



# FOSS In Animation Industry

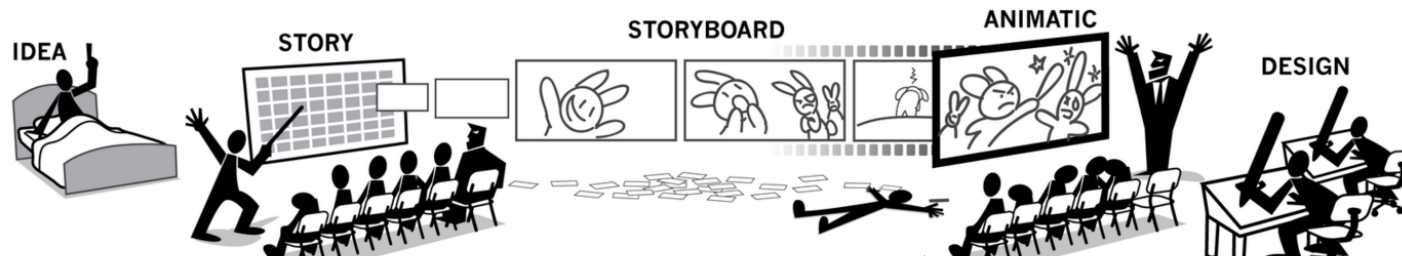
## About me

Hello, my name is Frank Rousseau

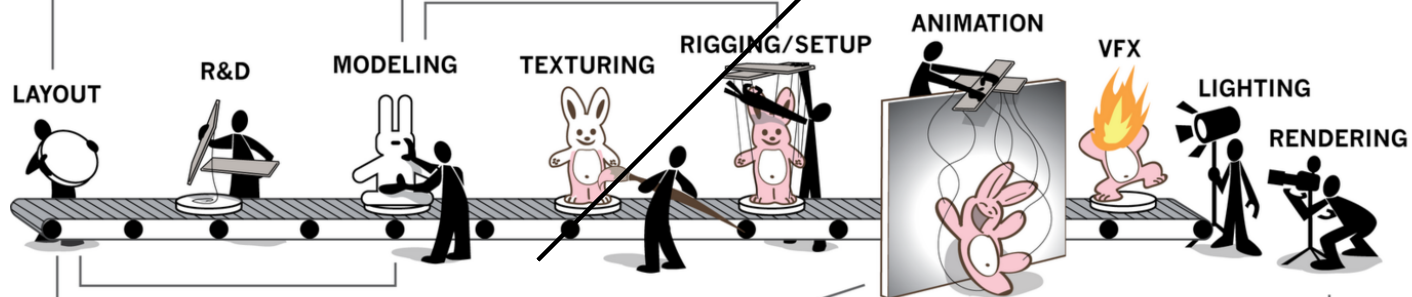
- FOSS Entrepreneur (CEO at CGWire, Ex-CTO at Cozy)
- FOSS Side-projects (Newebe, request-json)
- FOSS Contributor (Open Food Facts, Diaspora)
- 15 years of professional activity
- 7 of them in Animation industry

# 3D Production Pipeline

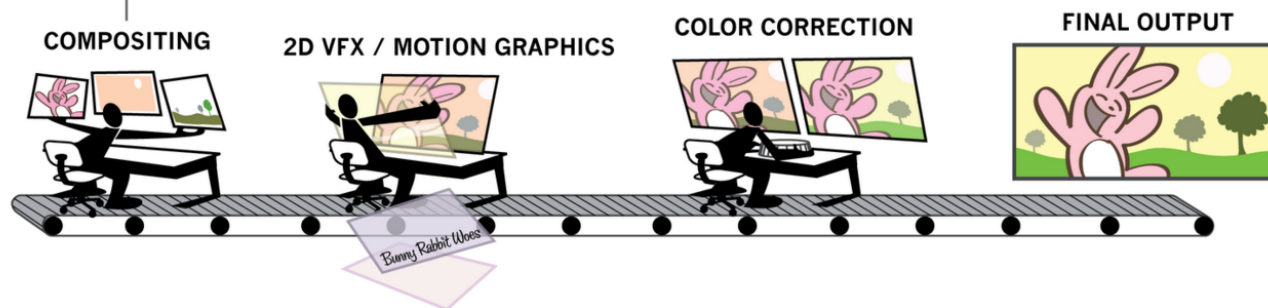
## PRE-PRODUCTION



## PRODUCTION



## POST-PRODUCTION



## **Animation industry has a proprietary mindset**

- Strong notion of IP (Pictures must not leak, they "belong" to producers)
- Leaders : Autodesk, The Foundry, Adobe, Toonboom
- Challengers : SideFX



