

10:00 – 10:30

About : Stefan Kraus / The Node Institute Berlin
Experimental Art & Design with TouchDesigner

10:30 – 11:30

Introduction to TouchDesigner

11:30 – 11:45

Break

11:45 – 12:30

Exercise 1 - Videosynthesizer with Interface & Sound

12:30 – 13:30 PM

Lunchbreak

https://github.com/MXZEHN/TD_WRSHP_VP_Beginners

13:30 – 15:15 PM

Exercise 2 - Analogue Clock with Sound

15:15 – 15:30

Break

15:30 – 16:45

Exercise 3 - 3D Render Setup with PBR

16:45 – 17:00

Break

17:00 – 18:15 PM

Exercise 4 - Simple Instancing with CHOPs

9:45 – 11:30

Exercise 5 - Auto Bauhaus Generator with Audio Control

11:30 – 11:45

Break

11:45 – 12:30

Exercise 6 - Data Visualisation with Bitcoin Data

12:30 – 13:30

Lunchbreak

https://github.com/MXZEHN/TD_WRSHP_VP_Beginners

13:30 – 15:15

Exercise 7 - DMX & Artnet Pixelmapping

15:15 – 15:30

Break

15:30 – 16:45

Exercise 8 - Videomapping with the Kantan Mapper

16:45 – 17:00

Break

17:00 – 18:15

Exercise 9 - Build a Show

So what about
Touchdesigner?
Applications
& Examples

INPUT
PROCESS
OUTPUT

**CONNECT
EVERYTHING
WITH EVERYTHING**

<https://www.whitevoid.com>



<https://www.whitevoid.com>



<https://www.whitevoid.com>



<https://www.whitevoid.com>



<https://www.whitevoid.com>



live design & performance

Show / Concert / Event / Exhibition / Fair / Theater

research and development

Data Visualisation / Research / Education / Prototyping

experimental

...

read, translate and send everything

DMX, Artnet, MIDI, OSC, JSON, Serial, TUIO, RS322, Audio, Video, Text, Sheets, Web, Mobile, Light, Ableton, CV

build custom applications

make your programs private for reselling

with a pro license, e.g. GeoPix / <https://www.enviral-design.com>

build custom media servers with multiple outputs

e.g. Luminosity / <https://github.com/IntentDev/Luminosity>

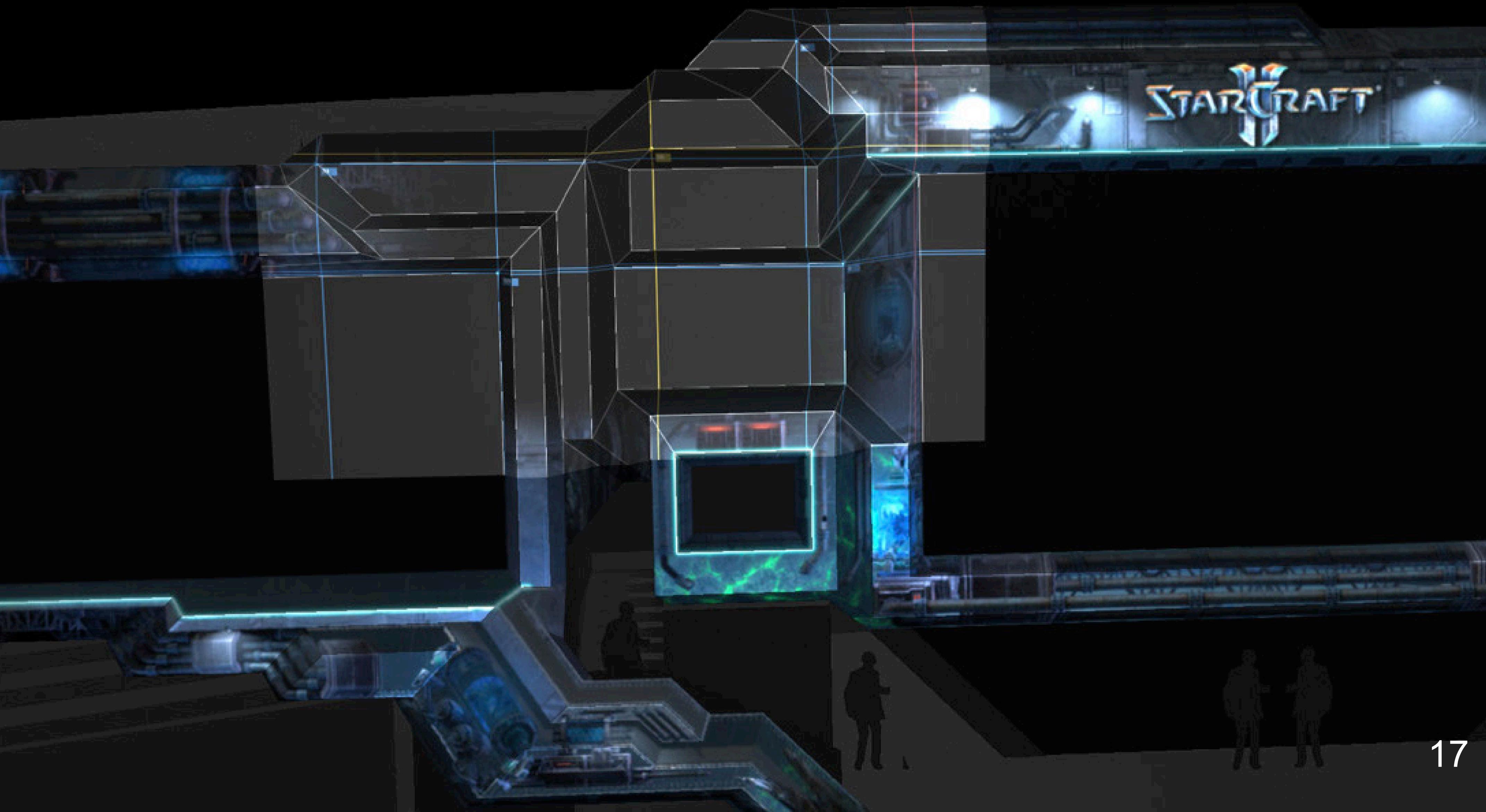
<https://www.derivative.ca/Events/2015/Luminosity/>

