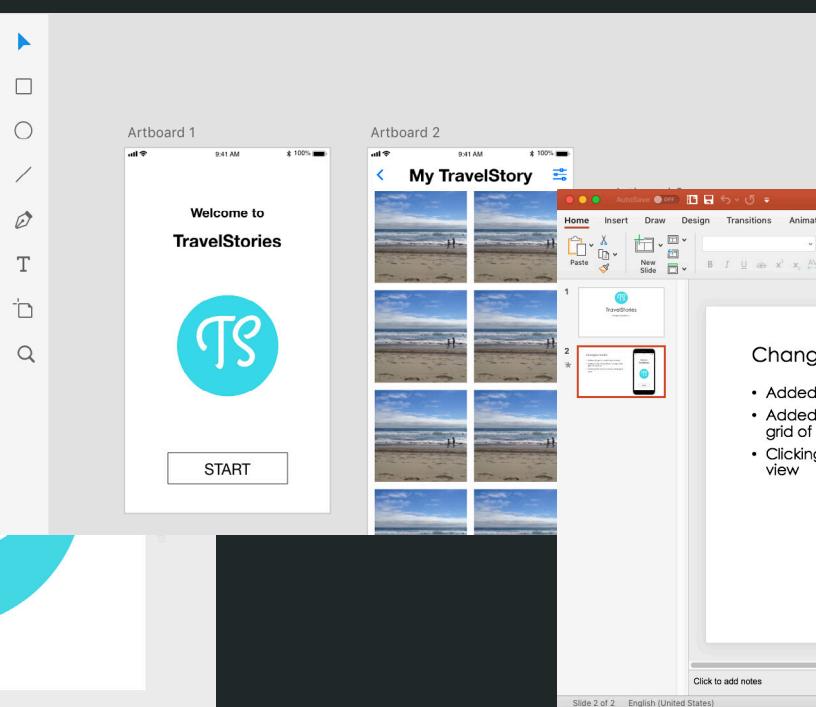


Task: make changes to a design

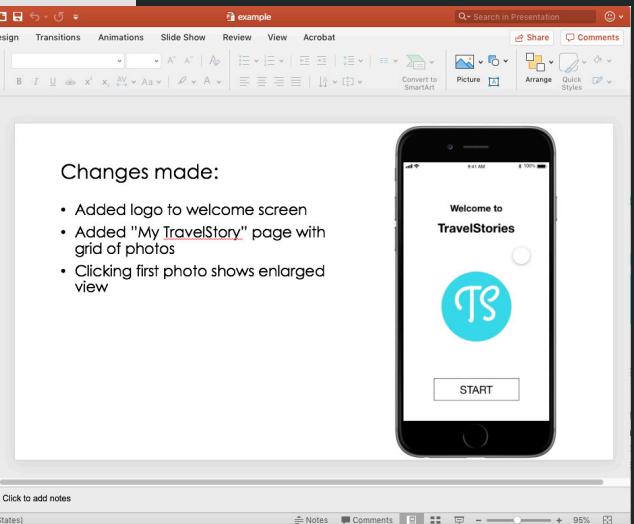
Canva



Adobe XD



Powerpoint

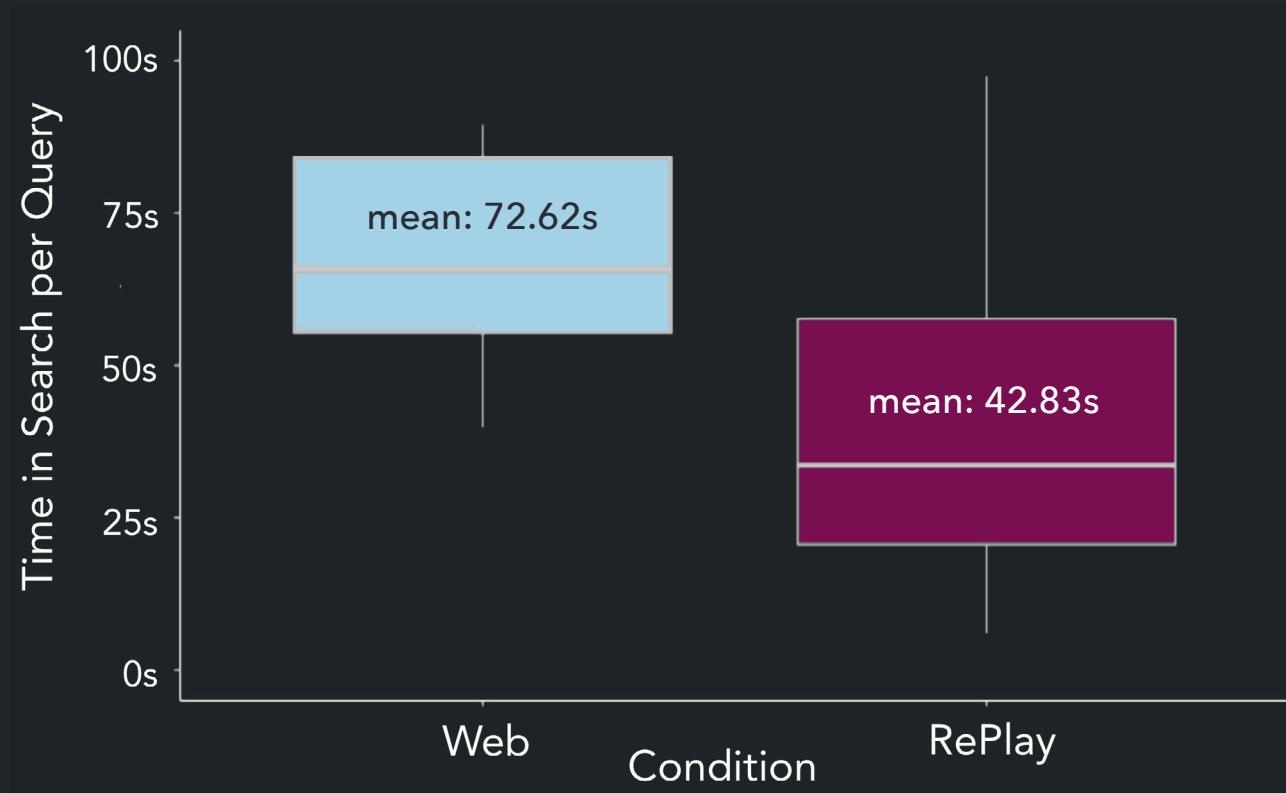


Changes made:

- Added logo to welcome screen
- Added "My TravelStory" page with grid of photos
- Clicking first photo shows enlarged view

Click to add notes

People with contextual assistance spent 40% less time searching



$t = 2.52, p = .02$

Does contextual assistance help people find what they need more quickly?

- Does RePlay make searching and browsing faster than online video search?

YES



- Does RePlay change how people browse and navigate videos?

YES

Timeline markers help to find specific moments

template — Edited

71.6% RePlay

W 375 x 0 H 667 Y 0

SCROLLING

Vertical

Viewport Height 667

APPEARANCE

Fill

GRID

Layout

Artboard 3

Make your travel dreams come true

RePlay

Searching for adobe xd record video

Current app for search: XD

record video

Walkthrough screens with prototype and recording in Adobe XD

...video and select the color that I have...

...that's what it's worth for so that's it for this video please do notify me in my comment section on YouTube as well as

Previewing your XD Prototypes on a Phone

Adobe XD

People could browse multiple videos simultaneously

RePlay

Searching for adobe xd Add image

Current app for search: XD

Add image

GO

Adobe XD Tutorial 21 Importing Images

Adobe XD

...repeat grid no matter where I drop this it will add the other images in the other boxes so it makes it really nice ...

Learn How to Quickly Add Images in Adobe XD | Dansky

Adobe XD

...at the bottom there so we have this one image space at the top we have a repeat grid down here with lots of image spaces ...

How might we improve contextual help search?

- People often preferred exploration over search

"I felt like I could find it if I searched for it [in the interface], which I did. I was able to figure it out." – P8

- People perceived search as more time-consuming

"I knew I didn't have time. I wanted to complete the task so I just hacked it." – P11

- People searched for actions more than tools

"how to crop image"

"how do i record a video"

"round corners"

ReMap: Multimodal Help-Seeking

Ailie Fraser, Julia Markel, James Basa, Mira
Dontcheva, Scott Klemmer
UIST 2019 Demo



"search how to crop
this into a circle"



RePlay

Searching for canva how to crop image into a circle

how to crop image into a circle

Include in search: Canva

HOW TO CROP PHOTOS INTO CIRCLES - Crop Picture Into Apps mentioned: Canva



...you wish to edit its settings click on the **image** and click on filter up top to add a filter to it or on **crop** to change ...

How to Resize and Crop Images for Web Using Canva
Apps mentioned: Canva



...again you just want to kind of watch your **image** your **image** sizes are the true you think this is cent Li