## **Reality doesn't fit with a proprietary mindset**

- Need to reduce costs
- Complexity of productions increase
- Need for stronger automatization
- Lack of developers
- Artistic singularity is enough to stand out



## **Big players need more interoperability**

- They stick to proprietary DCCs (Digital Content Creation tools)
- Productions are distributed among several studios
- There are more different software involved
- Need to standardize working and output files
- Need for maintenance of libraries used to manage these formats

## **File formats**

- Alembic (.abc) - Animations
- Universal Scene description (.usd) - Scenes
- OpentimelineIO (.otio) - Timeline
- OpenColorIO (.ocio) - Color parameters
- OpenEXR (.exr) - HDR Pictures
- OpenVDB - (.vdb) - FX



## OpenCue

- Render Farm / Job Queue Manager
- Developed at Sony
- Acquired by Google
- Open sourced
- Maintained by ASWF

# ASWF /\* ACADEMY SOFTWARE FOUNDATION

Big studios, Google Amazon, Microsoft,  
Intel, NVidia, Autodesk, The Foundry, Epic  
Games, Blender, Linux Foundation



## **Epic Games**

- Unreal Engine
- Not really used in production
- Epic MegaGrants: lot of money given to open source projects



**Let's talk about  
Free Software!**



# Python is King

- All major tools have their scripting language
- They are now replaced with Python
- Pipeline tooling is built on top of Python



## **Widely used tools**

- FFmpeg, video processing
- Rez, a packaging system to deploy tools and config on many desktop machines
- OpenImageIO / Image Magick, image processing

## **Culture of self hosting (performances and confidentiality)**

- Sysops tooling
- Linux (easier to build a pipeline upon)
- Communication tools: Mattermost, Riot, etc.





## Blender is queen

- Very active community
- Last version (2.8) got many improvements
- Many Contributions from big companies (Epic Games, Intel, Ubisoft)





## Blender makes user happy

- Becoming the default for TV-Series
- Full productions done with it
- *I lost My Body* is nominated to Oscars, Best Movie at Annecy Festival





## **Gimp**

- Not a good reputation (because of the UI)
- Used on some productions

## **Krita**

- People love it (Because of the UI)
- Good funding
- Used on some productions, adoption should go better

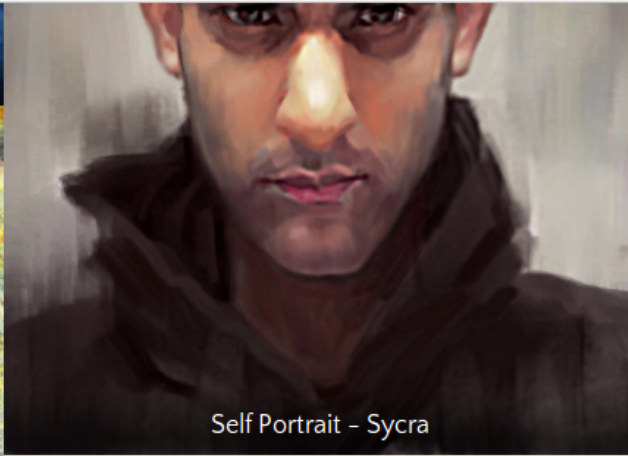
## **Natron**

- The maintainers left
- The only FOSS alternative to Nuke (Compositing)

Girl to protect the sleep - ComamitsuZaki (猫蜜ザキ)



