

**Wir bauen uns eine  
FOSS CGI/VFX Pipeline**

# Hi! My name is...

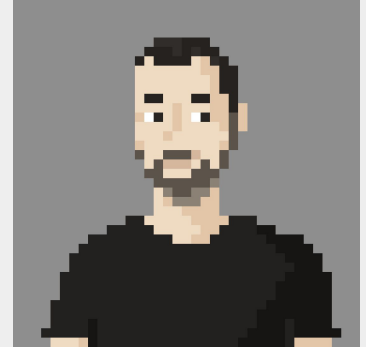
## **psykon**

Tech Lead “MountainBytes Demoparty”

Vorstand “Echzeit - Digitale Kultur”

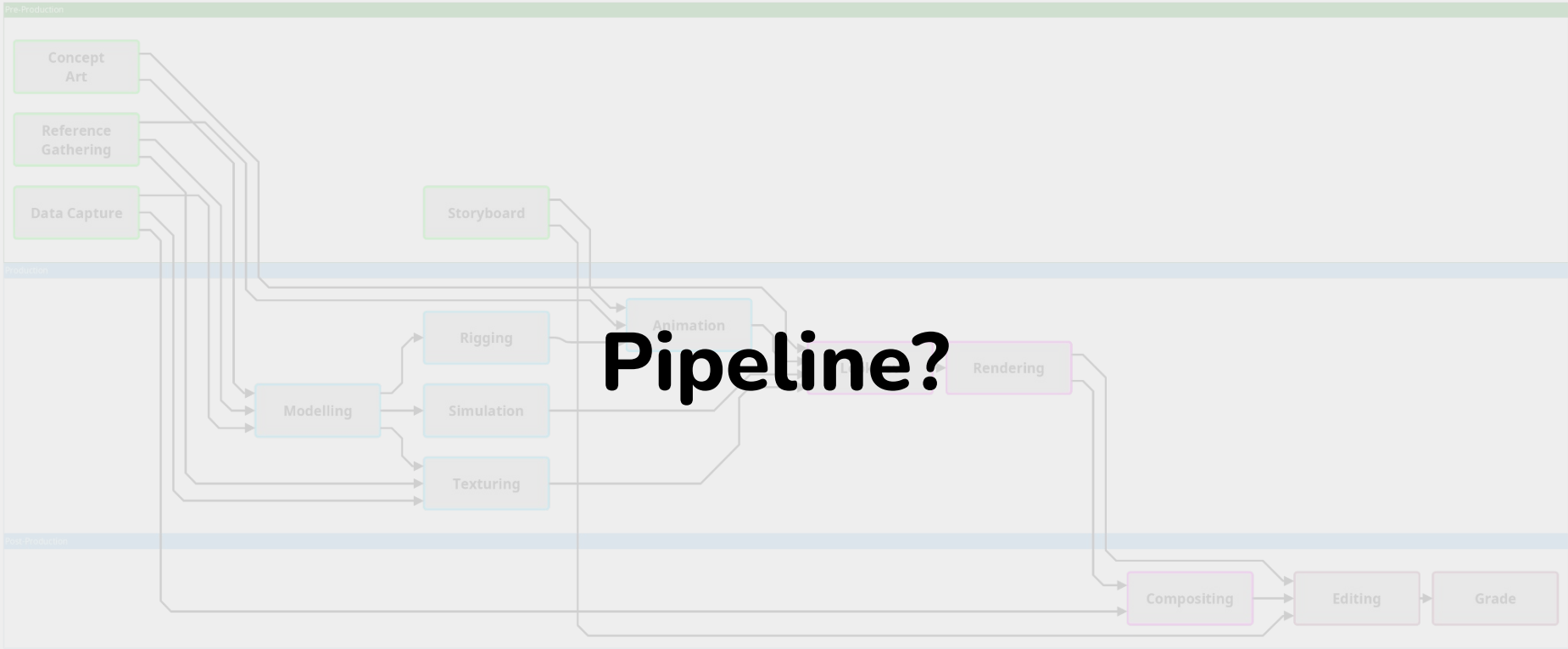
Grafik, Direction bei Demogroup Mercury

Macht Computergrafik seit 20+ Jahren



<https://links.psykon.net>





```
~ » ./create_font_mesh -s "CoSin24" | extrude_mesh -l 21.5 |  
split_normals | setm_rgb -r 20 -b 100 -g 26 -o mesh.obj
```