How to Easily Crop Your Photos into Circles

When people help each other, they use language, gestures, and context



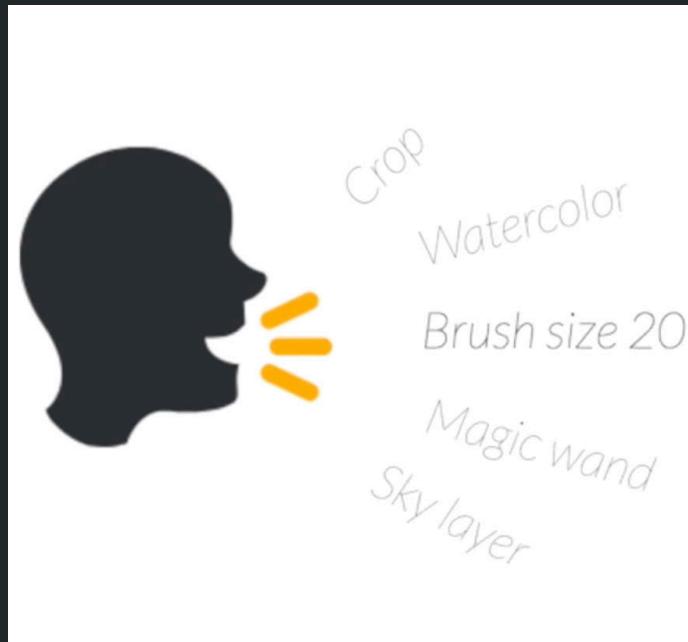
Language and gesture work well together



Language and gesture work well together



Multimodal input for creative work can help maintain flow state

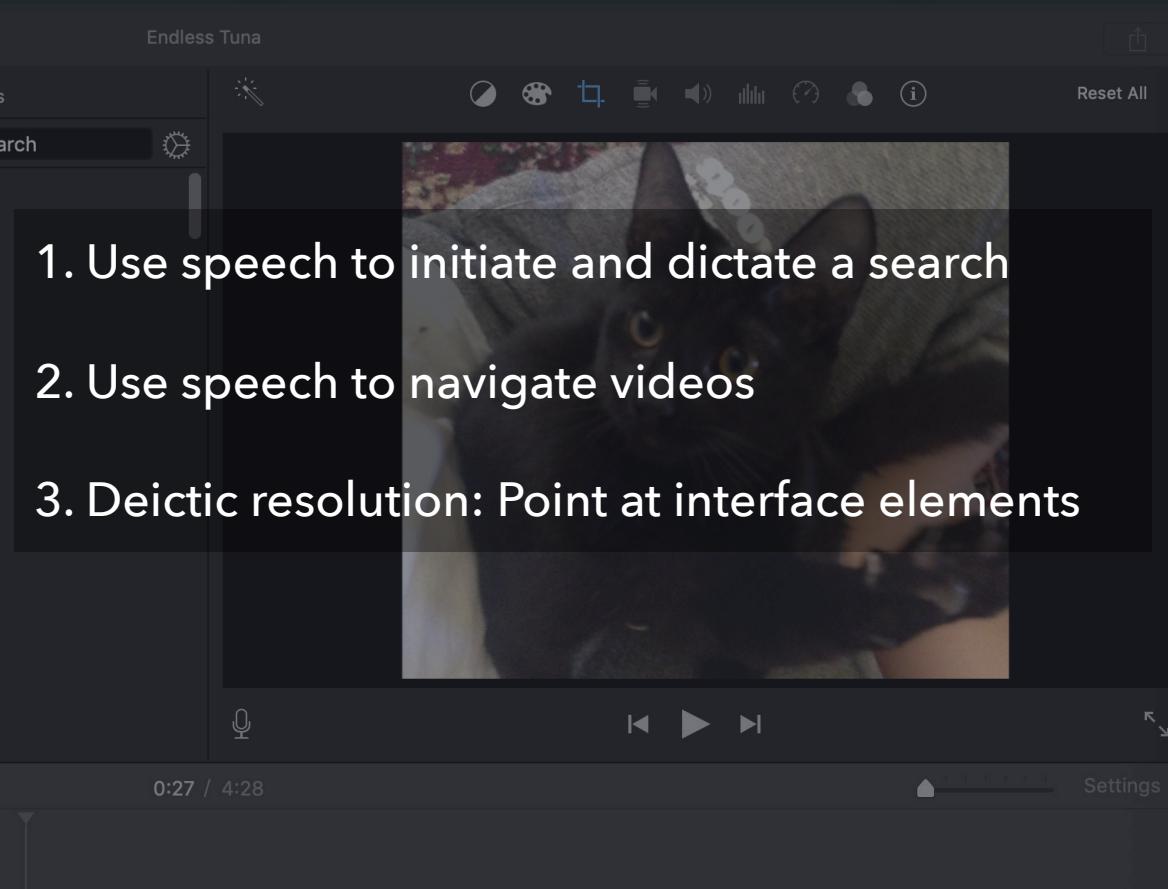


[Kim CHI '19, Sedivy C&C '99]

Research Questions

- How might we bring the benefits of multimodal interaction to help-seeking?
- Does multimodal interaction help people stay focused on their task?
- Does multimodal interaction lower the barrier to searching?

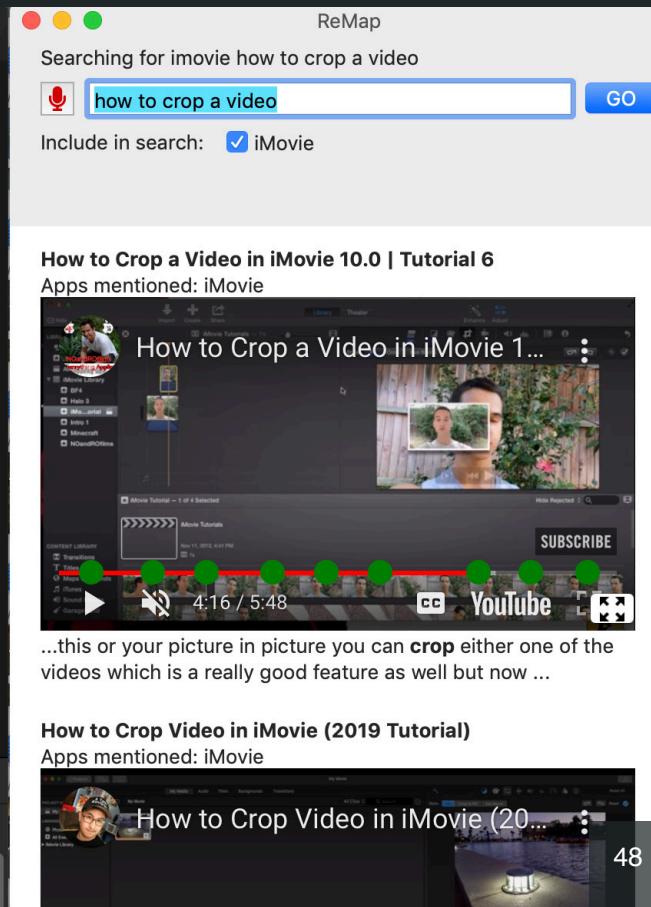
ReMap: Multimodal help-seeking



The screenshot shows a video player window titled "Endless Tuna". The video frame displays a close-up of a tuna's eye and mouth. Overlaid on the video are three numbered steps:

1. Use speech to initiate and dictate a search
2. Use speech to navigate videos
3. Deictic resolution: Point at interface elements

The player interface includes standard controls like play/pause, volume, and a progress bar showing 0:27 / 4:28. A "Settings" button is also visible.



The top screenshot shows a search interface with the query "how to crop a video" in the search bar. The results list the first result: "How to Crop a Video in iMovie 10.0 | Tutorial 6".

The bottom screenshot shows a YouTube video player for "How to Crop Video in iMovie (2019 Tutorial)". The video frame shows a person's face. A red line with green dots highlights specific interface elements: the play button, volume icon, progress bar, and subscribe button.

Text overlay: "...this or your picture in picture you can **crop** either one of the videos which is a really good feature as well but now ..."

Text overlay: "How to Crop Video in iMovie (2019 Tutorial)
Apps mentioned: iMovie

1. Use speech to initiate and dictate a search

How to Make a Logo | Canva Tutorial

Apps mentioned: Canva



...it'll take you to the home screen of canva now at the top it's going to show you some options for different designs ...

Canva Warning! | Top 3 Reason NOT To Use Canva

Apps mentioned: Canva



...being easily easily able to create different file formats so

2. Use speech to navigate videos

The image shows a comparison between two video navigation interfaces. On the left, the Canva design tool interface is displayed, featuring a toolbar at the top with various icons for text, shapes, and media, and a central workspace where a bar chart titled "What programming language should you learn next?" is being edited. On the right, the ReMap application interface is shown, which overlays a search bar and navigation controls onto a video frame. The video frame displays a tutorial titled "Canva Tutorial: How to Create Drop Shadow Images". Below the video frame, a transcript of the video content is visible, including the sentence "...is that you have that option to have that drop shadow behind I like to find a better cover because that one ...". At the bottom of the ReMap interface, there are playback controls and a YouTube logo.

Home - Canva

Infographic - What programming language should you learn next?

Speech Search

https://www.canva.com/design/DADcb5k8r4/MsrcS21OPFOi_oEK...

Up Upgrade Share Download

Aileron Heavy 48

Resizer

Copy Position

Spacing

Photos

Elements

Text

Bkground

Uploads

Folders

What programming language should you learn next?

Java C C++ Python Visual Basic.NET C# JavaScript SQL PHP Assembly

TIobe Index (%)

ReMap

Searching for canva how do i make a text shadow

how do i make a text shadow

Include in search: Canva

Canva Tutorial: How to Create Drop Shadow Images

Apps mentioned: Canva

Canva Tutorial: How t...

5:53 / 9:52

YouTube

...is that you have that option to have that drop shadow behind I like to find a better cover because that one ...

How To Drop Shadow Text in Canva (Easy AF)

Apps mentioned: Canva

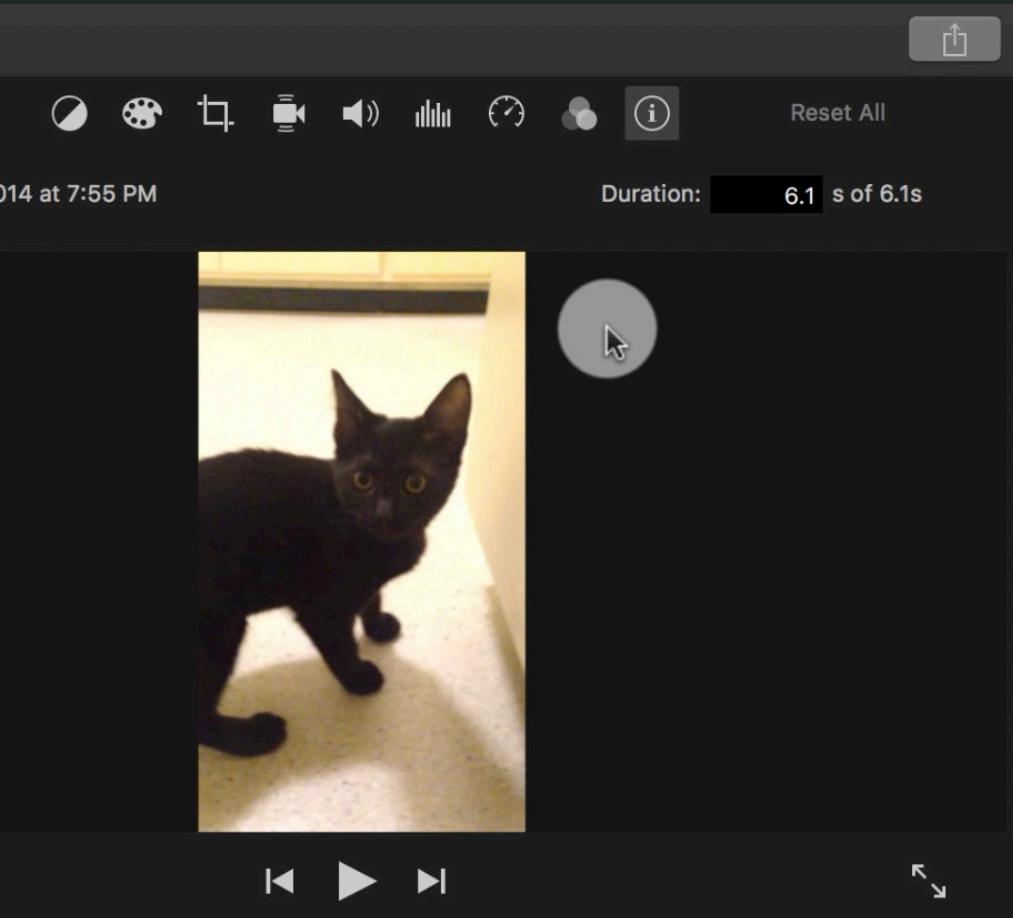
How To Drop Shadow Text ...

1:18 / 2:47

YouTube

...you want it to be to make your drop shadow you just come

? ? ? 3. Deictic resolution



ReMap

Searching for imovie

Search YouTube... GO

Include in search: iMovie

How to edit video on your iPhone or iPad with iMovie - Full Apps mentioned: iMovie

App Store Preview

This app is only available on the App Store for iOS devices.

iPad in Photos & Videos
4.5 stars (4,3K Ratings)
Free

Screenshots iPhone iPad

Browse and share your favorite video clips.