The screenshot displays the Lumino software interface, featuring a 3D rendering window at the top left showing a complex scene with glowing orange and red particles against a dark background. Below the rendering window is a bank of 16 buttons labeled from k3 to Bank16, with Scene4 currently selected. To the right of the buttons is a grid of thumbnail previews for various assets, categorized into sections: Audio, Video In, Particles, SacredGeo, Curves, and Spherical. The Video In section contains thumbnails for 'Lighter Than Air' and 'HeadsUp_16_1'. The Particles section contains thumbnails for 'HeadsUp_14_1' through 'HeadsUp_20_1' and 'NeoTron_17_1' through 'NeoTron_19_1'. The SacredGeo section contains thumbnails for 'HeadsUp_22_1' through 'HeadsUp_27_1' and 'NeoTron_25_1' through 'NeoTron_28_1'. The Curves section contains thumbnails for 'HeadsUp_08' through 'HeadsUp_12_1' and 'NeoTron_23_1'. The Spherical section contains a single thumbnail for 'Spherical'. To the right of the asset grid is a timeline with 16 frames, each containing a preview image and controls for Opacity, Volume, and Clip Lane settings. Further to the right are several control panels: 'Levels' (with Pre Key Level On, Pre Key Brightness, Pre Key Gamma, etc.), 'Feedback' (with Mix, Pre Opacity, Brightness, etc.), 'Strobe' (with Trigger, Qtr, 8th, 16th, Square, Saw Dwn, Smooth, Mode, Hue, Saturation, Value), and 'Master' (with Inserts, Sources, Sends). The bottom of the interface features a series of buttons labeled A, B, Auto for each frame.