# Pipeline!

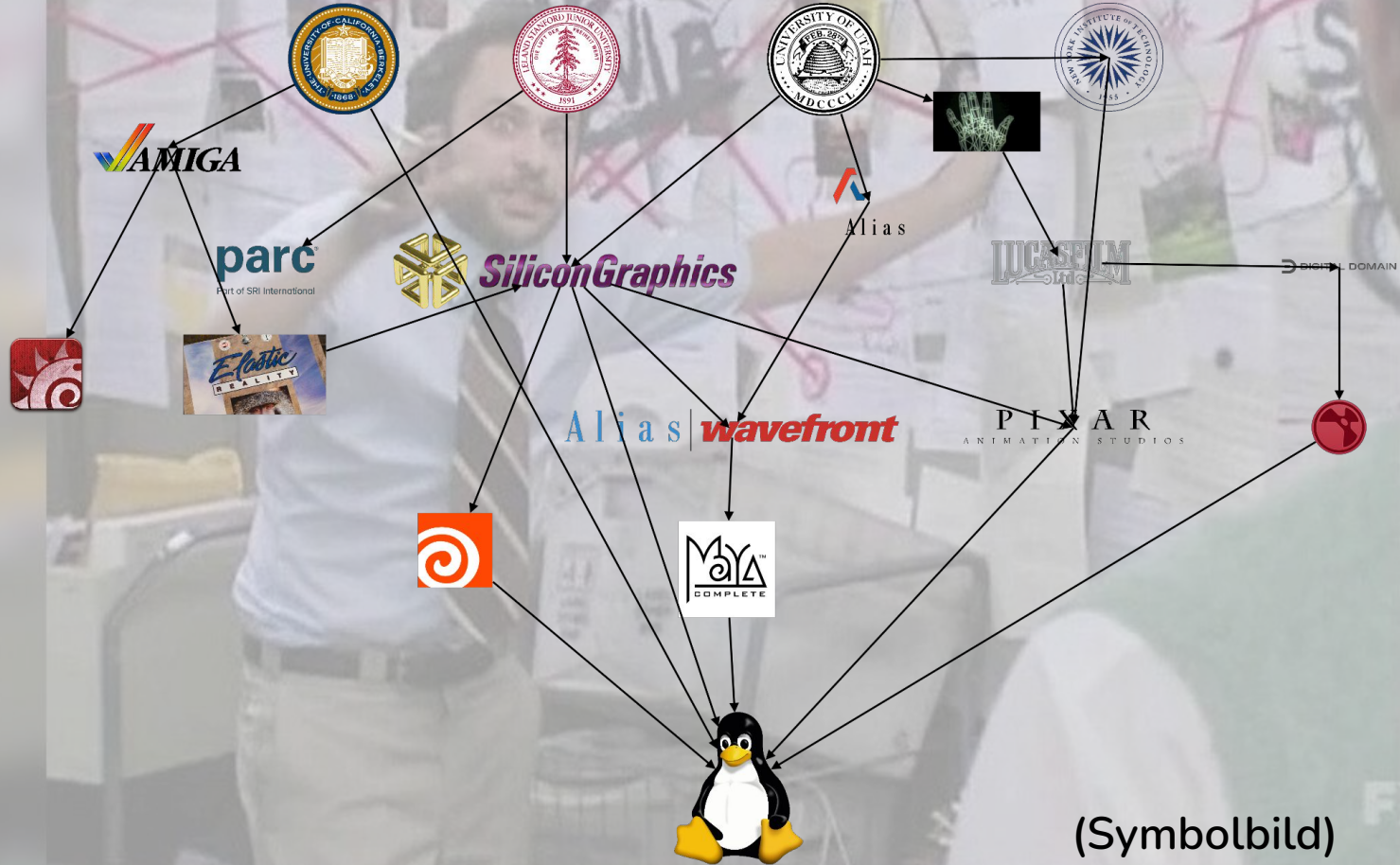


CoSin24

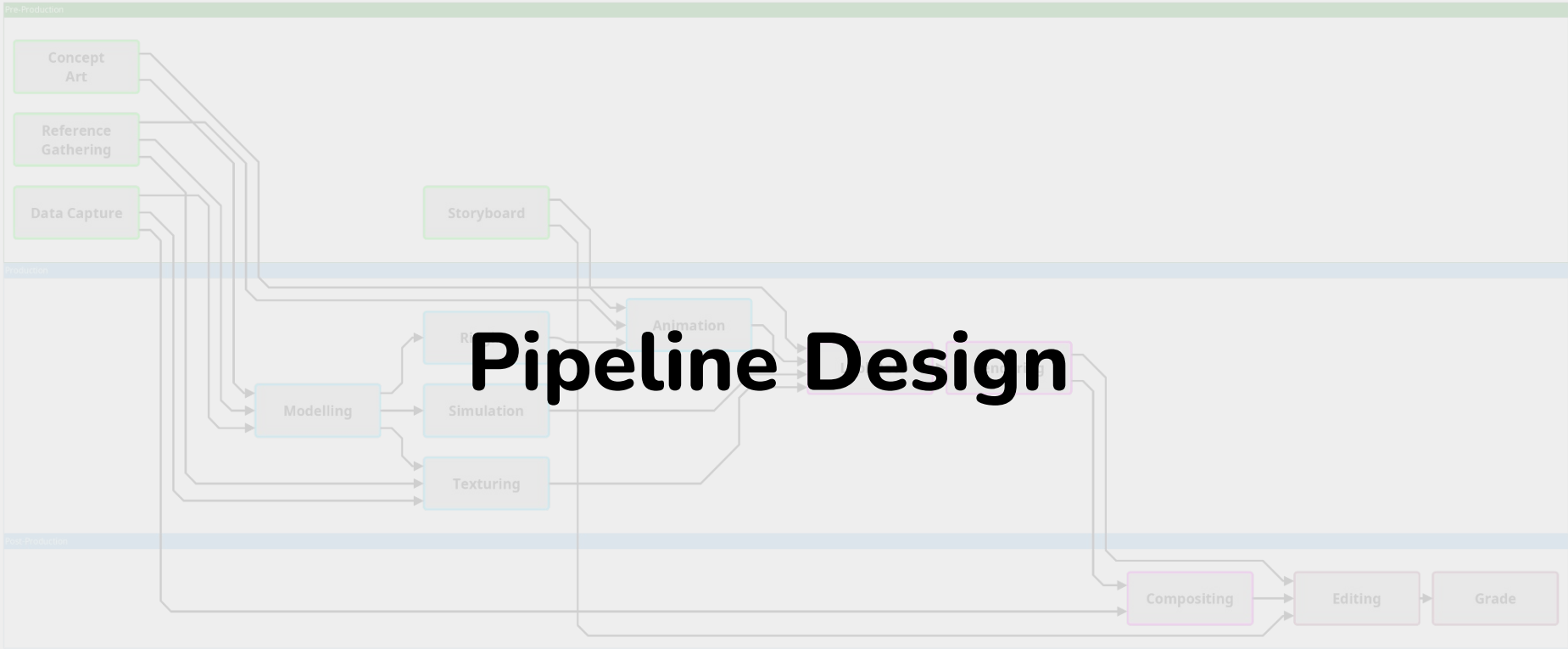
CoSin24

CoSin24

# Ein bisschen Geschichte



(Symbolbild)