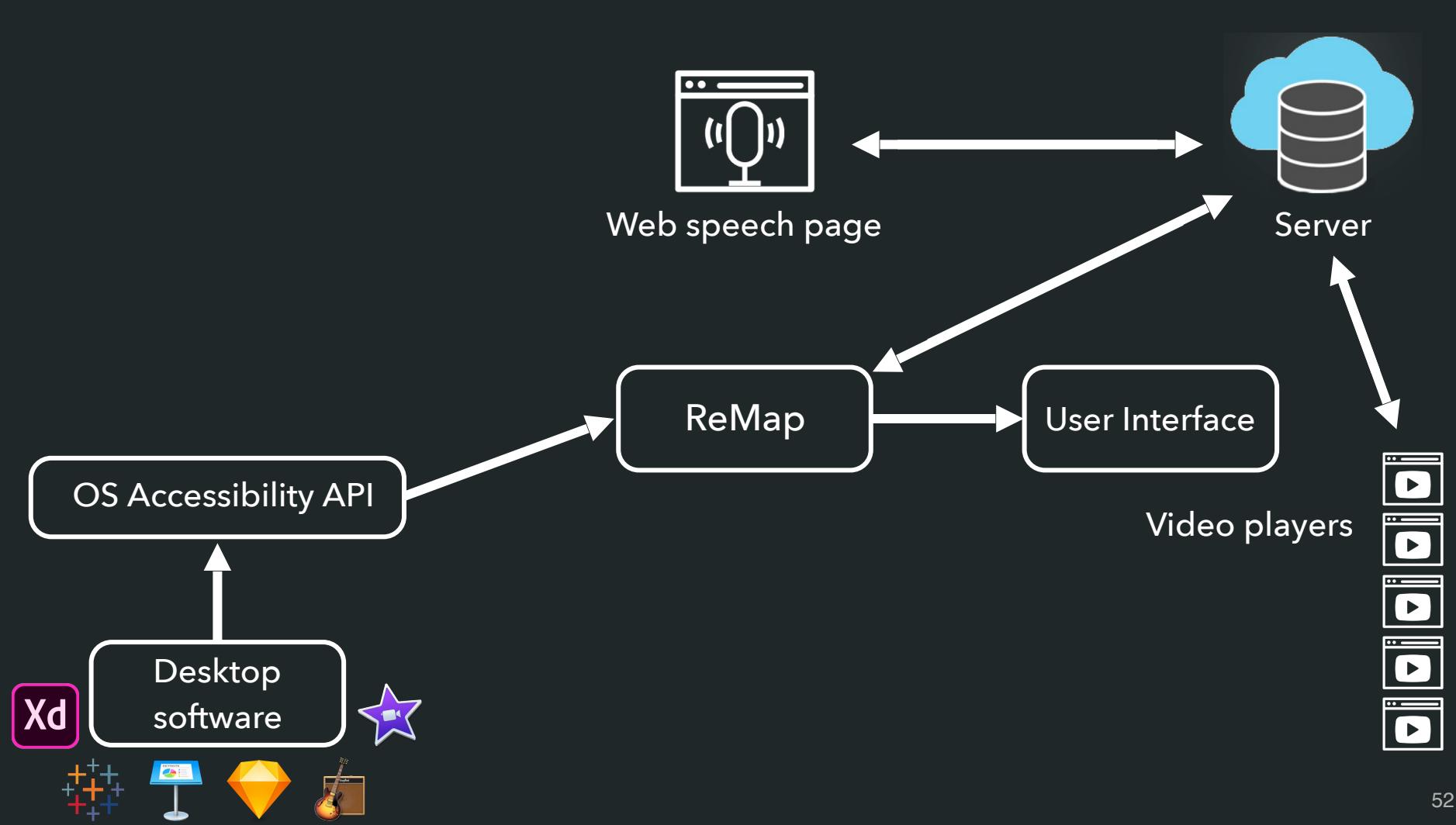
Create multi-camera movie trailers.

Description

1:02 / 19:13

YouTube

...head over to the iTunes Store and download iMovie and you're ready to unleash the editor within so without any ...



How do people use multimodal search for a real task?



Main findings

- Participants used multimodal interaction for multitasking
- Some preferred manual video navigation, others preferred speech
- Deictic resolution mostly used for canvas elements

Participants used multimodal interaction for multitasking

The image shows a participant multitasking between a design application and a search interface.

Left Side (Canva Design View):

- A screenshot of the Canva interface showing a project titled "Infographic - What programming language should you learn next?".
- The project features a yellow header with the title and a bar chart at the bottom.
- The bar chart data is as follows:

Programming Language	TIobe Index (%)
Java	15
C	14
C++	12
Python	10
Visual Basic .NET	8
C#	7
JavaScript	6
SQL	5
PHP	4
Assembly	2

Right Side (Search Engine Results):

- A screenshot of a search results page for "how do i make a text shadow" on ReMap.
- The top result is a Canva tutorial video titled "Canva Tutorial: How to Create Drop Shadow Images".
- The video player shows a thumbnail of a woman speaking, a progress bar at 5:53 / 9:52, and a YouTube logo.
- Text below the video reads: "...is that you have that option to have that drop shadow behind I like to find a better cover because that one ..."
- The second result is another Canva tutorial video titled "How To Drop Shadow Text in Canva (Easy AF)".
- The video player shows a thumbnail of a woman, a progress bar at 1:18 / 2:47, and a YouTube logo.
- Text below the video reads: "...you want it to be to make your drop shadow you just come ..."

Some preferred manual video navigation, others preferred speech

Preferred manual:

"I don't really know what [the timeline markers] are until i scroll over them" – P11

Preferred speech:

"If I hear the info I want and I'm kind of following along I can pause it, take the instructions, apply it, and then ... continue watching ... without having to stop the fluidity of work." – P8

Deictic resolution mostly used for canvas elements

- 22% of spoken queries included a deictic reference (24/111)
- 23/24 deictic references were canvas elements
 - Only 25% were successfully resolved (6/24) due to missing accessibility labels
 - 10/18 unsuccessful references asked for help with a chart
 - Accessibility common for widgets; more rare for the “insides”
- Computer vision could help address accessibility API limitations e.g. [Dixon CHI '10]
- Mobile accessibility is better

SOLUTION

Expert resources can help with...

*"I need help
accomplishing my goal"*

→ segment tutorials &
display in context



RePlay & ReMap



*"I don't know what my
end goal is"*

→ suggest example
demonstrations



*"I have a goal and want
it done"*

→ suggest applicable
operations



SOLUTION

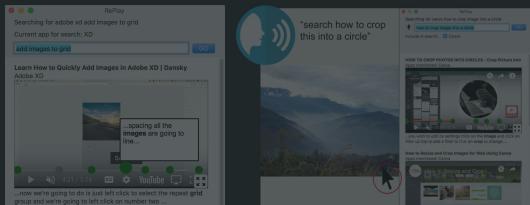
Expert resources can help with...

*"I need help
accomplishing my goal"*

→ segment tutorials &
display in context



RePlay & ReMap



*"I don't know what my
end goal is"*

→ suggest example
demonstrations



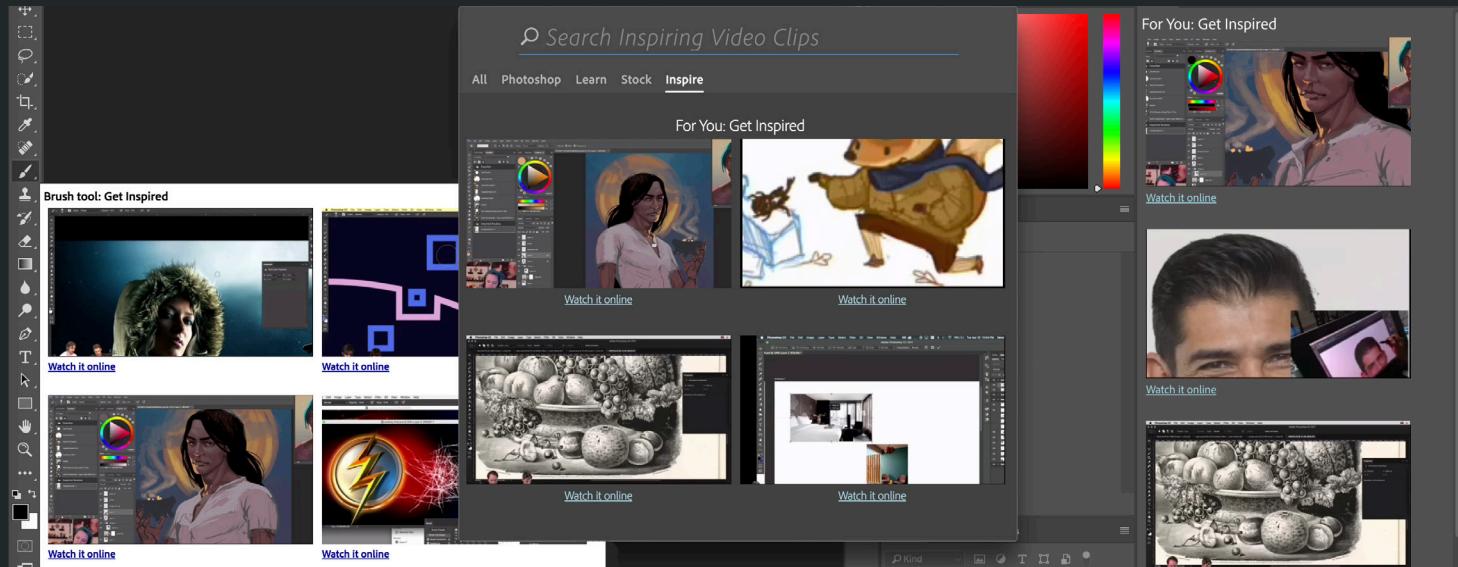
*"I have a goal and want
it done"*

→ suggest applicable
operations



LiveClips: Contextual Video Demonstrations to Help People Learn Creative Techniques

Ailie Fraser, Mira Dontcheva, Scott Klemmer, Andy Edmonds, Joy Kim, Alison Thornsberry
C&C 2019 / Unpublished



Livestreaming: Real-time broadcasting

A screenshot of a Fortnite live stream on Twitch. The streamer, Ninja, is shown in a small video window on the left, wearing a pink hat and playing in a grassy area near water. The game interface shows a character in a diving suit. The chat on the right is active with messages from viewers like "Hil How are ya :D Short stream" and "Uber Eats". The stream has 28,115 viewers and 469,913,730 total views.

twitch.tv/ninja

A screenshot of a Facebook live stream of the musical Hamilton. The streamer, Allie, is shown in a video window. The post has 5.2K likes, 773 shares, and 85K views. The chat on the right includes messages from viewers like "Hamilton was live. about 3 years ago · Live Q&A with Leslie Odom Jr." and "Aleisha Kropf Hey from middle America! Please know we are soooo many of us in small towns just loving the music and wishing we could get to the show!"

facebook.com/HamiltonMusical/videos/1315061111854096

A screenshot of a lofi hip hop radio live stream on YouTube. The streamer, ChilledCow, is shown in a video window. The video is titled "Ouska - The woman who was heartbroken". The stream has 10,122 viewers, 1.4M likes, and 39K comments. The chat on the right is active with messages like "lofi hip hop radio - beats to relax/study to" and "Started streaming on Aug 22, 2018".

youtu.be/hHW1oY26kxQ

A screenshot of a watermelon explosion live stream on PSCP. A person's hands are shown tying rubber bands around a large green watermelon. The stream has 50.8K viewers. The post on the right includes a message from "Wztv Fox 17" and a caption: "WATERMELON EXPLOSION! How many rubber bands will it take to explode this watermelon? Have some fun with us celebrating the first day of Summer!"

pscp.tv/w/1IPKqowBzAbJb



Following

Browse

...