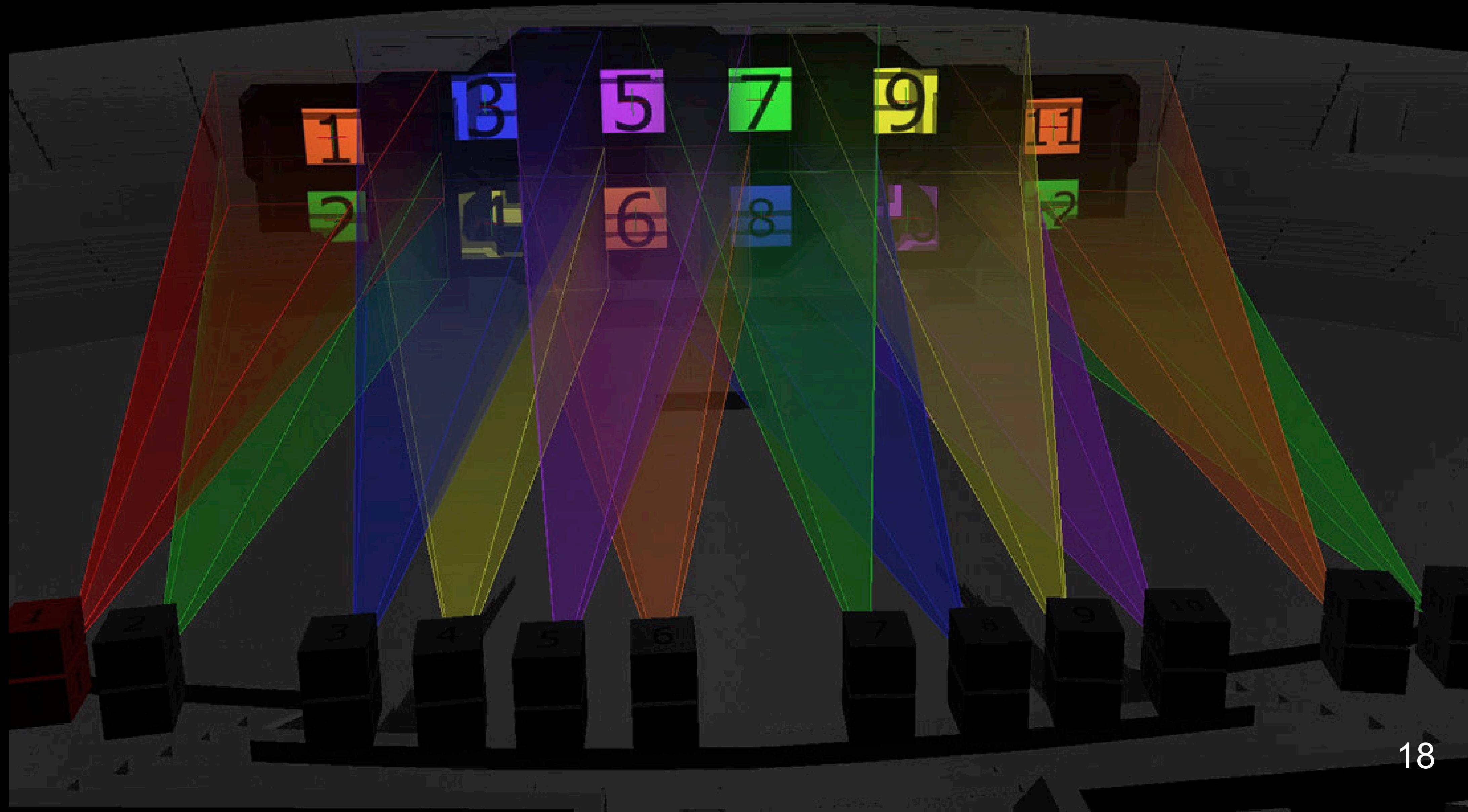
<https://www.derivative.ca/Events/2015/Luminosity/>



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realtime animation

Effects, Motion Design, 3D Animation, Mixing and Routing, Data driven visual content (Music, Data Base, Sheets, Interaction) and Simulations (Physics, Particles) output to wild formats incl. 360°

lighting & laser design

Moving Lights, LED Fixtures, Lasers, LED Sculptures

virtual & augmented reality

prototype VR experiences with VIVE, Oculus, Hololens

web & mobile interaction

connect to users via the internet

use mobile Apps to control Media Installations

use Web Content in AV Installations

Connect to APIs to gather Data

tracking

Use Kinect, Intel RealSense, Leap Motion, OpenCV and more to learn about the environment and enable touch free interactions

extend the functionality

use scripting and coding to extend functionality

Shader Authoring (GLSL)

**scripting in Python allows to use numerous Libraries
from within Touchdesigner**

programming custom nodes in C++ (z.B. Vincent Houze)

projection mapping

keystoning with Stoner

creative mapping with Kantan Mapper

projector calibration with CamSchnappr

what hardware do we need?