Pre-Production

Concept Art

Reference Gathering

Data Capture

Storyboard

Production

Modelling

Rigging

Simulation

Texturing

Animation

LookDev

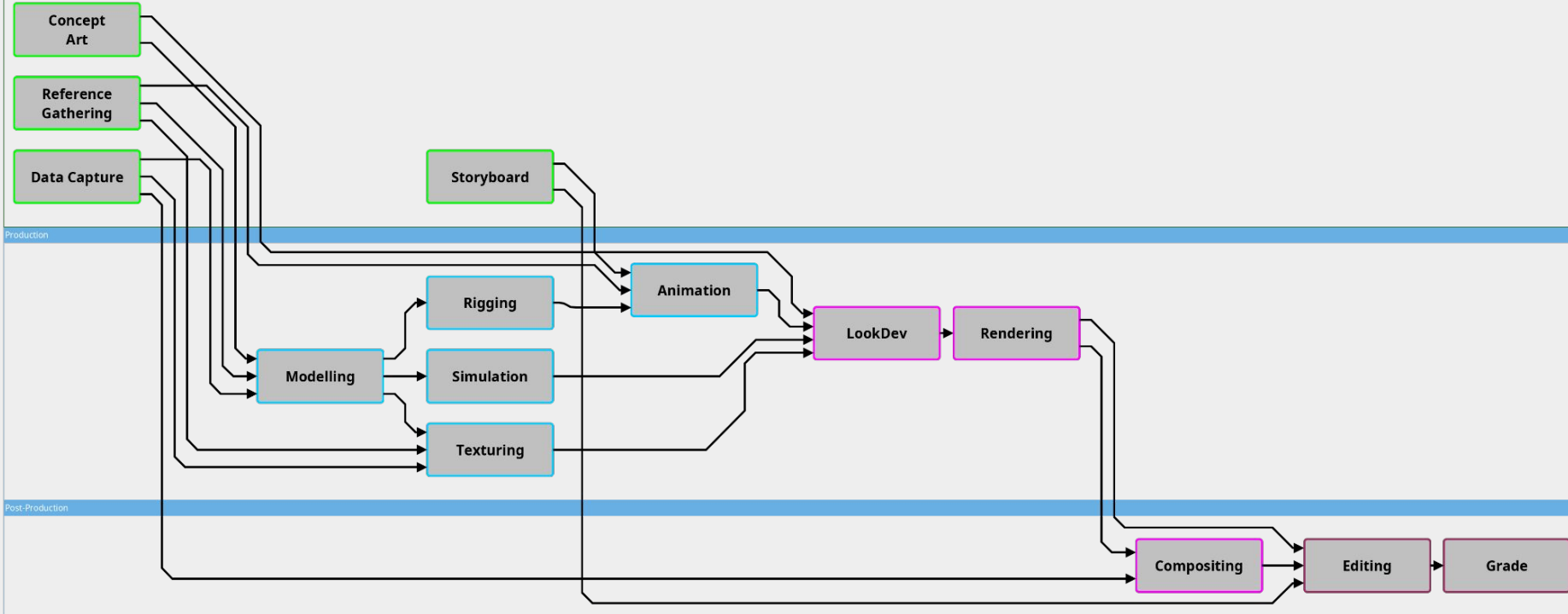
Rendering

Post-Production

Compositing

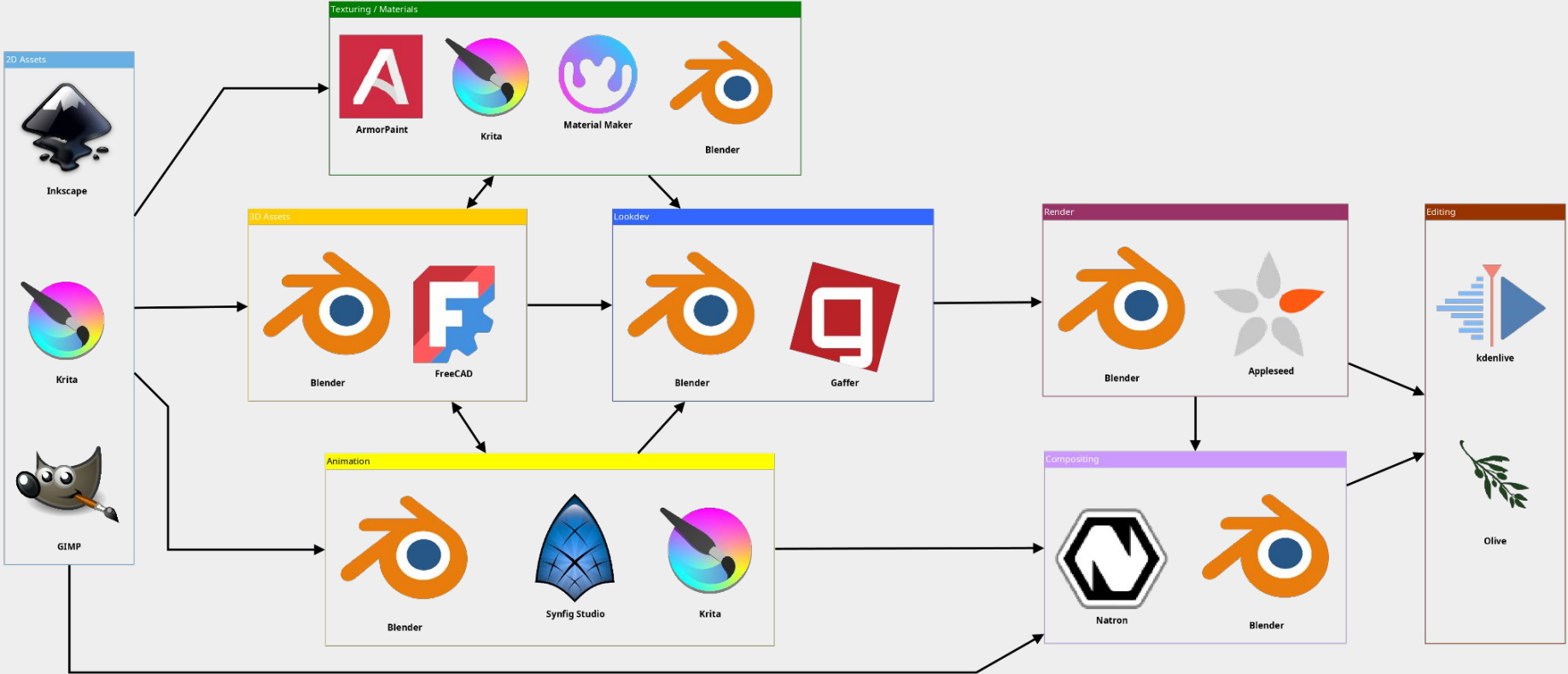
Editing

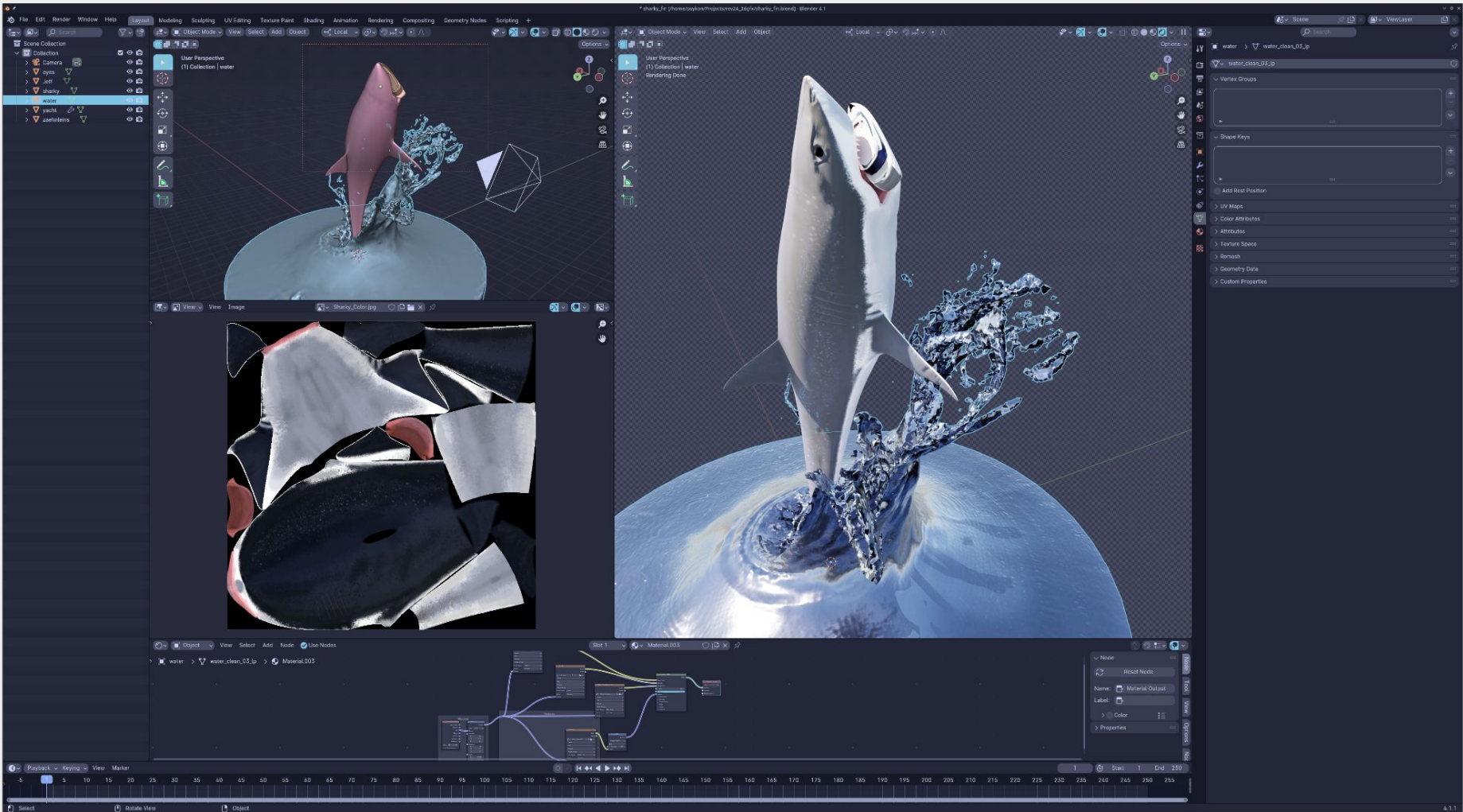
Grade



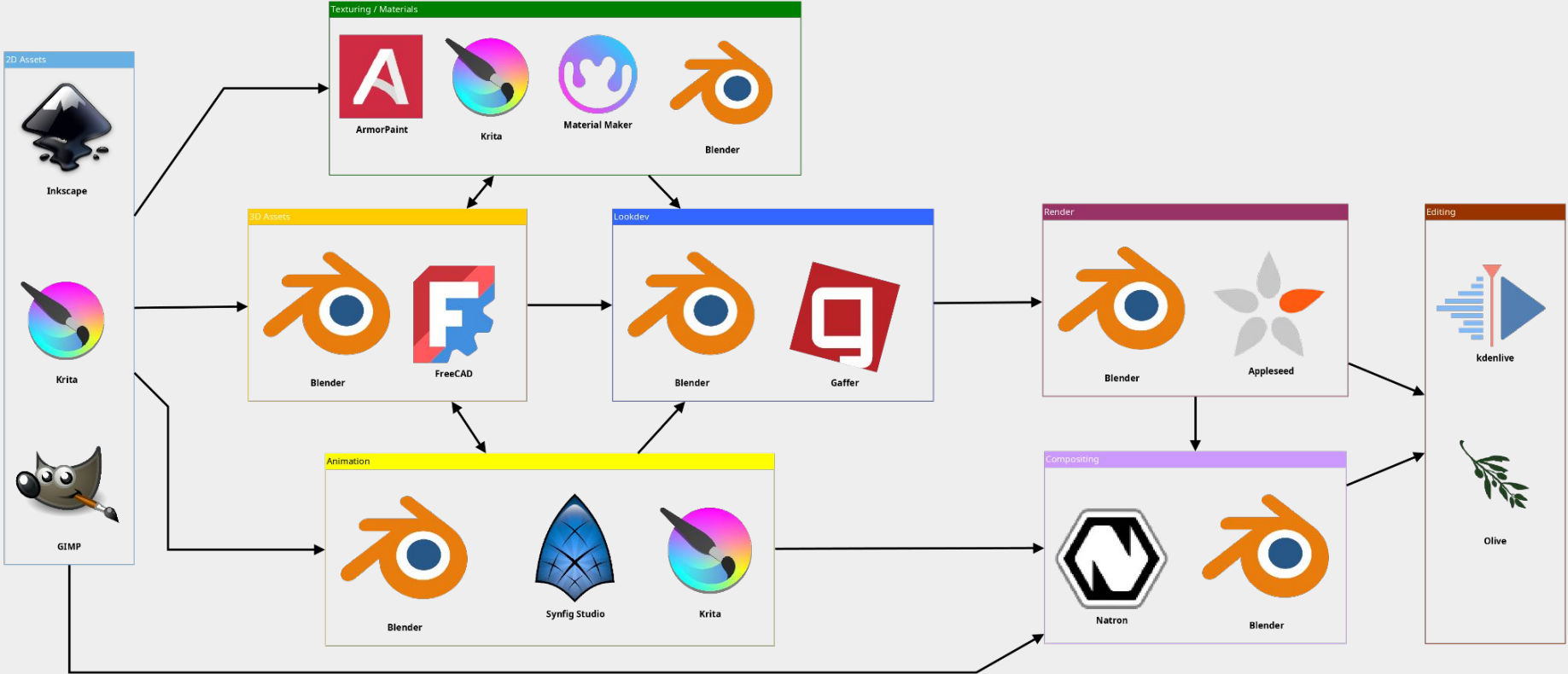


# Pipeline Design





# Pipeline Design



# Assets

The image shows a Blender 2.80 interface with a 3D character model in the center. The character is wearing a blue jacket with a large white 'A' on the back, a dark red vest, and a black helmet. The 3D Viewport is in the foreground, and the 2D Viewport is in the background, showing a texture map of the character's jacket. The 2D Viewport is displaying a texture map of the character's jacket, showing a blue and white pattern. The interface includes a top menu bar with File, Edit, Viewport, Mode, Camera, and Help. The 3D Viewport has a toolbar on the left with various tools like Select, Rotate, and Scale. The 2D Viewport has a toolbar on the left with various tools like Move, Rotate, and Scale. The Properties panel on the right shows the material settings for the selected object, including Color, Opacity, Occlusion, Roughness, Metallic, Normal Map, Emission, Height, and Subsurface. The Layers panel on the right shows two layers: Layer 1 and Layer 2. The Nodes panel on the right shows the material node tree, including a MixRGB node and a Material Output node. The Materials panel on the right shows a grid of material preview spheres. The bottom status bar shows the current scene name 'Fabric030\_4K\_C...' and the resolution '4096x4096'.