Search



32



Get Bits



Neko

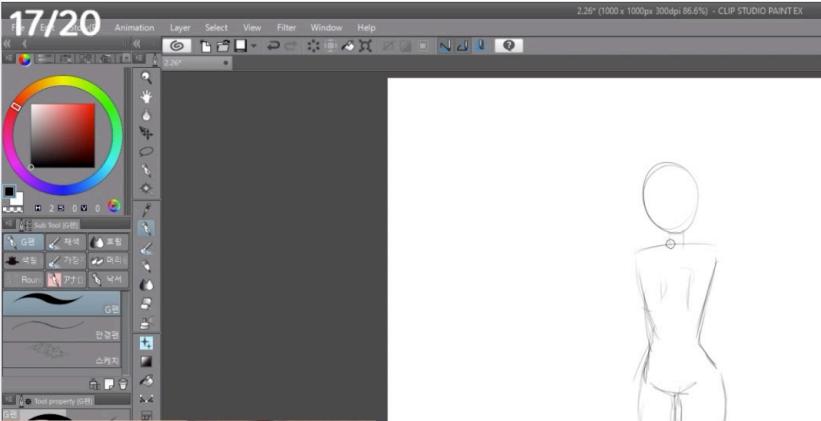


LIVE

Home Videos Clips Followers

Follow

Subscribe

**very extremely creative title that grabbed your attention**

110 846,415



Category: Art • Team: Nekotopia

twitch.tv/neko

61



STREAM CHAT



1

Tomaee



5



5

msfWEBdude: remember game cheat codes?

bobuffet: up up down down left right left right
BA

JaneGland: is chibi something like dwarf?

msfWEBdude: @bobuffet

DrunknfrOg: I think it was the arm size. (I can only draw blueprints so I only notice proportion lol)

modifythehumans: that looks good now

bobuffet: thank christ YouTube reinstated Chilled Cow

bobuffet: the LoFi hip hop guy.

polluxandbellatrix:

msfWEBdude: oh the music

Send a message



0



Chat



Following Browse ...

Search



Neko



LIVE

Home Videos Clips Followers

Follow

Subscribe



Camera view of work



very extremely creative title that grabbed your attention

110 846,415



Category: Art • Team: Nekotopia

twitch.tv/neko

62



STREAM CHAT



Tomaee



jarjar2_ 5



JayBeenL... 5

msfWEBdude: remember game cheat codes?

bobuffet: up up down down left right left right
BA

JaneGland: is chibi something like dwarf?

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bobuffet: the LoFi hip hop guy.

polluxandbellatrix:

msfWEBdude: oh the music

Send a message



0



Chat



Following Browse ...

Search



Get Bits

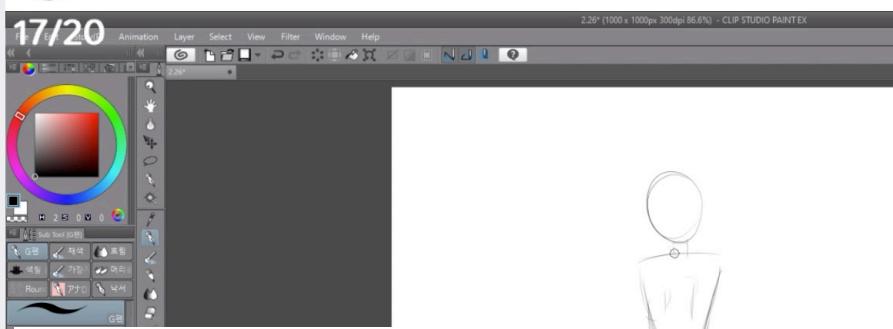


→ Neko  LIVE

Home Videos Clips Followers

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Camera on artist's face



very extremely creative title that grabbed your attention

110 846,415



Category: Art • Team: Nekotopia

twitch.tv/neko

62

→ STREAM CHAT

1 Tomaee

jarjar2_ 5
JayBeenL... 5

msfWEBdude: remember game cheat codes?

bobuffet: up up down down left right left right B A

JaneGland: is chibi something like dwarf?

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bobuffet: thank christ YouTube reinstated Chilled Cow

bobuffet: the LoFi hip hop guy.

polluxandbellatrix: 

msfWEBdude: oh the music

Send a message



0



Chat

Following Browse ... Search 32 Get Bits

Neko

Home Videos Clips Followers

2.26" (1000 x 1000px 300dpi 86.6%) - CLIP STUDIO PAINT EX

17/20 Animation Layer Select View Filter Window Help

Color palette, brush tools, layer panel, effect panel, expression color panel.

very extremely creative title that grabbed your attention

Category: Art • Team: Nekotopia

Followers: 110 Views: 846,415

twitch.tv/neko

Live text chat

Tomaee 1 gift, jarjar2_ 5 gifts, JayBeenL... 5 gifts

msfWEBdude: remember game cheat codes?

bobuffet: up up down down left right left right BA

JaneGland: is chibi something like dwarf?

msfWEBdude: @bobuffet

Drunknfr0g: I think it was the arm size. (I can only draw blueprints so I only notice proportion lol)

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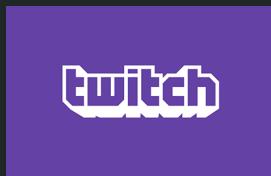
polluxandbellatrix:

msfWEBdude: oh the music

0 Chat

Creative live streams are an untapped source of expert knowledge

Large volume

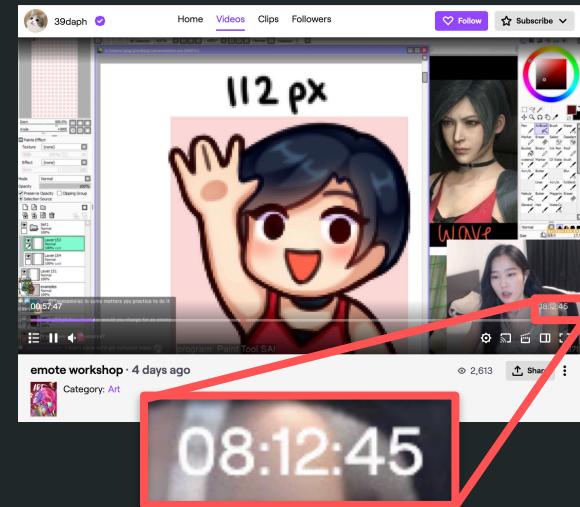


Show creative knowledge

Deltiee: Do you use 100% density for line art?

kergony: do you actually need a shading on the emote? @39daph

Too long to browse



Research Questions

- What are creative live streams?
- Why do people live stream and why do others watch?
- What challenges do live stream viewers face?
- How might we better leverage the expert knowledge in these videos?

Formative Work

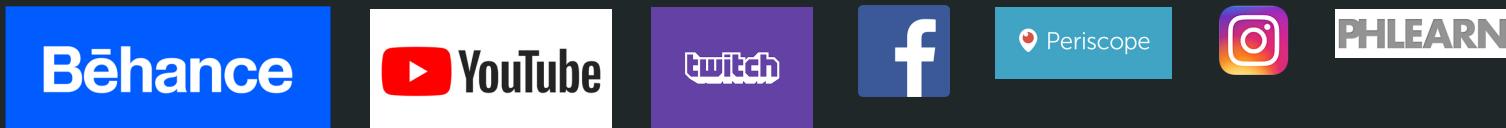
Content analysis of a sample of creative livestreams on Twitch



Semi-structured interviews with 8 streamers



3 online surveys with 165 viewers over 1.5 years



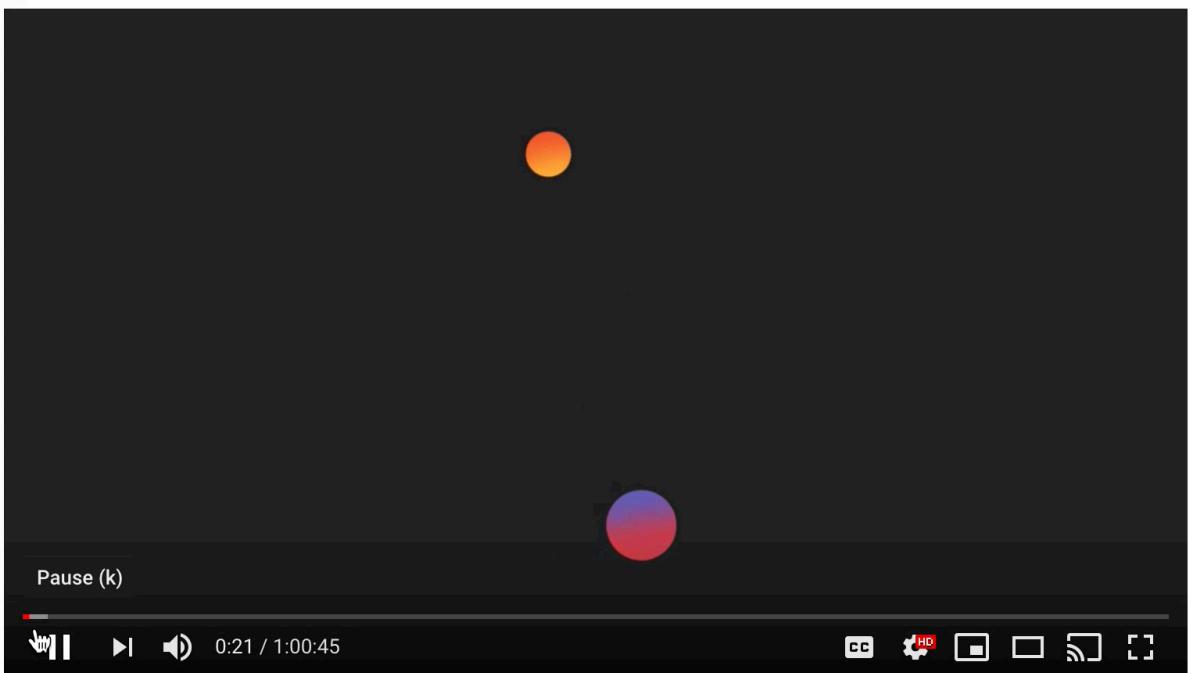
Main findings

- 4 main types of creative livestreams: Teaching, Making, Socializing, Performing
- Community & engagement are important to streamers and viewers
- Streamers face a tension between working and engaging with viewers



Main findings

- 4 main types of creative livestreams: Teaching, Making, Socializing, Performing
- Community & engagement are important to streamers and viewers
- Streamers face a tension between working and engaging with viewers
- People want to view archived livestreams, but they are hard to navigate



Top chat replay ▾



Live chat replay is on. Messages that appeared when the stream was live will show up here.