PC over MAC

NVIDIA over ATI & INTEL

QUADRO over GTX

external sound card over internal sound

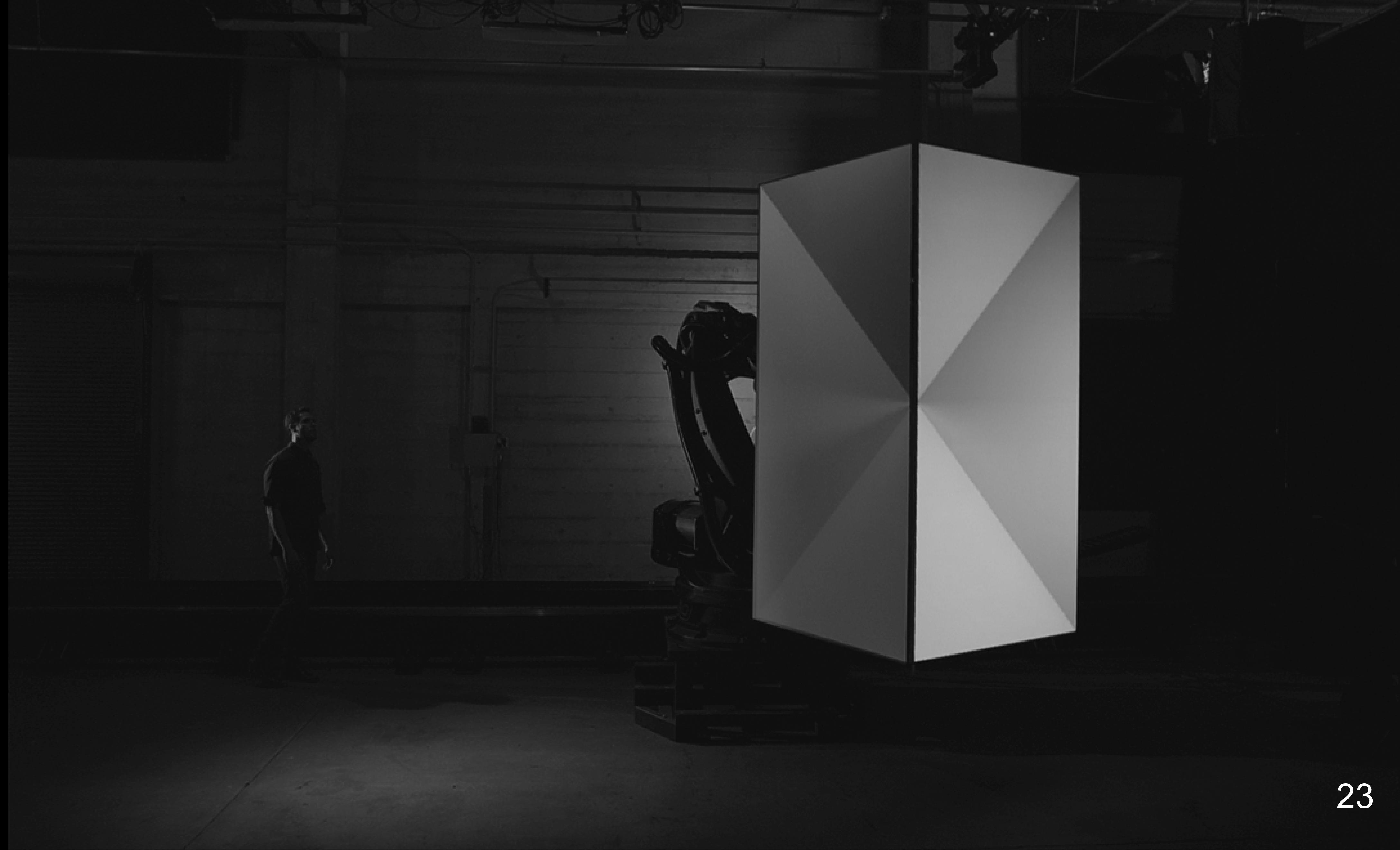
for video playback

hard disc > memory > CPU > GPU

for generative content

GPU > Memory > CPU

<https://gmunk.com/BOX>



<https://vincenthouze.com>

<http://www.daveandgabe.care/projects>



<http://www.soma-cg.com>





CUE 1

OSD/PT Master Control Number of Monitors: 11 SETUP

<http://www.soma-cg.com>

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https://www.instagram.com/vjrez_tokyo/



Free Learning Resources

Matthew Ragan / <https://matthewragan.com/touchdesigner-workshop-yale-2017/>

The WIKI / https://docs.derivative.ca/Category:Tutorials#First_Things_to_Know_about_TouchDesigner