Healing Hearts - Enrico Guarnieri



Self Portrait - Sycra



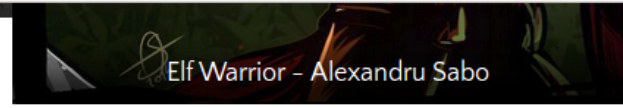
Wasteland(Magic) - Kateryna Herasymenko



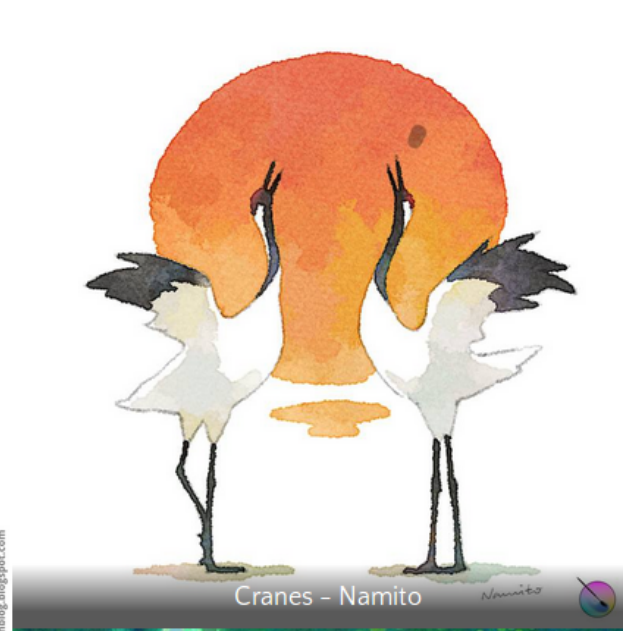
Les Miserable - Tago



Jason S. - Wilson Santos



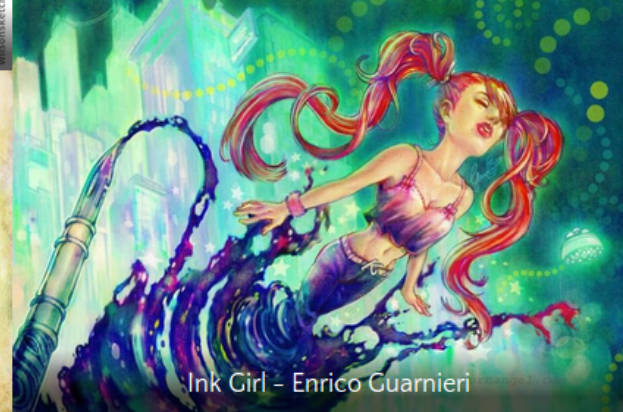
Elf Warrior - Alexandru Sabo



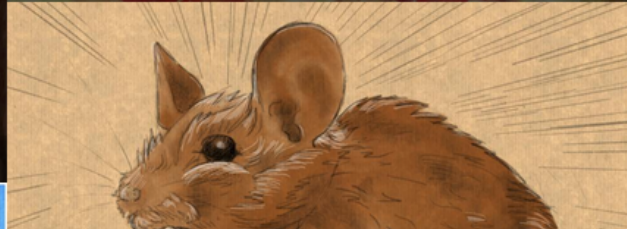
Cranes - Namito



Butterfly Shout - Enrico Guarnieri



Ink Girl - Enrico Guarnieri



mjorn - Jessica Mars

## **Small to mid-size studios opens some tools**

- Mikros -> Alice Vision (photogrammetry)
- Cube Creative -> Jean-Paul Start (software runner)
- Image Engine -> Gaffer (scene assembly)
- Supamonks/Ubisoft Animation -> Kabaret (pipeline)
- TheYardVFX -> Mangrove (pipeline)

## **Freelancers too**

- Avalon (pipeline)
- Prism (pipeline)



- Use almost exclusively Free software
- Blog with best practices
- They open sourced their Blender scripts
- Shared company (SCOOP)



- Project management tool (Web app, Python / JS)
- Self-hostable
- Licensed under AGPL 3.0



# FOSS as an opportunity to bring more collaboration between studios

- Content about pipeline and production management
- Online chat group
- Meetups





## **To conclude**

- Things were bad but gets better
- Big productions are mainly interested by open source for pipeline / automatization
- Small-mid productions are going further
- Free software bring more collaboration between studios
- Blender is life

# Thank you!

- [frank@cg-wire.com](mailto:frank@cg-wire.com)
- <https://github.com/cgwire/awesome-cg-vfx-pipeline>
- <https://landscape.aswf.io/>

Picture Credits: Agent 327/Blender Foundation, Minhaj Khan, Sebastien 1066, Felipe G., La Cabane, Rubiano Basquera, dat\_boi, Iksrkson, TheAlmightyF, GoOz, ARG3d