0:13 Nina hi

Getting Started in Adobe XD with Paul Trani

6,317 views

150

6

SHARE

SAVE

...

youtu.be/XzghQlHE5wY

Mode: Normal Opacity: 100% Flow: 100%

Brush tool: Get Inspired



b

Search Inspiring Video Clips

All Photoshop Learn Stock Inspire

For You: Get Inspired

[Watch it online](#) [Watch it online](#)
[Watch it online](#) [Watch it online](#)
[Watch it online](#) [Watch it online](#)

c

Inspire

For You: Get Inspired

[Watch it online](#)



Kind: Normal Opacity: 100%

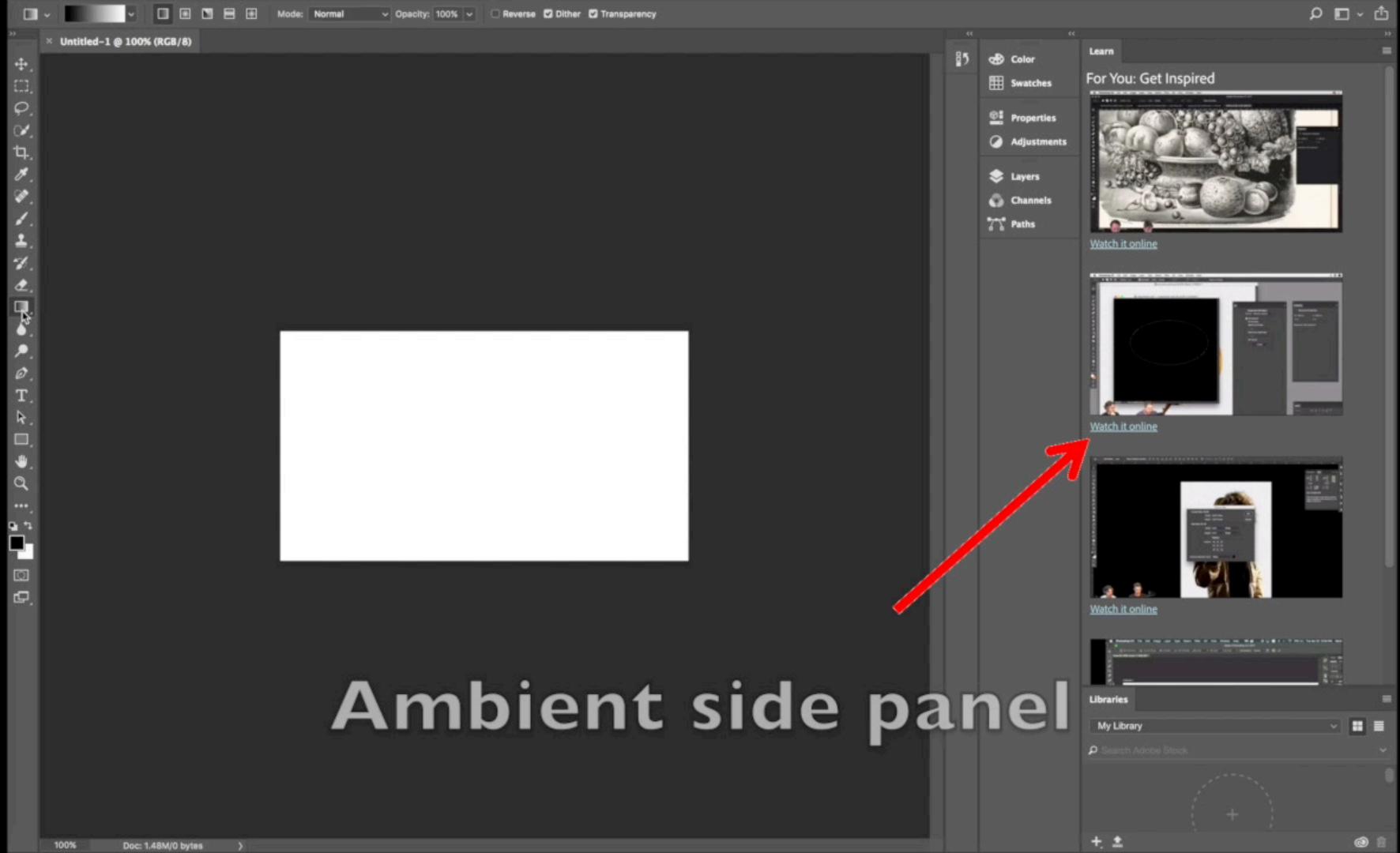
Lock: Fill:

Libraries: My Library

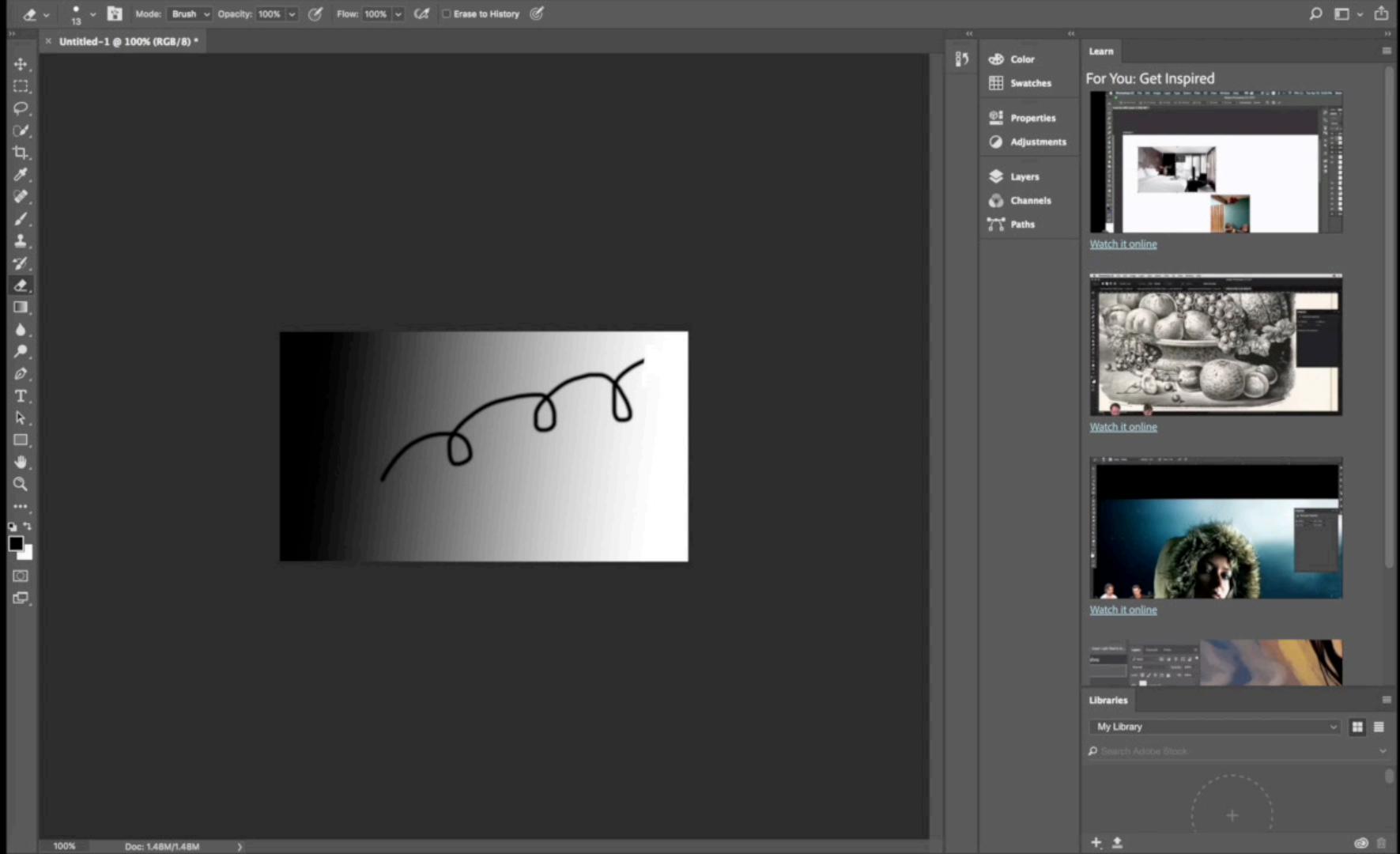
Search Adobe Stock

68

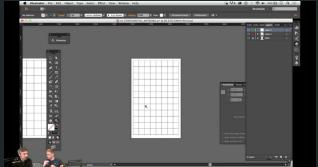




Ambient side panel



Video



Python

MATLAB

MATLAB
Javascript

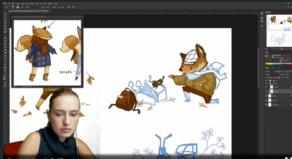
1. Extract
short clips

2. Crop clips

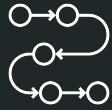
3. Rank clips

Tool Changed	Line_Tool	2017-05-24T16:16:18Z
Tool Changed	Select_Tool	2017-05-24T16:16:19Z
Tool Changed	Ellipse_Shape_Tool	2017-05-24T16:16:22Z
Tool Changed	Rectangle_Shape_Tool	2017-05-24T16:16:23Z
Shape_Created	Shape_Created	2017-05-24T16:16:28Z
Tool Changed	Select_Tool	2017-05-24T16:16:30Z
Tool Changed	Line_Tool	2017-05-24T16:16:35Z
Tool Changed	Select_Tool	2017-05-24T16:16:39Z
Command	Group	2017-05-24T16:16:52Z
Command	Group	2017-05-24T16:16:53Z
Command	Group	2017-05-24T16:16:54Z
Tool Changed	Add_Anchor_Point_Tool	2017-05-24T16:17:04Z
Tool Changed	Direct_Select_Tool	2017-05-24T16:17:13Z