File Edit Viewport Mode Camera Help 3D View 2D View Layers History Plugins

0.5 Radius 1 UV Scale 0 Angle 1 Opacity 0.8 Hardness Mix UV Map X-R Fabric030\_4K\_C... Tiled 4096x4096

2D Assets

Inkscape

Krita

GIMP

Material 1 Input Texture Color Vector Converter Group Search

RGB

Color

MixRGB

Mix

use\_clamp

Fac 0.8

Color 1

Color 2

Image Texture

Color

Alpha

cloud/decals/armory.png

Auto

Vector

Material Output

Base Color

Opacity 1

Occlusion 1

Roughness 0.3

Metallic 0

Normal Map

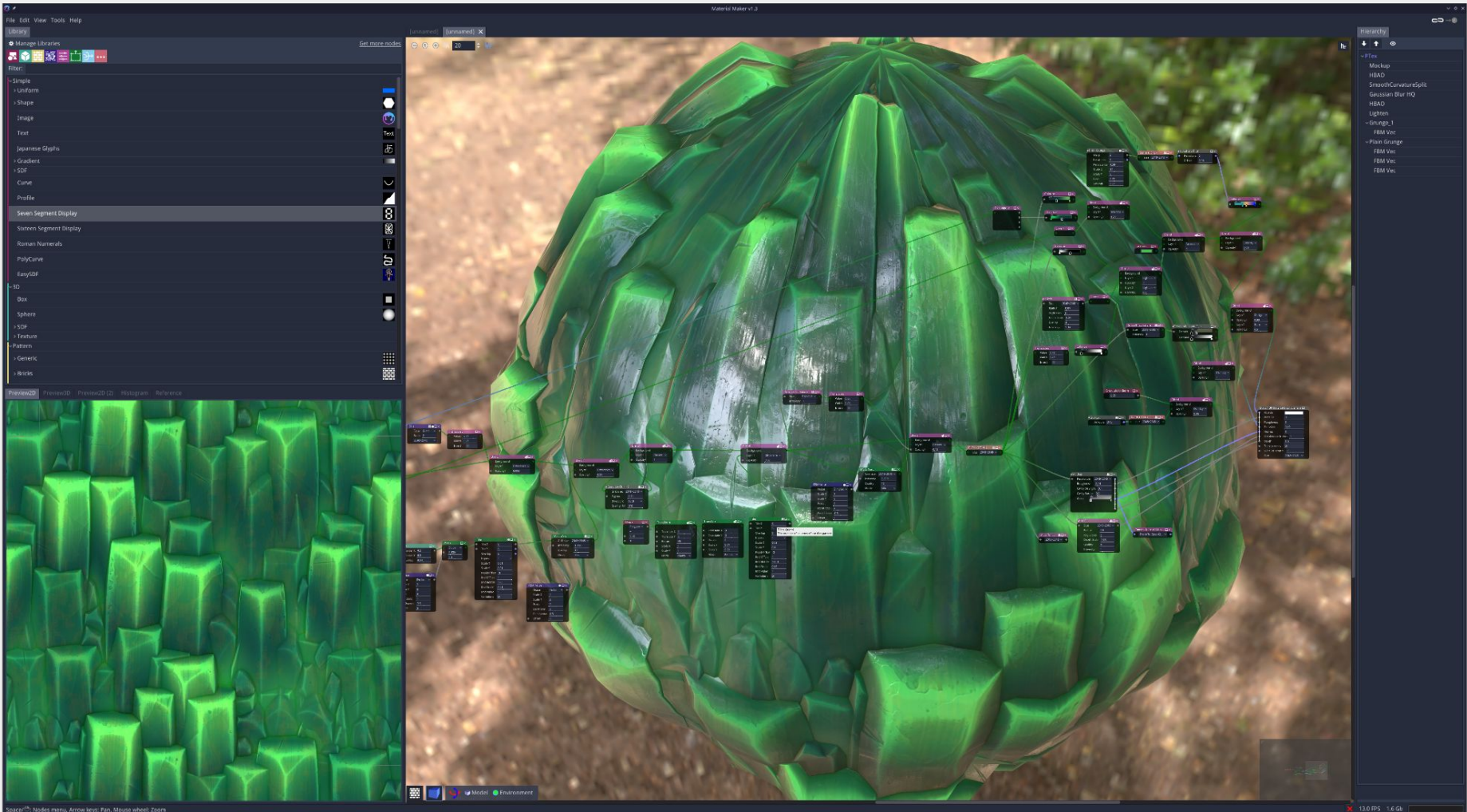
Emission 0

Height 0

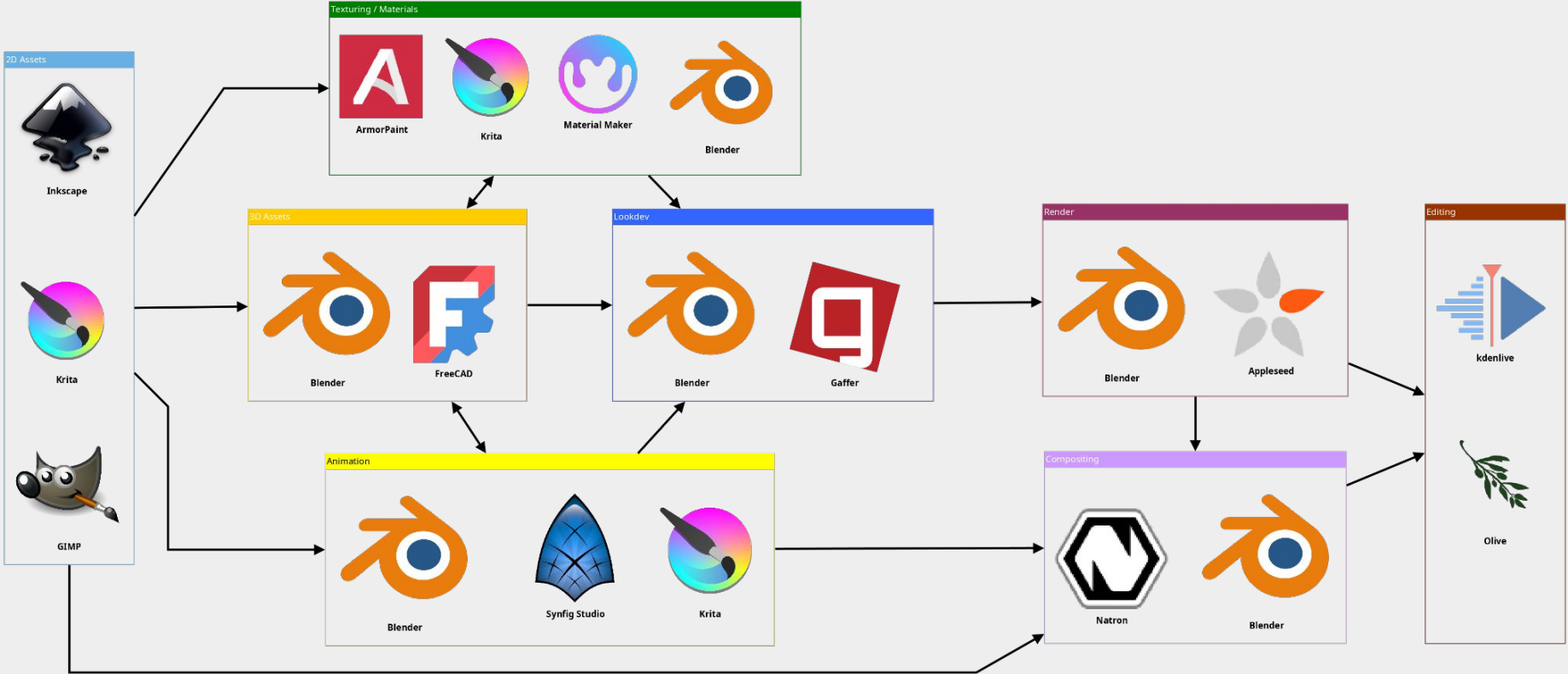
Subsurface 0

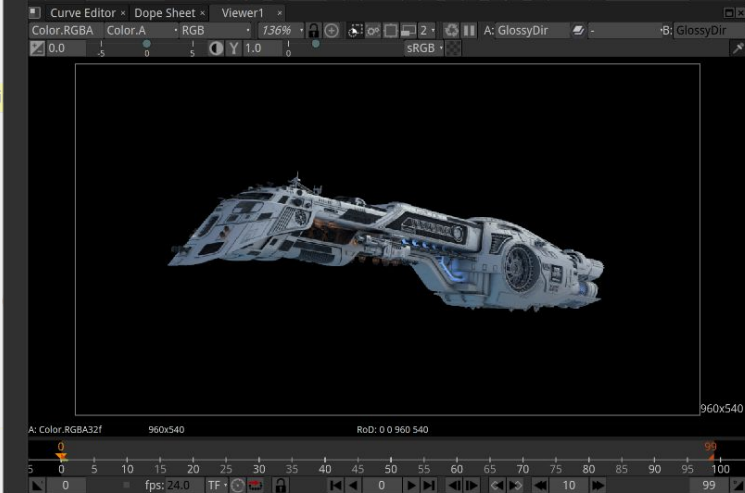
Materials Brushes Particles

New Import Nodes



# Pipeline Design





Properties

Project Settings

Settings Views Layers LUT Info Python

Name	Value
[DIO]	/opt/natron/Resources/OpenColorIO-Configs/blender/Project/home/psykon/Downloads/Natron_2.3.12_Spaceship/

Project Paths

Add... Remove Edit...

Project Format 960x540 New Format...