More Learning Resources

Elburz & nVoid / <https://learntouchdesigner.com/>

Lichtpfad Studios / <https://lichtpfad.selz.com/de>

MXZEHN / <https://mxzehn.de/tutorials>

Where to get help & connect

Forum / <http://www.derivative.ca/Forum>

FB Help Group / <https://www.facebook.com/groups/touchdesignerhelp>

TouchDesigner on Discord / <https://discordapp.com>

More stuff

ChopChopChop Asset Store / <https://chopchopchop.org>

Richard Burns TD Plugin Store / <https://touchdesignerplugins.com>

Elburz Templates / <https://template.elburz.io>

Share Video between Apps:

Syphon / <http://syphon.v002.info>

Spout / <http://spout.zeal.co>

NDI / <https://www.newtek.com/ndi/tools>

Hardware IO:

Arduino / <https://www.arduino.cc>

Enntec DMX / <https://www.enttec.com>

Datapath FX4 / <https://www.datapath.co.uk>

Magewell USB Capture / <https://www.magewell.com/capture/usb-capture>

Wacom / <https://www.wacom.com>

Leap Motion / <https://www.leapmotion.com>

Real Sense / <https://software.intel.com/en-us/realsense/d400>

ZED / <https://www.stereolabs.com/>

Helpful Software:

Ableton Live / <https://www.ableton.com/de/live>

Audacity / <https://www.audacityteam.org>

Blender / <https://www.blender.org>

OBS / <https://obsproject.com>

Mapping Matter / <http://www.mappingmatter.com>

OSC / MIDI

TouchOSC / <https://hexler.net/software/touchosc>

Lemur / <https://liine.net/en/products/lemur>

Open Stage Control / <https://osc.ammd.net>

Vezer / <https://imimat.com/vezer>

OSSIA / <https://ossia.io>

RTP Midi / <https://www.tobias-erichsen.de/software/rtpmidi.html>

MIDI Ox / <http://www.midiox.com>

More stuff

Text Editor / <https://www.sublimetext.com>

BPM / FPS Calculator / https://www.vjamm.com/support_av_bpm.php%3Flang=en.html

Artnet Monitor / <https://www.lightjams.com/artnetominator/>

Video Encoder / <https://ffmpeg.org/>

Sound Drivers / <http://www.asio4all.org/>

3D Package / <https://www.blender.org/>

Intermediate Codec / <https://en.wikipedia.org/wiki/CineForm>

MultiDisplay Splitter / <https://www.datapath.co.uk/datapath-products/multi-display-products/datapath-fx4>

Intermediate Codec / <https://en.wikipedia.org/wiki/CineForm>

IoT Flow Programming / <https://nodered.org>

Network Applications / <https://nodejs.org>

Creative Coding

Processing / <https://processing.org>

OpenFrameworks (C++) / <https://openframeworks.cc>

Cinder (C++) / <https://libcinder.org/about>

Game Engines

Unity / <https://unity3d.com>

Unreal / <https://www.unrealengine.com>

VJ Software

Resolume / <https://resolume.com>

VDMX / <https://vidvox.net>

Modul8 / <http://www.garagecube.com/modul8>

MadMapper / <http://www.garagecube.com/madmapper>

COGE / <https://imimot.com/coge>

Millumin / <https://www.millumin.com/v3/index.php>

HeavyM / <https://heavym.net>

SMODE / <https://smode.fr>

Media Server

D3 / <https://www.disguise.one/en/products>

Pandoras Box / <https://www.coolux.de/de>

Green Hippo / <https://www.green-hippo.com/hippotizer-media-servers>

Wings / <https://avstumpfl.com/en/server-control-systems/software>

Watchout / <https://www.dataton.com/products/watchout>

Lighting Hard- & Software

E:cue / <https://www.osram.de/ecue>

Madrix / <https://www.madrix.com>

GrandMA / <https://www.malighting.com/de>

Node based Programming

VVVV / <https://vvvv.org>

Max+Jitter / <https://cycling74.com/products/max>

Pure Data / <https://puredata.info>

Isadora / <https://troikatronix.com>

Cables / <https://cables.gl>

Notch / <https://www.notch.one>

Ventuz / <https://www.ventuz.com>

XOD / <https://xod.io>

Nodes in other interesting software

Nodal – Musik / <http://nodalmusic.com>

Nuke – Compositing / <https://www.foundry.com/products/nuke>

Houdini – 3D FX / <https://www.sidefx.com/products/houdini>

Substance Designer - Materials / <https://www.allegorithmic.com>