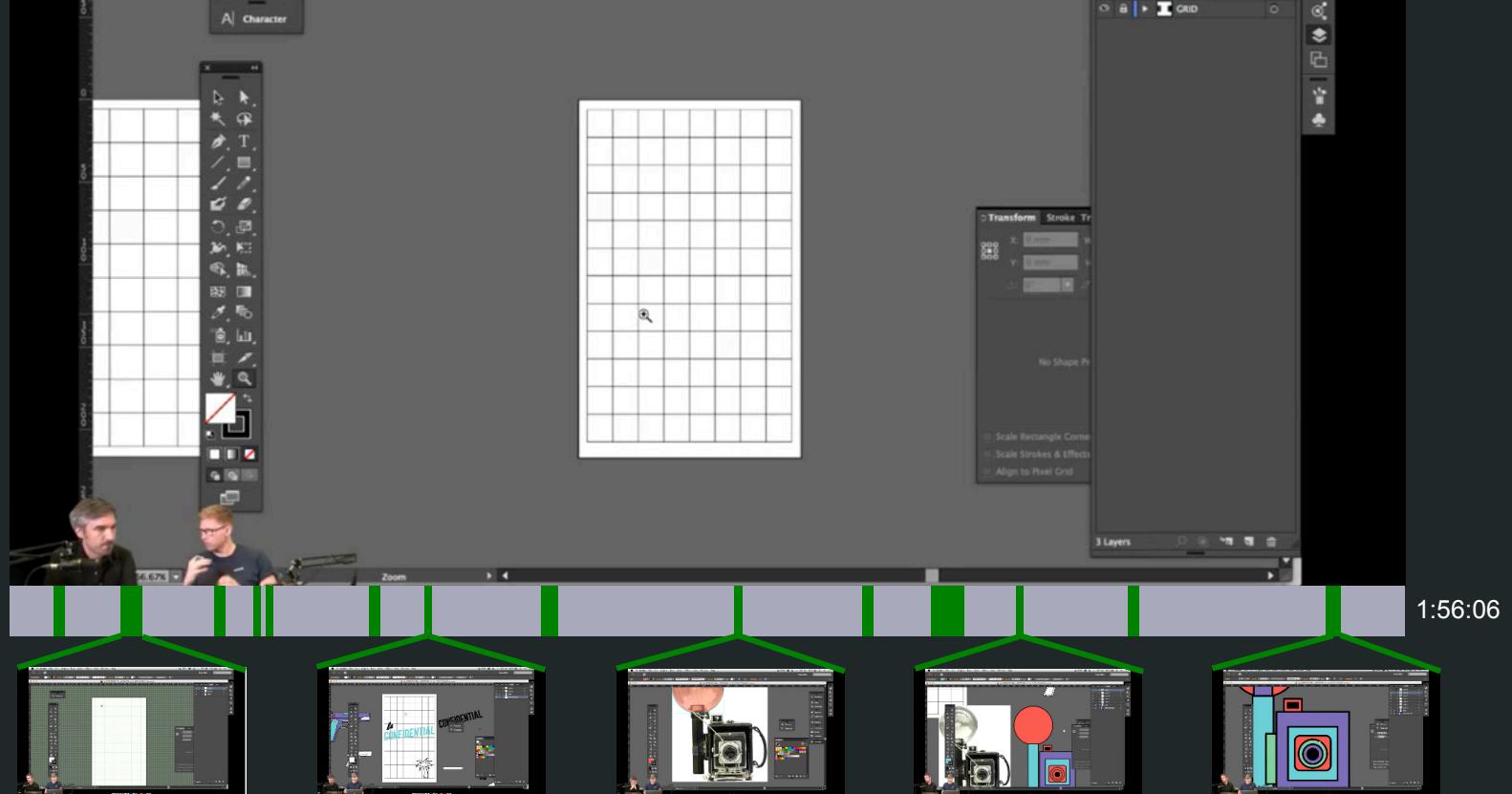
Tool event log



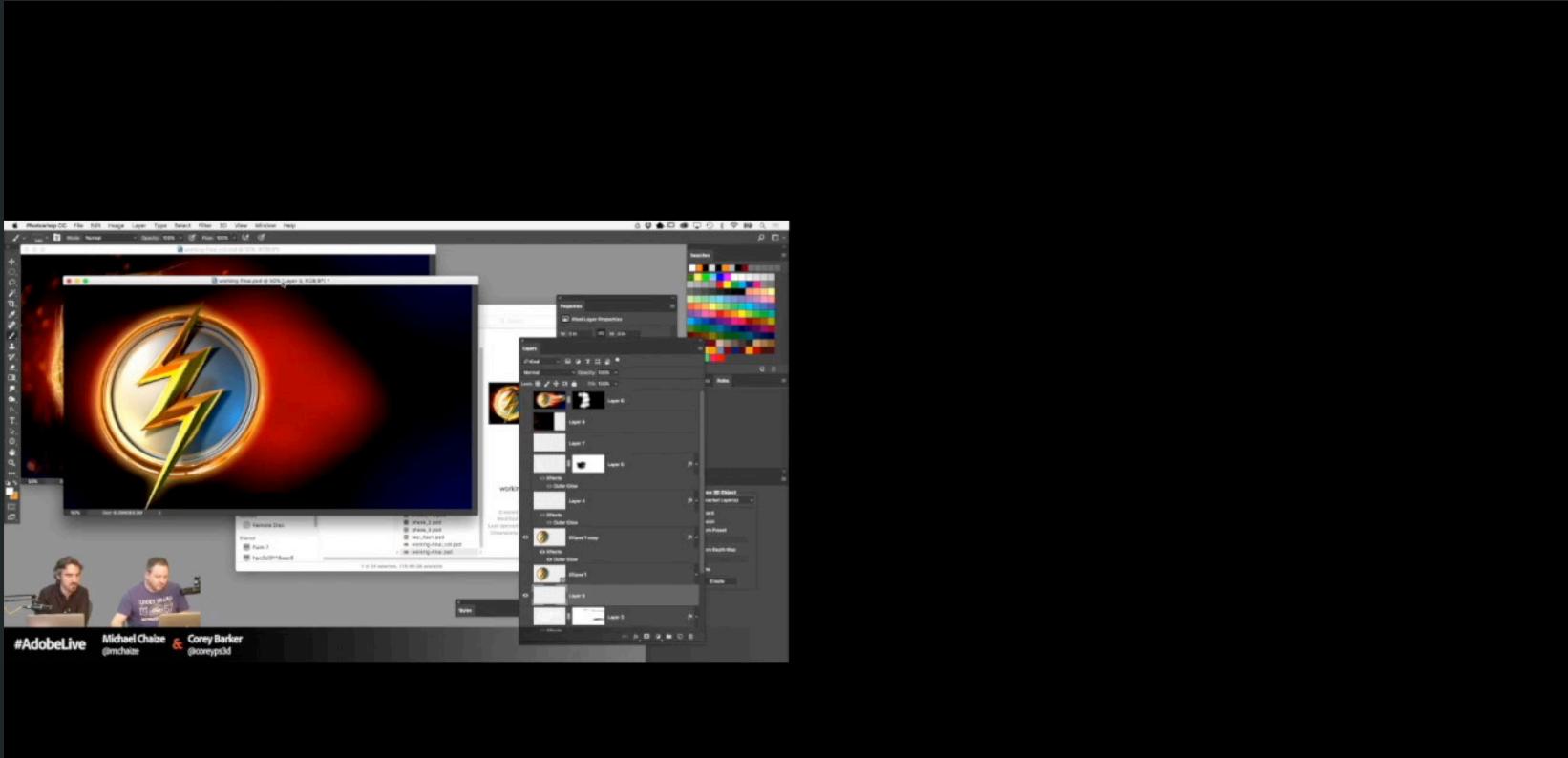
7 / 48



1. Extract short clips



2. Crop clips to thumbnail size





3. Rank clips for presentation

- Time in original video
- Amount of visual change
- User context

Initial user feedback

- Useful to see how other artists use tools
- One preferred tooltips, other preferred ambient side panel
- Clips provided an entry point to the full videos

How might we improve contextual inspiration?

- Are tools the right granularity for segmenting?
- Extract moments based on what the streamer is saying
- Summarize live streams in a short clip

SOLUTION

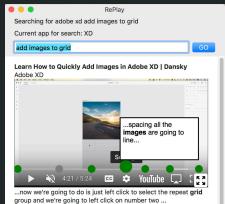
Expert resources can help with...

*"I need help
accomplishing my goal"*

→ segment tutorials &
display in context



RePlay & ReMap



*"I don't know what my
end goal is"*

→ suggest example
demonstrations



LiveClips



*"I have a goal and want
it done"*

→ suggest applicable
operations



SOLUTION

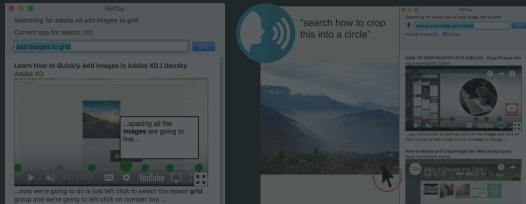
Expert resources can help with...

*"I need help
accomplishing my goal"*

→ segment tutorials &
display in context



RePlay & ReMap



RePlay

Searching for adobe xd add Images to grid

Current app for search: XD

Add Images to grid

Learn How to Quickly Add Images in adobe XD | Danksy

Add Images to grid

...spacing all the images are going to fine.

...now we're going to do is just left click to select the newest grid group and we're going to left click on number two ...

search how to crop this into a circle

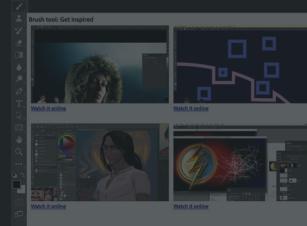
Watch & Learn

*"I don't know what my
end goal is"*

→ suggest example
demonstrations



LiveClips



Brush Tool: Get Inspired

How to Create Photo Collage with Mesh Tool in Photoshop

Watch & Learn

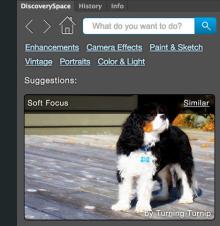
Watch & Learn

*"I have a goal and want
it done"*

→ suggest applicable
operations



DiscoverySpace



DiscoverySpace History Info

What do you want to do?

Enhancements Camera Effects Paint & Sketch

Vintage Portraits Color & Light

Suggestions:

Soft Focus

Similar

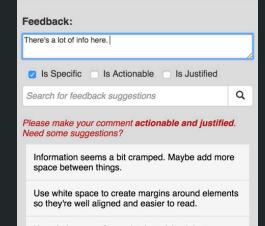
by turning Turnip

Please make your comment actionable and justified. Need some suggestions?

Information seems a bit cramped. Maybe add more space between things.

Use white space to create margins around elements so they're well aligned and easier to read.

CritiqueKit



Feedback:

There's a lot of info here.