Auto Previews

Frame Range first 0 last 99 Lock Range

Frame Rate 24.0 50 100

GPU Rendering Enabled

Controls Node Info

File is/Spaceship\_Diffind/Spaceship\_Diffind\_####.png

First Frame 0 Before Hold

Last Frame 99 After Hold

On Missing Frame Load nearest

Frame Mode Starting Time Starting Time 0

Proxy File File path...

File Premult UnPreMultiplied

Output Premult PreMultiplied

Output Component RGBA32

File Edit Layout Display Render Cache Help

Viewer1 Color.RGBA RGB 75% 1.0 sRGB

Color:RGBA 960x540 RoD: 0 0 960 540

fps:24.0 TF

Node Graph Curve Editor Dope Sheet

robot\_0649.exr

Combine\_Gloss y\_Component

Combine\_Diffu z\_Component

Add\_Eybs

Blur1

Blur2

Background2

RenderList

Crop2

Properties

Project Settings

Name Value

[OCIO] /opt/natron/Resources/OpenColorIO-Configs/blender

Project Paths

Add... Remove Edit...

Project Format 960x540 New Format...

Auto Previews X

Frame Range first 1 last 50 Lock Range

Frame Rate 24.0

GPU Rendering Enabled

Read1

Controls Node Info

File [Project]/Robot/Robot\_####.exr

First Frame 1 Before Hold

Last Frame 50 After Hold

On Missing Frame Error

Frame Mode Starting Time Starting Time 1

Proxy File File path...

File Premult PreMultiplied

Output Premult PreMultiplied

Output Components RGBA

Frame rate 24.0 Custom FPS

File Info...

Decoder Options

Advanced Options

Output Layer Composite.Combined.RGBA

Edge Pixels Auto Offset Negative Display Window X

OpenImageIO Info...

OCIO Config File [OCIO]/config.ocio

File Colorspace linear/Linear

Output Colorspace linear/Linear

OCIO Context

OCIO config help...

CropGodRays

Controls Node Info

Extent Project

Frame Range min max

Softness 0.0

Reformat X Intersect Black Outside

Output Layer Color.RGBA All Planes X

Crop3

Controls Node Info

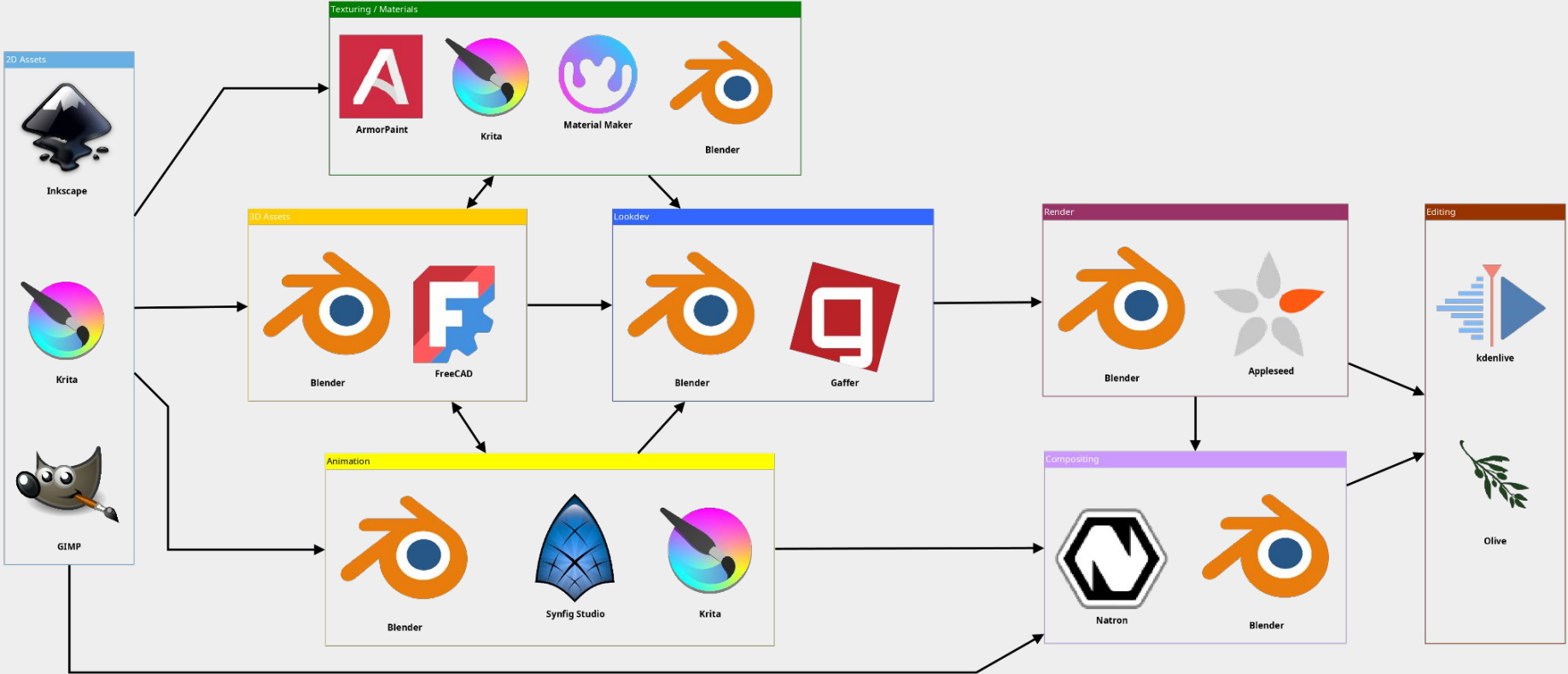
Extent Project

Frame Range min max

Ani



# Pipeline Design



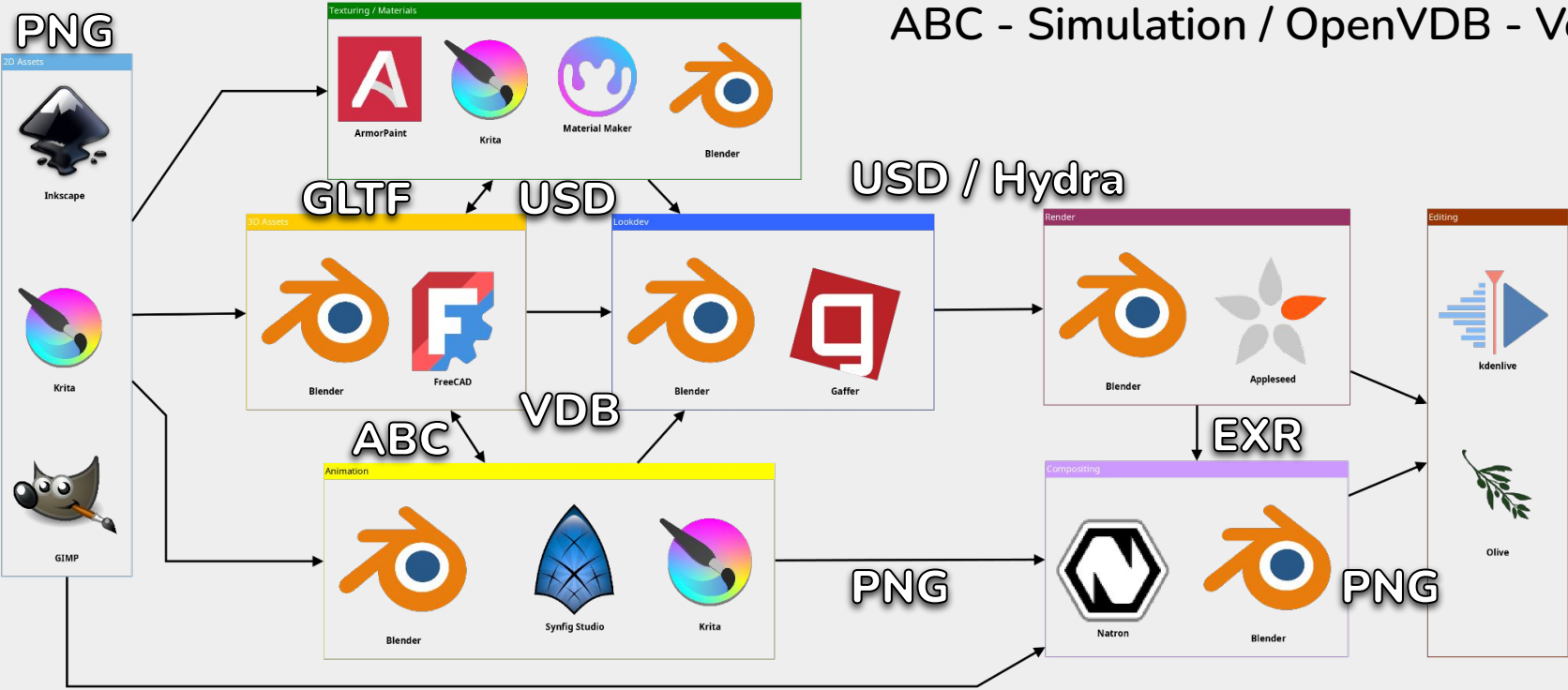
# Pipeline Design

Format:

PNG - Images / GLTF - Models

USD - Scenes / EXR - Layers

ABC - Simulation / OpenVDB - Volumen



# Pipeline Design

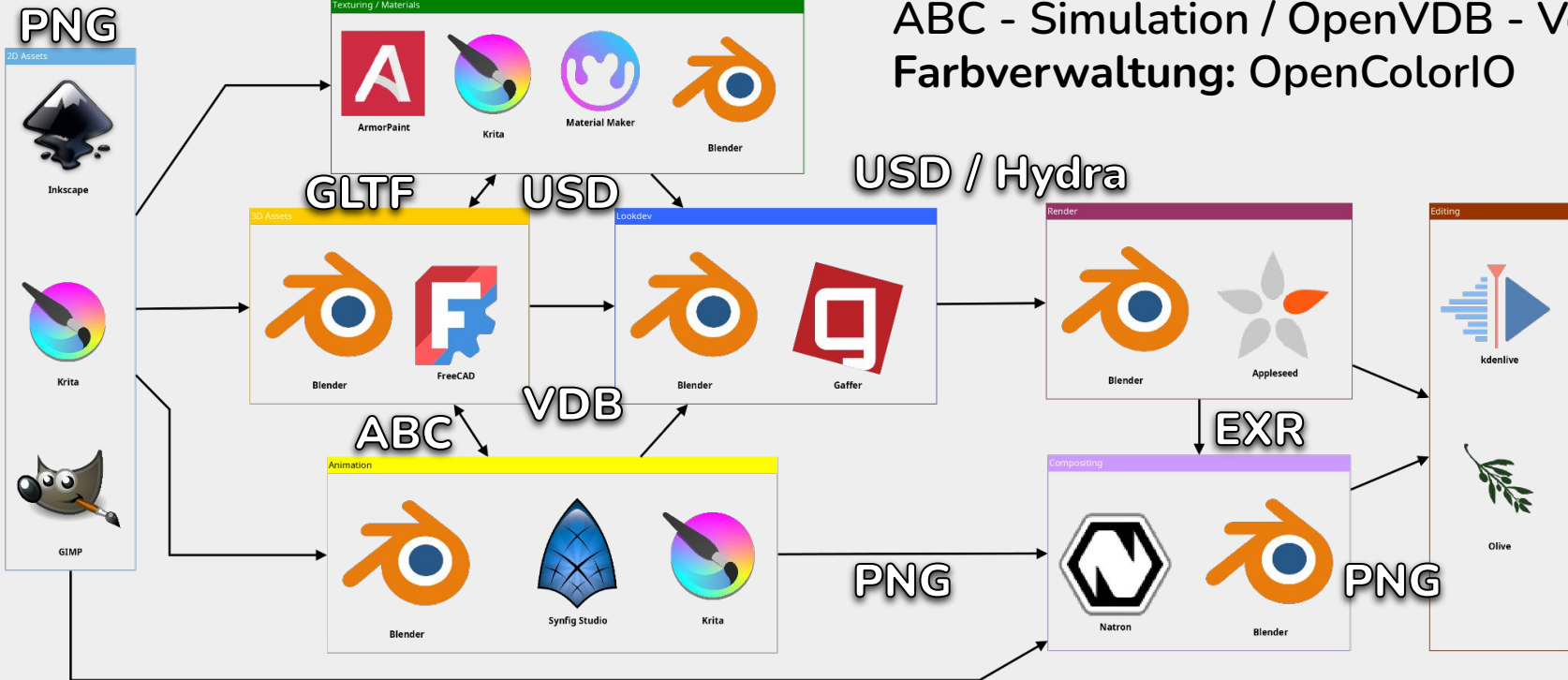
Formate:

PNG - Images / GLTF - Models

USD - Scenes / EXR - Layers

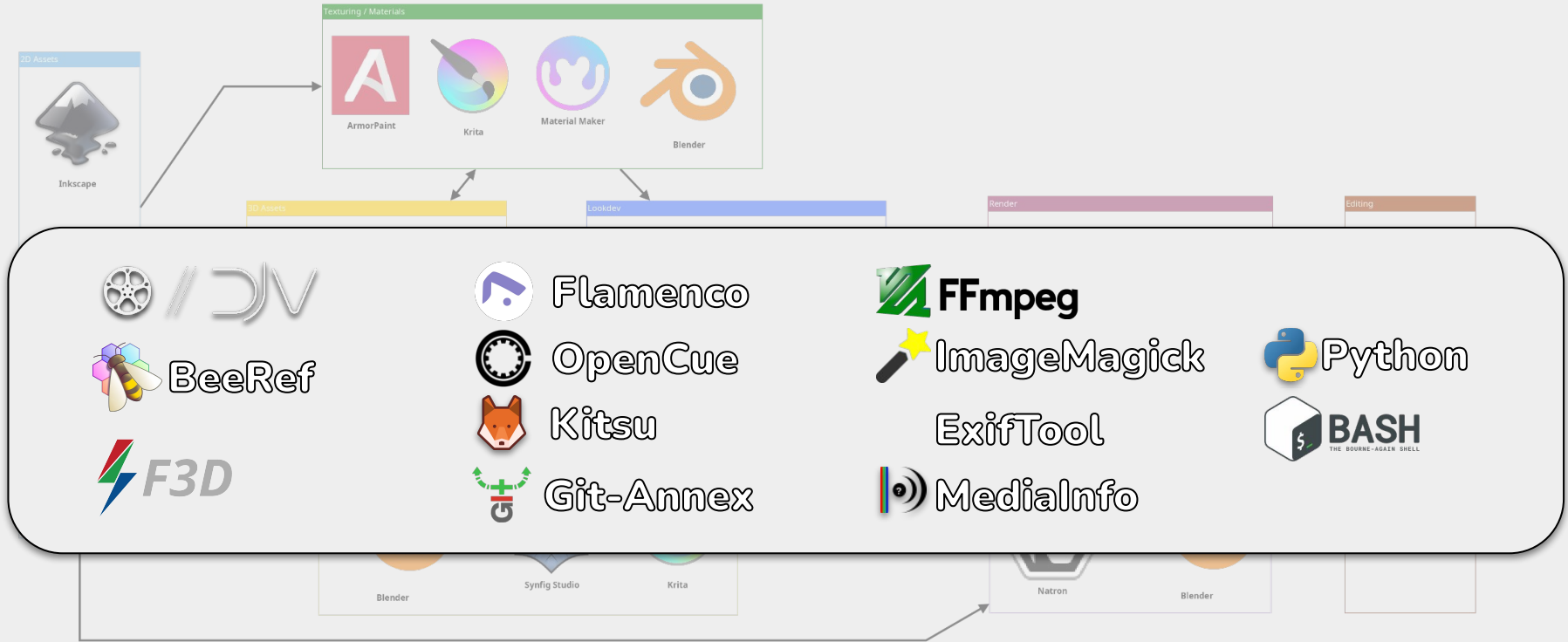
ABC - Simulation / OpenVDB - Volumen

Farbverwaltung: OpenColorIO

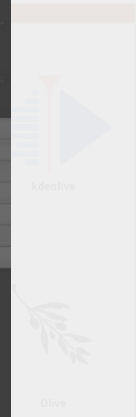


# **Die Helfer im Hintergrund**

# Kleine Helfer



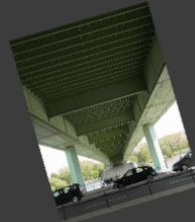
# Kleine Helfer



DJV 2.0.7

# Kleine Helfer

urban\_sketching\_my\_photos.bee\* - BeeRef



Blender

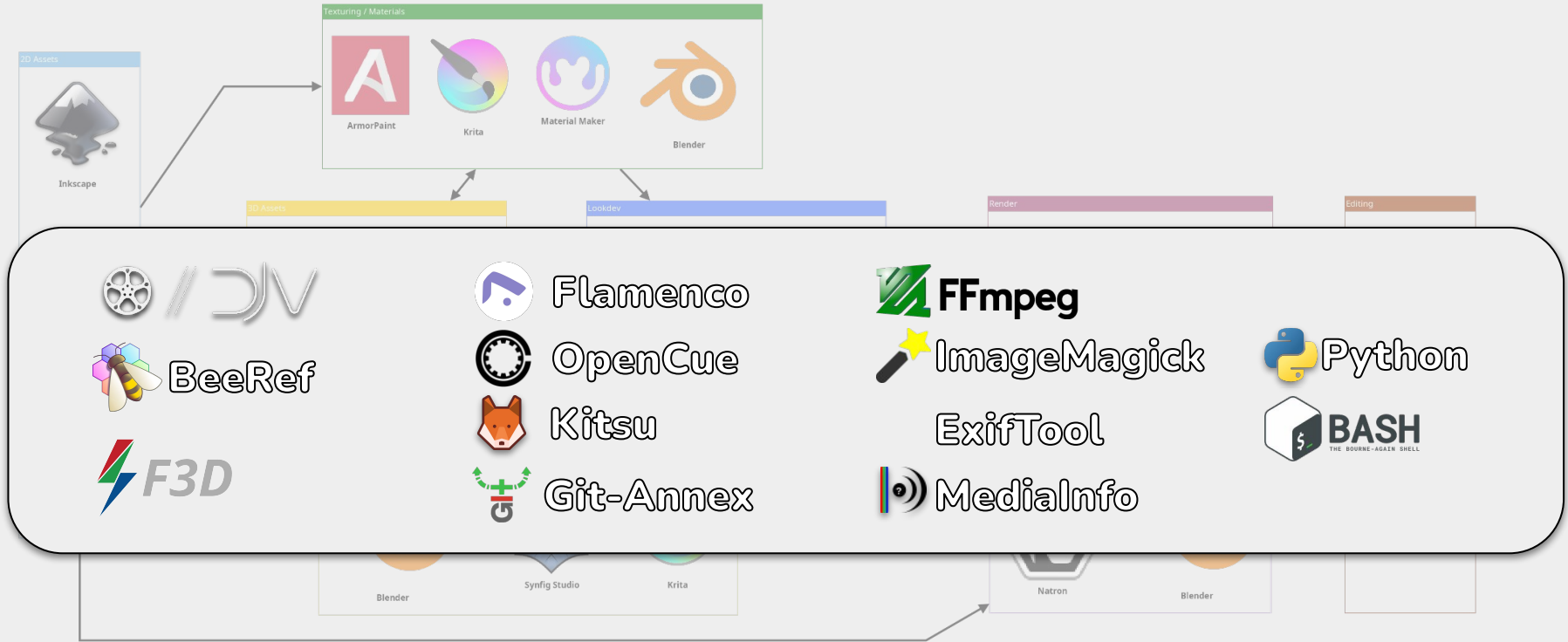
Synfig Studio

Krita

Netron

Blender

# Kleine Helfer






# Kleine Helfer

Flamenco 3 Jobs Workers Last Rendered add-on | A

Jobs

Cancel Job Queue

Status	Name	Type	PrIo	U
completed	my_cube	simple-blender-render	50	1
active	my_cube	simple-blender-render	50	1
active	my_cube	simple-blender-render	50	1
completed	Talk & Sleep longer	echo-sleep-test	3	2
completed	Talk & Sleep longer	echo-sleep-test	3	2
completed	Talk & Sleep longer	echo-sleep-test	3	6
canceled	Talk (1000x) & Sleep	echo-sleep-test	50	6
canceled	Test Render	simple-blender-render	50	1
canceled	Talk & Sleep longer	echo-sleep-test	3	1
canceled	Test Render	simple-blender-render	50	1
canceled	Test Render	simple-blender-render	50	1



Task Details

ID 8f817505-b600-4c70-98d6-...  
Name render-241-250  
Status **completed**  
Assigned To fsiddi-macpro-24810.local

Commands

```
blender-render... { "args": [ "--render-ou  
"/Users/fsiddi/Desktop/N  
06_114115_intermediate-  
"--render-format", "PNG"  
"241..250" ], "argsBefore  
{jobs}/my_cube-w1w6/my_c  
"{blender}" }
```

Job Settings Metadata Details

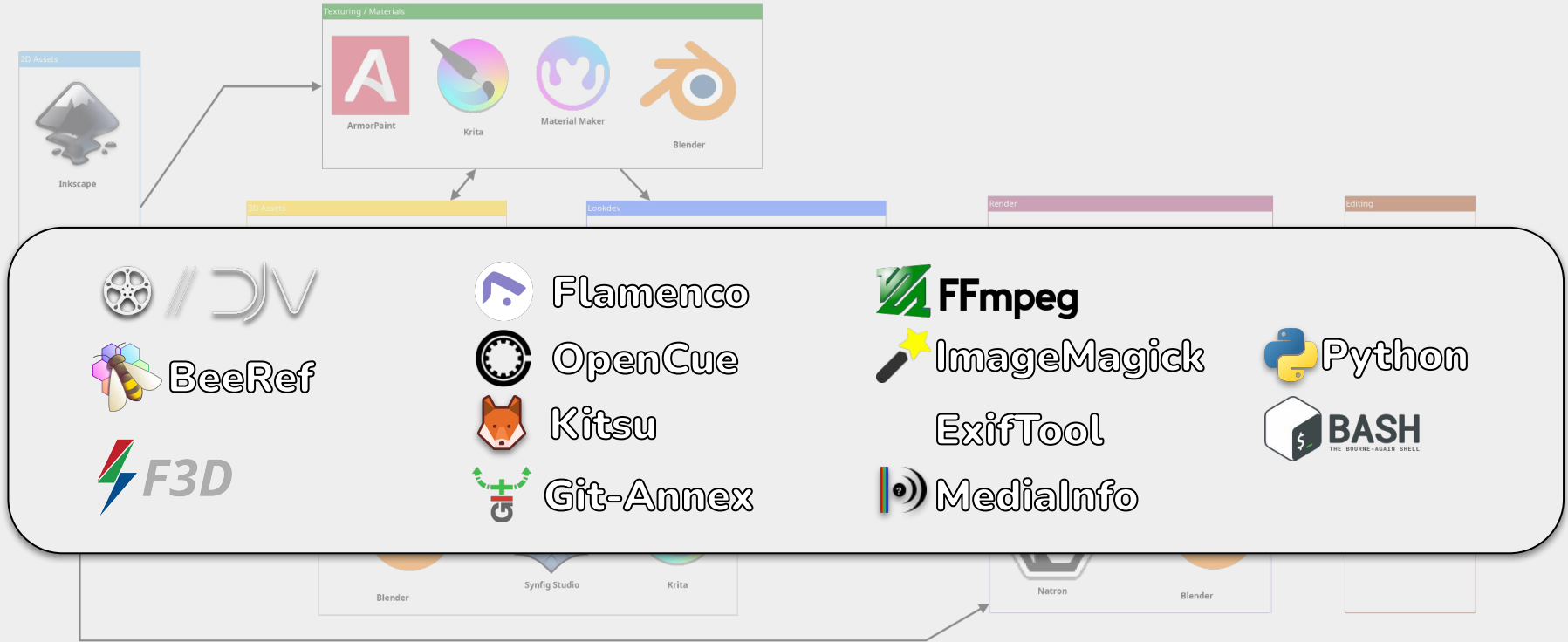
```
blendfile {jobs}/my_cube-w1w6/my_cube.flamenco.blend  
format PNG  
frames 1-250  
render_outpu... /Users/fsiddi/Desktop/New Folder/my_cube/2022-07-  
06_114115/#####
```

Tasks

Cancel Task Queue

Status	Name	Updated
completed	move-to-final	1 day ago
completed	preview-video	1 day ago
completed	render-241-250	1 day ago
completed	render-231-240	1 day ago
completed	render-221-230	1 day ago
completed	render-211-220	1 day ago
completed	render-201-210	1 day ago

# Kleine Helfer



**Da ist noch mehr... viel mehr.**

# https://vfxplatform.com

## Reference Platform


Each annual reference platform is designated by the calendar year in which major product releases should be targeting that particular reference.

All versions should be considered exact required versions, except for those components where ↓↑ indicates that:

- for systems (or software) providing the library at runtime, versions should be considered *minimum version required*.
- otherwise, for software building software against the library, versions should be considered *highest version allowed*.

		CY2025 (DRAFT)	CY2024	CY2023	CY2022	CY2021	
Linux	gcc ↓↑	11.2.1 <small>(New libstdc++ ABI) (see notes)</small>	11.2.1 <small>(New libstdc++ ABI) (see notes)</small>	11.2.1 <small>(Switch to new libstdc++ ABI) (see notes)</small>	9.3.1 <small>(see notes)</small>	9.3.1 <small>(see notes)</small>	
	glibc ↓↑	2.28	2.28	2.28	2.17	2.17	
macOS	Minimum Deployment Target	12.0 <small>(see notes)</small>	11.0 <small>(see notes)</small>	11.0 <small>(see notes)</small>	10.15 <small>(see notes)</small>	10.13 <small>(see notes)</small>	
Windows	Minimum Platform Toolset	Visual Studio 2022 v17.4 or later	Visual Studio 2022 v17.4 or later	Visual Studio 2022	Visual Studio 2019 v16.9 or later	Visual Studio 2017	
	Windows SDK	10.0.19041 or later	10.0.19041 or later	10.0.19041 or later	10.0.19041 or later	v10	
Common Components	Python	3.12.x	3.11.x	3.10.x	3.9.1 - 3.9.latest	3.7.x <small>(see notes)</small>	
	Qt	6.5.x	6.5.x	5.15.x <small>(6.5 planned for CY2024)</small>	5.15.x	5.15.x	
	PyQt	6.5.x	6.5.x	5.15	5.15	5.15	
	Qt for Python (PySide)	6.5.x	6.5.x	5.15	5.15	5.15	
	NumPy	1.26.x	1.24.x	1.23.x	1.20.x	1.19.x	
	OpenEXR	3.3.x <small>(If released by Sept 1st)</small>	3.2.x	3.1.x	3.1.x	2.4.x	Earlier Platforms
	Ptex	2.5.x <small>(If released by Sept 1st)</small>	2.4.x	2.4.x	2.4.x	2.3.2	
	OpenSubdiv	3.6.x	3.6.x	3.5.x	3.4.x	3.4.x	
	OpenVDB	12.x <small>(If released by Nov 1st)</small>	11.x	10.x	9.x	8.x	
	Alembic	1.8.x	1.8.x	1.8.x	1.8.x	1.7.x	
	FBX	2020.2 - 2020.latest	2020.2 - 2020.latest	2020.2 - 2020.latest	2020.x	2020.x	
	OpenColorIO	2.4.x <small>(If released by Oct 1st)</small>	2.3.x	2.2.x	2.1.x	2.0.x	
	ACES	2.0 <small>(If released by Sept 1st)</small>	1.3	1.3	1.3	1.2	
	Boost	1.85	1.82	1.80	1.76	1.73	
	oneTBB/TBB ↓↑	2021.x <small>(Move to oneTBB)</small>	2020 Update 3 <small>(Move to oneTBB deferred to CY2025)</small>	2020 Update 3 <small>(Plan to move to oneTBB in CY2024)</small>	2020 Update 3	2020 Update 2 <small>(see notes)</small>	2020 Update 3
oneMKL/MKL	2024 <small>(Move to oneMKL)</small>	2020 <small>(Move to oneMKL deferred to CY2025)</small>	2020 <small>(Plan to move to oneMKL in CY2024)</small>	2020	2020		
C++ API/SDK	C++17	C++17	C++17	C++17	C++17		