Is Specific Is Actionable Is Justified

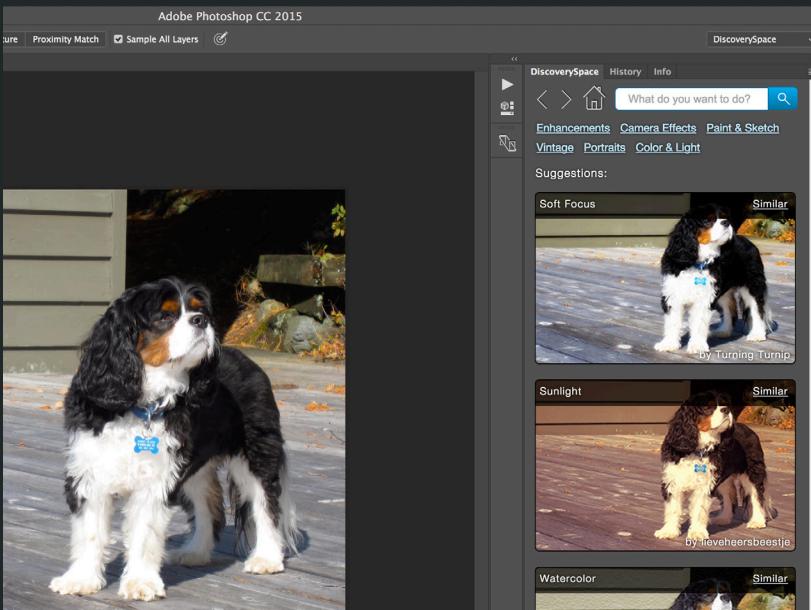
Search for feedback suggestions

Please make your comment actionable and justified. Need some suggestions?

Information seems a bit cramped. Maybe add more space between things.

Use white space to create margins around elements so they're well aligned and easier to read.

Reusable actions and examples help novices build confidence & produce better work



DiscoverySpace

Ailie Fraser, Mira Dontcheva, Holger Winnemöller, Sheryl Ehrlich, Scott Klemmer

DIS 2016

A screenshot of the CritiqueKit application. At the top, there are buttons for 'Next Design', 'I'm done!', and 'Help'. On the left, there's a thumbnail of a prototype showing a 'TRIPSTER BETA' dashboard with various cards and icons. On the right, there's a 'Feedback:' section with a text input field containing the placeholder 'There's a lot of info here.' Below it are three checkboxes: 'Is Specific' (checked), 'Is Actionable', and 'Is Justified'. There's also a 'Search for feedback suggestions' input field with a magnifying glass icon. Further down, a red message says 'Please make your comment actionable and justified. Need some suggestions?'. The main feedback area contains several comments: 'Information seems a bit cramped. Maybe add more space between things.', 'Use white space to create margins around elements so they're well aligned and easier to read.', 'How do I recover from mistakes. A back button might help.', and 'User should know what each of the aspects of the prototype means. Use clear language and visuals to show this.' At the bottom, there are buttons for '+ View my comments', 'Cancel', and 'Submit'.

CritiqueKit

Tricia Ngoon, Ailie Fraser, Ariel Weingarten, Mira Dontcheva, Scott Klemmer

CHI 2018 - Honourable Mention 

Thesis Statement

- *Curating expert help and demonstrations*
 - *and presenting them in context*
- enables people to produce better work.*

Future Directions

- Integrating resources more closely into the creative process
- Improving navigation and browsing of video resources

Integrating resources more closely into the creative process

- Engage the user in a conversational dialogue



"I want to edit this"



"What aspect of the graph do you want to edit? (data, axis labels, colour, size, type of graph)"



"The axis labels"



"Here is a video about editing the axis labels on a graph"

Integrating resources more closely into the creative process

- Engage the user in a conversational dialogue
- Link results more closely to the software

The image shows two side-by-side screenshots. On the left is the Canva interface, featuring a toolbar with 'Filter' (highlighted with a red box), 'Adjust', 'Crop' (highlighted with a red box), 'Flip', three dots, 'Copy', and a trash bin icon. Below the toolbar is a preview area with a photo of a person sitting at a desk. On the right is a YouTube video thumbnail titled 'HOW TO CROP PHOTOS INTO CIRCLES - Crop Picture Into Apps mentioned: Canva'. The thumbnail shows a circular crop effect applied to a photo of hands on a laptop. The video player includes standard controls like play, volume, and progress bar.

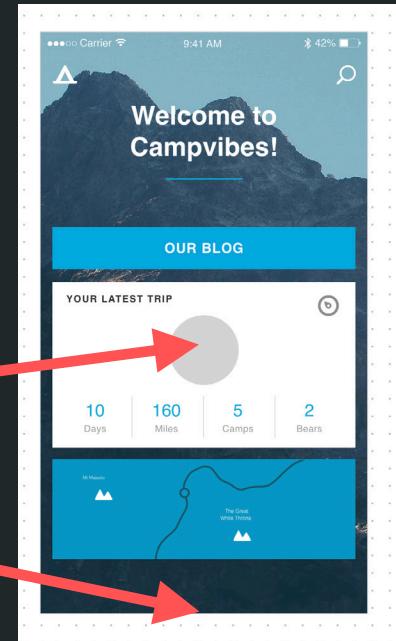
HOW TO CROP PHOTOS INTO CIRCLES - Crop Picture Into Apps mentioned: Canva

...you wish to edit its settings click on the **image** and click on filter up top to add a filter to it or on **crop** to change ...

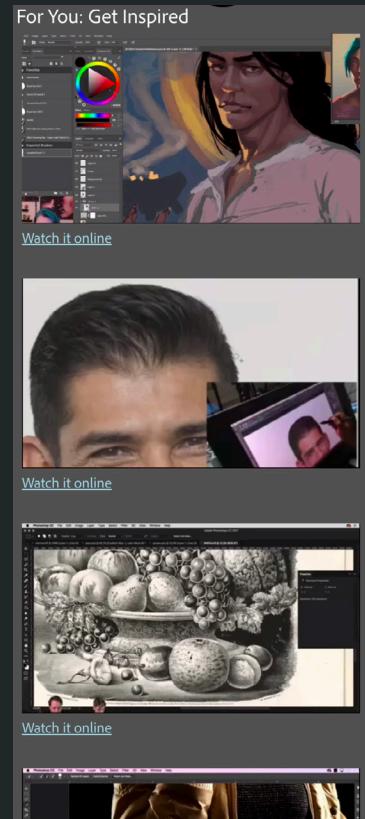
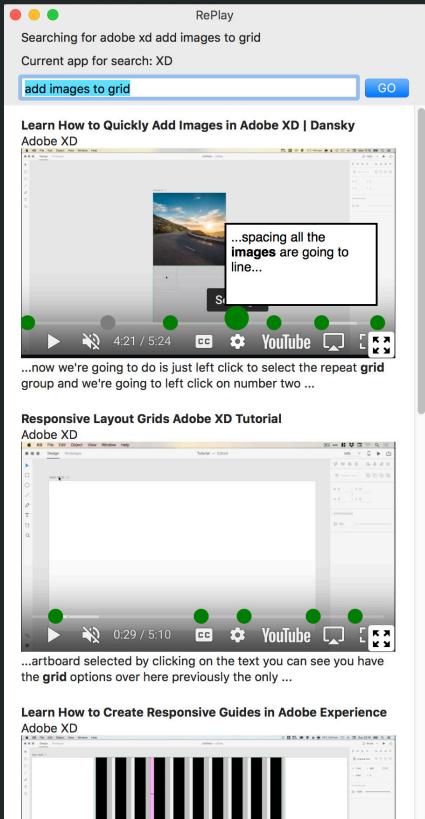
Integrating resources more closely into the creative process

- Engage the user in a conversational dialogue
- Link results more closely to the software
- Allow users to issue commands directly

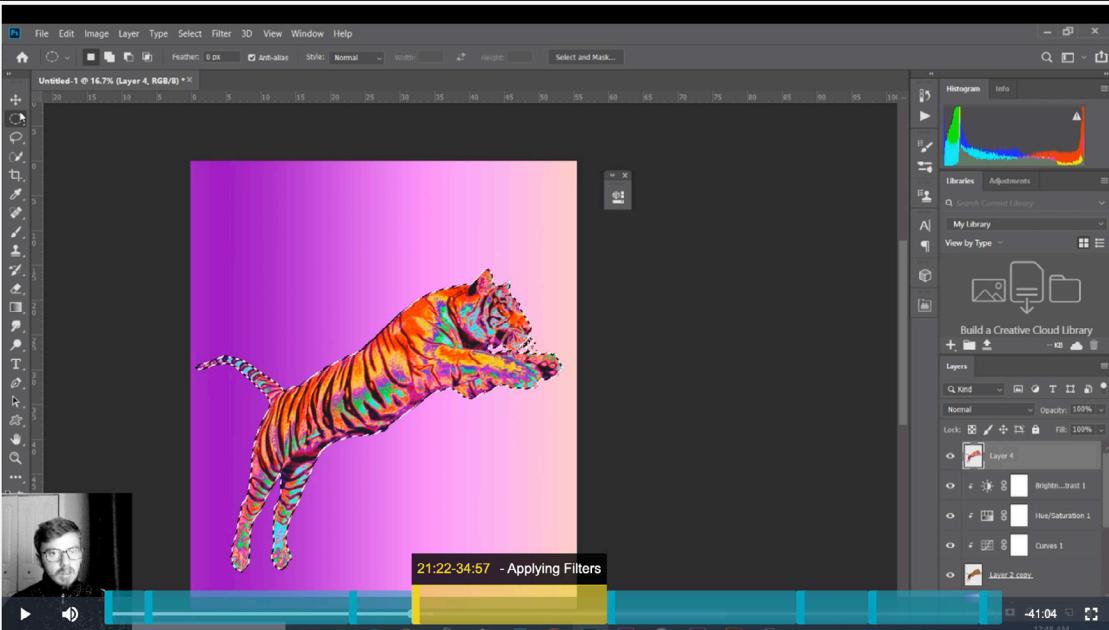
*"Make **this**
ease in from
here"*



Improving navigation and browsing of video resources



Improving navigation and browsing of video resources



A screenshot of a video player interface. On the left, a vertical timeline shows five segments with timestamps: 0:00:01 - 0:02:45, 0:02:45 - 0:17:00, 0:17:00 - 0:21:22, 0:21:22 - 0:34:57. To the right of each segment is a thumbnail image from the video. To the far right, a sidebar lists four sections with their respective durations: "Section 1: Introduction and Sources of Inspiration (3min)", "Section 2: Removing the background (14min)", "Section 3: Applying Adjustments to the images (4min)", and "Section 4: Applying Filters (14min)".

Tools

- >Show
- Select layer (Layer 4)
- Show
- Select elliptical
marquee
- channel

Transcript

I just Maybe listen basic stuff for you, but I thought I don't know.

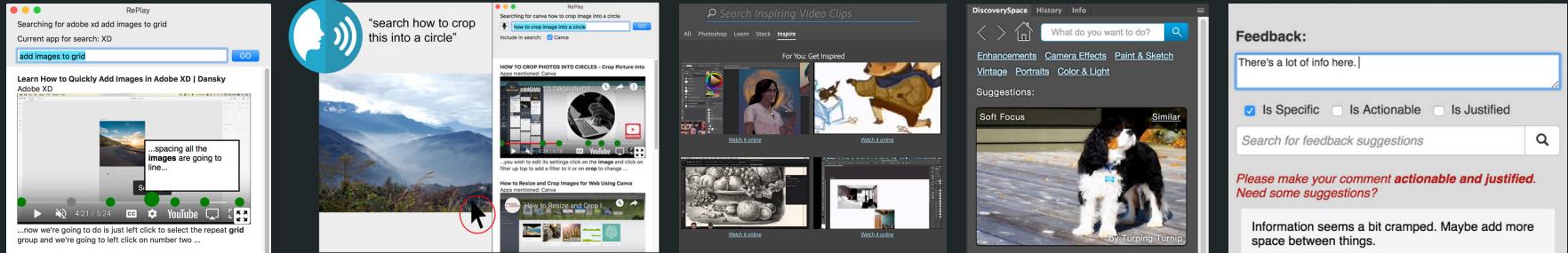
Chat

Ailie Fraser, Joy Kim, Valentina Shin, Joel Brandt, Mira Dontcheva

To appear at CHI 2020

Contributions

- Algorithms that curate and rank four different types of expert resource (tutorial videos, live stream videos, action macros, and written feedback)
- Interfaces that present curated expert help and demonstrations in-situ
- Evaluations that demonstrate the efficacy of contextually presenting expert resources



Dissertation Outcomes

Full Papers

- 2020 ACM CHI** *Temporal Segmentation of Creative Live Streams.*
C. Ailie Fraser, Joy Kim, Valentina Shin, Joel Brandt, Mira Dontcheva
- 2019 ACM C&C** *Sharing the Studio: How Creative Livestreaming can Inspire, Educate, and Engage.*
C. Ailie Fraser, Joy O. Kim, Alison Thornsberry, Scott Klemmer, Mira Dontcheva
- 2019 ACM CHI** *RePlay: Contextually Presenting Learning Videos Across Software Applications.* **Honourable Mention**
C. Ailie Fraser, Tricia J. Ngoon, Mira Dontcheva, Scott Klemmer
- 2018 ACM CHI** *Interactive Guidance Techniques for Improving Creative Feedback.* **Honourable Mention**
Tricia J. Ngoon, C. Ailie Fraser, Ariel S. Weingarten, Mira Dontcheva, Scott Klemmer
- 2017 ACM CHI** *WeBuild: Automatically Distributing Assembly Tasks Among Collocated Workers to Improve Coordination.*
C. Ailie Fraser, Tovi Grossman, George Fitzmaurice
- 2016 ACM DIS** *DiscoverySpace: Suggesting Actions in Complex Software.*
C. Ailie Fraser, Mira Dontcheva, Holger Winnemöller, Sheryl Ehrlich, Scott Klemmer
- 2016 ACM CHI** *Framing Feedback: Choosing Review Environment Features that Support High Quality Peer Assessment.*
Catherine M. Hicks, Vineet Pandey, C. Ailie Fraser, Scott Klemmer

Dissertation Outcomes

Extended Abstracts (Demos, Posters, Workshops)

2019 ACM UIST *ReMap: Multimodal Help-Seeking.*

Demos C. Ailie Fraser, Julia M. Markel, N. James Basa, Mira Dontcheva, Scott Klemmer

2019 ACM CHI *Creative livestreaming: How sharing one's process can inspire, educate, and engage.*

Live Streaming Workshop C. Ailie Fraser, Joy O. Kim, Scott Klemmer, Mira Dontcheva

2018 ACM UIST *The Right Content at the Right Time: Contextual Examples for Just-in-time Creative Learning.*

Doctoral Consortium C. Ailie Fraser

2018 ACM CHI *Software videos: Rich content and learning potential, but a challenge for sensemaking.*

Sensemaking Workshop C. Ailie Fraser, Mira Dontcheva, Scott Klemmer

2017 ACM UIST *CritiqueKit: A Mixed-Initiative, Real-Time Interface For Improving Feedback.*

Demos C. Ailie Fraser, Tricia J. Ngoon, Ariel S. Weingarten, Mira Dontcheva, Scott Klemmer

2016 ACM CSCW *DiscoverySpace: Crowdsourced Suggestions Onboard Novices in Complex Software.*

Demos C. Ailie Fraser, Mira Dontcheva, Holger Winnemöller, Scott Klemmer

2015 ACM Learning at Scale *Do numeric ratings impact peer reviewers?*

Posters Catherine M. Hicks, C. Ailie Fraser, Purvi Desai, Scott Klemmer

Dissertation Outcomes

Other Publications

ACM interactions *How Live Streaming Does (and Doesn't) Change Creative Practices.*

Jan 2020 C. Ailie Fraser, Mira Dontcheva, Joy Kim, Scott Klemmer

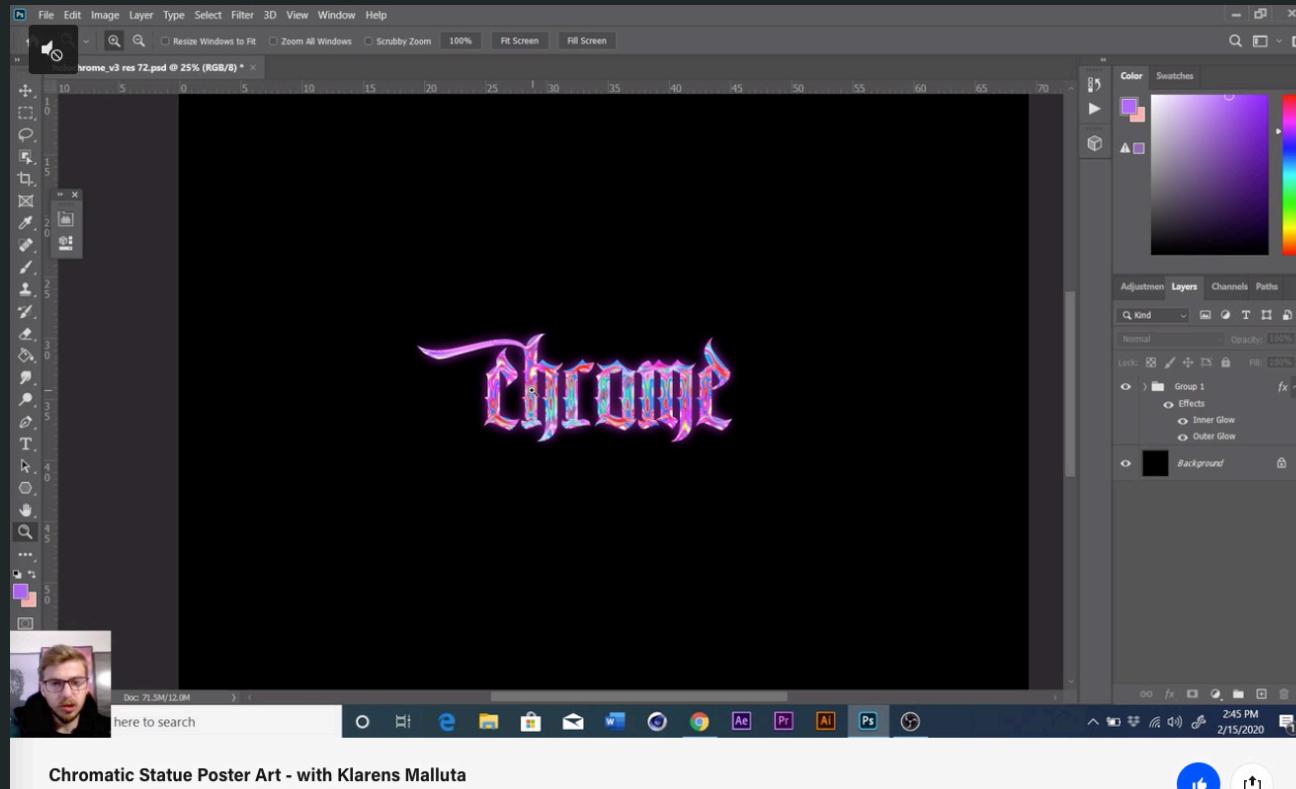
Medium *How to download public YouTube captions in XML.*

May 2019 C. Ailie Fraser

Dissertation Outcomes

Impact on Industry Product

Bē



Klarens Malluta
Toronto, Ontario, Canada

TOOL TIMELINE INFO

- Chapter 1: Intro 00:00:00
- Chapter 2 See Tools 00:02:24
- Chapter 3 See Tools 00:39:32
- Chapter 4 See Tools 00:42:12
- Chapter 5 See Tools 00:47:34

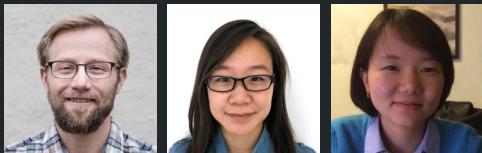
- Invert (Cmd+I)
- Select layer Name: Layer 2
- Channel
- Copy (Cmd+C)
- Paste (Cmd+V)
- Invert (Cmd+I)
- Select layer Name: Layer 2
- Channel

Chromatic Statue Poster Art - with Klarens Malluta

Next Steps: Adobe Research - Seattle

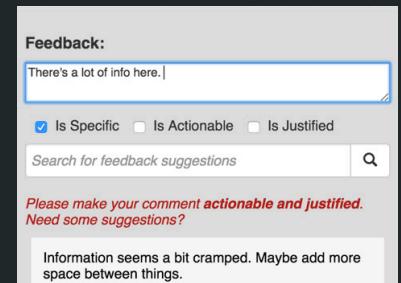
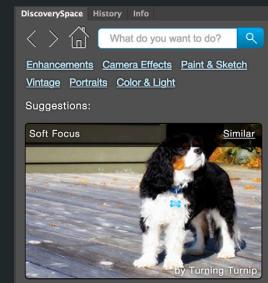
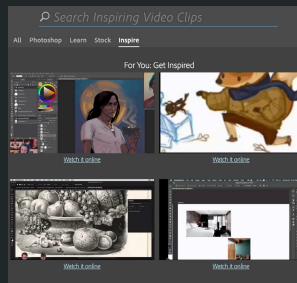
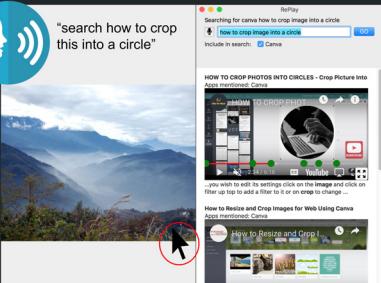
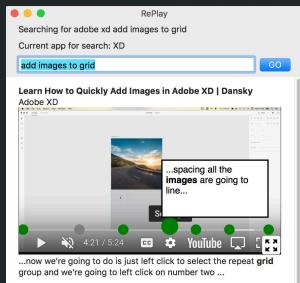


Research Engineer



Final thoughts

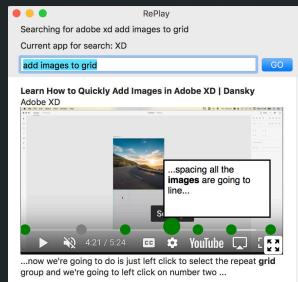
- Lowering the barrier to get started is a key step toward enabling creativity
- Expert help and demonstrations are powerful tools for learning, execution, and inspiration
- Bringing expert resources into the user's context makes them more useful



Thanks!

cafraiser@cs.ucsd.edu
@ailiefraser

- Lowering the barrier to get started is a key step toward enabling creativity
- Expert help and demonstrations are powerful tools for learning, execution, and inspiration
- Bringing expert resources into the user's context makes them more useful



"search how to crop this into a circle"