# Academy Software Foundation



## Academy Software Foundation

Home for technical activities hosted by the Academy Software Foundation (ASWF).

191 followers <https://www.aswf.io> [@AcademySwf](#) [info@aswf.io](mailto:info@aswf.io)

Follow

README · id

# ASWF / \* ACADEMY SOFTWARE FOUNDATION


The mission of the Academy Software Foundation (ASWF) is to increase the quality and quantity of contributions to the content creation industry's open source software base; to provide a neutral forum to coordinate cross-project efforts; to provide a common build and test infrastructure, and to provide individuals and organizations a clear path to participation in advancing our open source ecosystem.

This organization contains the repositories for the core Academy Software Foundation and many of the hosted projects and working groups. Below is the list of core Academy Software Foundation repositories hosted here.

- [foundation](#), which contains materials on the Academy Software Foundation itself including the charter, policies, overview decks, and program materials.
- [tac](#) is the home of the TAC processes, policies, programs, and meeting minutes. You can most easily view these materials at [tac.aswf.io](#).
- [artwork](#) contains artwork for the Academy Software Foundation, its hosted projects and working groups, and other programs hosted. You can most easily view these assets at [artwork.aswf.io](#).
- [aswf-landscape](#) is the source for the Academy Software Foundation Landscape and where you can suggest changes and new entries. You can view the landscape at [landscape.aswf.io](#)
- [aswf-sample-project](#) is a template for using when starting a new project at the Academy Software Foundation.
- [aswf-sample-wg](#) is a template for using when starting a new working group at the Academy Software Foundation.

Learn about all the hosted projects and working groups and how to get involved at [tac.aswf.io/engagement](#)

### People



### Top languages

- C++
- Python
- HTML
- Shell
- CSS

### Most used topics

- vsx
- aswf
- computer-graphics
- c-plus-plus
- image-processing

Report abuse

### Pinned

**tac** Public  
Materials and meeting notes for the ASWF Technical Advisory Council.  
10K  
HTML · 30 · 30

**artwork** Public  
ASWF related logos and artwork.  
HTML · 10 · 9

**foundation** Public  
Academy Software Foundation foundation level resources, such as the charter, FAQ about the project, and other public assets.  
Python · 19 · 2

**aswf-landscape** Public  
Landscape for popular open source projects used in the motion picture industry. This interactive landscape similar to that of the CNCI Landscape (<http://cnci.org>) that sorts through popular open...  
120 · 25

**aswf-sample-project** Public template  
ASWF Sample Project.  
CMake · 14 · 7

**aswf-sample-wg** Public template  
Repository template for a working group.  
5 · 3

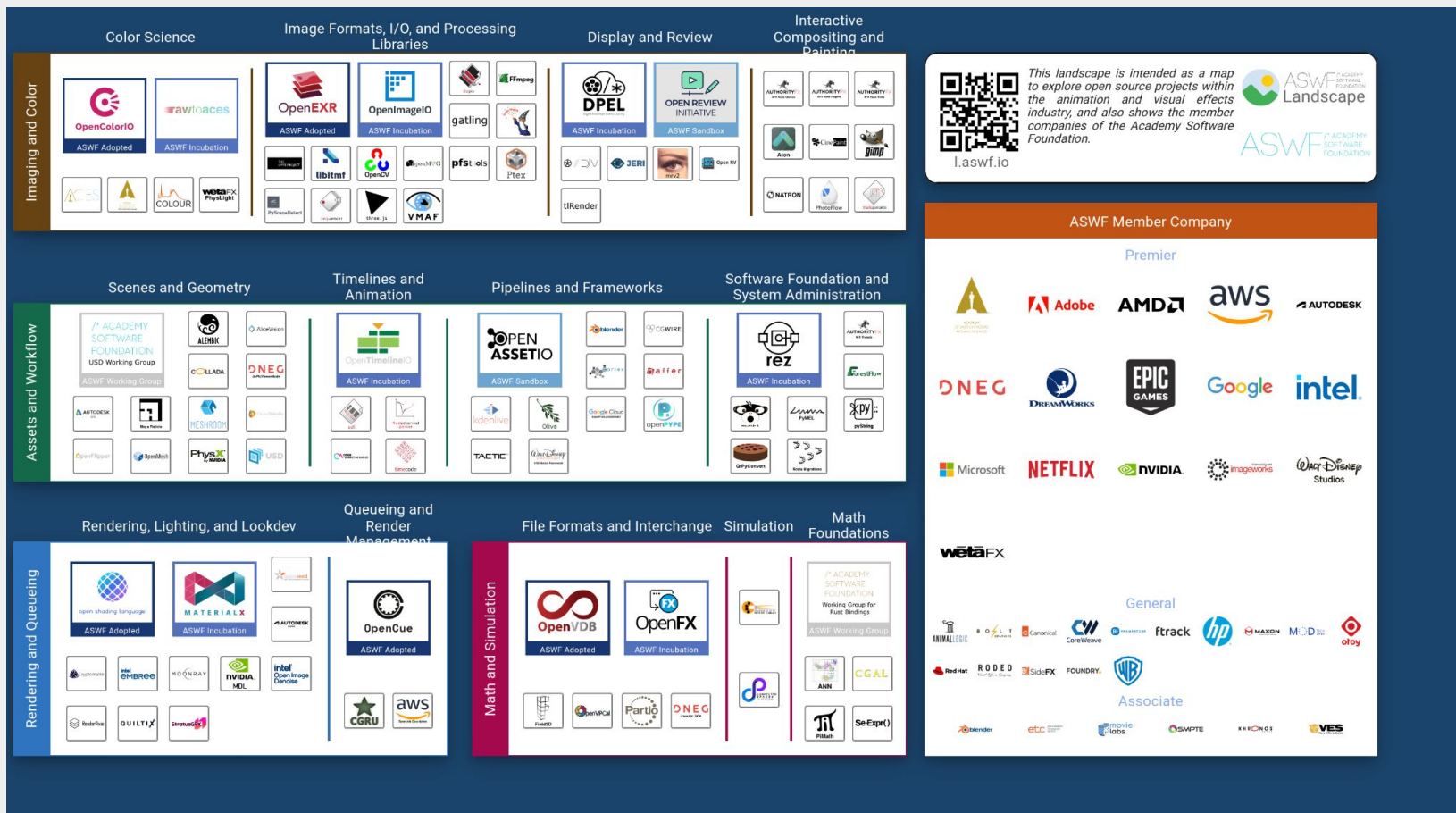
### Repositories

Find a repository...

Type - Language - Sort -

**MaterialIX** Public  
MaterialIX is an open standard for the exchange of rich material and look-development content across applications and renderers.  
C++ · 1,766 · Apache 2.0 · 324 · 114 (6 issues need help) · 17 · Updated 5 hours ago

# Academy Software Foundation



This landscape is intended as a map to explore open source projects within the animation and visual effects industry, and also shows the member companies of the Academy Software Foundation.

ASWF Landscape

l.aswf.io

- ASWF Member Company**
- Premier
- Autodesk
  - AMD
  - AWS
  - Adobe
  - Intel
  - Google
  - Microsoft
  - Netflix
  - NVIDIA
  - Disney
  - Walt Disney Studios
- General
- Animal Logic
  - Canonical
  - CoreWeave
  - ftrack
  - HP
  - Maxon
  - Modo
  - Otoy
  - Rodent
  - Rodeo
  - SolidFX
  - Foundry
  - HP
  - SeExpr
- Associate
- Blender
  - ETC
  - MovieLabs
  - SWPTE
  - XXXXXX
  - YES

**Ein paar Worte auf den Weg**

**Danke!**

<https://fospipeline.psykon.net>

