

**your question: how to
generate visuals for
music?**

**What is generating visuals to
music?**

Why Generate Visuals to Music?

Why Generate Visuals to Music?

- Enhancing Emotional Impact: Visuals can amplify the emotional tone of a piece (e.g., warm colors for joy, chaotic motion for tension).
- Deepening Engagement: Helps audiences connect with music on a visual and intellectual level.
- Creating Immersive Experiences: Blurs the boundary between performer and audience, especially in installations and live events.

when is better not to?

when is better not to?

- Overpowering the Music: If visuals distract from the core musical message.
- Diluting Simplicity: In minimalist or acoustic pieces, adding visuals may clash with the intended purity.
- Technical Constraints: Poorly executed visuals (e.g., low quality, bad synchronization) can reduce the impact of the piece.

What Do Visuals Change in Perception?

- Altered Focus: Directs attention to specific elements, potentially uncovering subtleties or overshadowing details.
- Coloring Interpretation: The choice of visual style (abstract vs. literal) can shape how audiences interpret the music's meaning.
- Temporal Experience: Syncing visuals to tempo and structure changes how we perceive time and rhythm.

where to generate visuals?

where to generate visuals?

- Software for Music Visualization (**TouchDesigner**: Real-time visual generation; **Resolume**: VJing software for live visuals; **vvvv** ..)
- Programming Frameworks (**Processing**: Simple visual programming for artists; **OpenFrameworks**: Advanced programming for creative coding,..)
- Software for computer music with support of basic visual components (**Max/MSP/Jitter**, **pd**, **SuperCollider**,..)
- AI based softwares (Generative Adversarial Networks (**GANs**) for visual interpretation of sound, **Runway ML**, **Midjourney**, **Stable diffusion**,,,)
- Game engines (**Unity** with VFX Graph, **Unreal Engine**,..)
- 3D Modelling/animation softwares (**Blender**, **Cinema 4D**, ...)
- Video editing, graphic software (**Adobe Premiere** and **After Effects** etc, **DaVinci Resolve** with Fusion, ...)

**Software's target use
according to its affordances
and constraints**

Software Paradigms and Examples for Generating Visuals

Software Paradigms

1. Real-Time Visual Generation - Visuals are dynamically generated and adapted to live input from music or audio signals. - TD, Resolume.
2. Pre-Rendered Visualization- Visuals are created beforehand, synchronized to pre-recorded music for polished outputs. - AE, Blender
3. Generative and Algorithmic Art - Visuals are generated based on algorithms reacting to sound parameters like frequency, amplitude, or tempo. (processing, p5.js)
4. Audio-Driven Data Visualization - Translates music or sound into abstract visual data representations.(vvvv, Max/MSP)

Software Paradigms

5. AI and Machine Learning - Leverages neural networks or AI to interpret sound and generate visuals based on learned patterns.- (Runway ML, DeepDream).

6. Augmented and Virtual Reality - Visuals are integrated into immersive environments, reacting to music. (Unity, UE)

7. Hybrid systems - Combines multiple approaches for unique, tailored outputs (e.g., real-time + pre-rendered).(Notch)

Examples

TD: <https://www.youtube.com/watch?v=gtP1Ae35RqY>

<https://www.youtube.com/watch?v=VAqvZENdOdU>

<https://www.youtube.com/watch?v=4H62H9HukC4>

<https://darienbritto.com/portfolio/strangeattractors/>

Resolume: <https://www.youtube.com/watch?v=Stk9YiHqs9E>

ML: <https://www.youtube.com/watch?v=I-EIVIHvHRM>

Max/MSP: <https://www.youtube.com/watch?v=23CfKNpUSlc>

pd: <https://www.youtube.com/watch?v=qYe-haKvv8w>

How to start

Step 1: Analyze the music for key elements (tempo, mood, structure).

Step 2: Select tools based on the project (TouchDesigner, Processing, Resolume, pd, Max/MSP).

Step 3: Experiment with visual mappings and refine synchronization.

Mapping Sound to Visuals

Frequency -> Color

Amplitude -> Size or Brightness

Tempo -> Motion

Real-World Applications

Live performances (e.g., VJing and music concerts).

Interactive installations.

Education and therapy (e.g., engaging with music through visuals).

Challenges:

Synchronization issues.

Balancing artistic intention with technical constraints.

LOOK AT ALL THE

DOCUMENTATION I'M MISSING

makeameme.org

**documentation of
your artworks**

why should you document your artworks?

- portfolio
- process + legacy
- communicating with audience/collaborators
- grant applications/publications/exhibitions

Types of Documentation for Artworks

- Conceptual Documentation
- Process Documentation
- Final Presentation Documentation
- Reflective Documentation

Tools and Techniques

- Text and Data Management Tools
- Photo and Video
- Audio Recording
- Screen Recording
- Interactive Media Documentation

Best Practices for Effective Documentation

- Quality Matters (use prof.tools, ensure proper lighting, framing, and audio clarity)
- Metadata and Organization (dates/places/tech.details; cloud services)
- Contextualize Your Work (captions, artist statements; your intentions and the impact of your work)

Hands-On Exercise

Select one of your own artworks and plan a documentation strategy:

- What tools and formats will you use?
- Which aspects of the artwork need to be documented?
- How will you ensure accessibility and longevity of the documentation?

Examples of Documentation

1. Alexander Schubert:

- Unity Switch http://www.alexanderschubert.net/works/Unity_Switch.php

2. Laurie Anderson :

- Chalkroom <https://www.youtube.com/watch?v=zHT016FbR30> , https://www.youtube.com/watch?v=n0_0k-Xwksw

3. Janet Cardiff + George Bures Miller :

- The forty-part motet <https://www.youtube.com/watch?v=rZXBia5kuqY> , <https://www.youtube.com/watch?v=38ORiaia9r8>

4. Ryoji Ikeda:

- the Radar <https://www.youtube.com/watch?v=TU140hHeb4A>

Documentation phases

- Pre-production
- Production
- Post-production

Documentation phases (1)

Pre-production:

- Define Objectives (for archival purposes, promotion, grant applications, or educational materials) and Audience
- Conceptual Planning (script/storyboard, tech.rider)
- Location Scouting and Preparation (venue, background and staging)
- Equipment Checklist (Audio, video, lighting, other)
- Technical Rehearsals (test, experiment, coordinate)

We've lost the
snare in that mic



**OPEN THE
GATE!**



We're getting kick
in that snare mic



**CLOSE THE
GATE**



We lost the
snare again



**OPEN THE GATE
A LITTLE**



Documentation phases (2)

Production:

- Audio Recording (direct inputs, ambience/spatial)
- Video Recording (Framing and Composition, Motion and Pacing)
- Lighting Adjustments
- Live Synchronization
- Backup Strategy



Documentation phases (3)

Post-Production:

- Editing Workflow: organize files, create backups; audio editing (match video perspectives); video editing (multicam, transitions); color grading (consistency),
- syncing A & V
- Enhance interactivity (overlay annotations, split-screen)
- final outputs : formats, interactive documentation
- quality check and review

What "fixing it in post"
mostly looks like



one man band

Production:

Preproduction:

- be compact
- plan every possible detail for documentation in advance
- list your equipment
- automate and delegate tasks
- do a tech.rehearsal (film your rehearsal, checks)

- simplify
- optimize self-recording, make a backup
- sync devices automatically

Post-production:

- organize files (naming, folders by type)
- copy in several places
- annotate

EVERYONE ELSE IS ASLEEP



**AND I'M JUST SITTING
HERE RENDERING**

choosing equipment

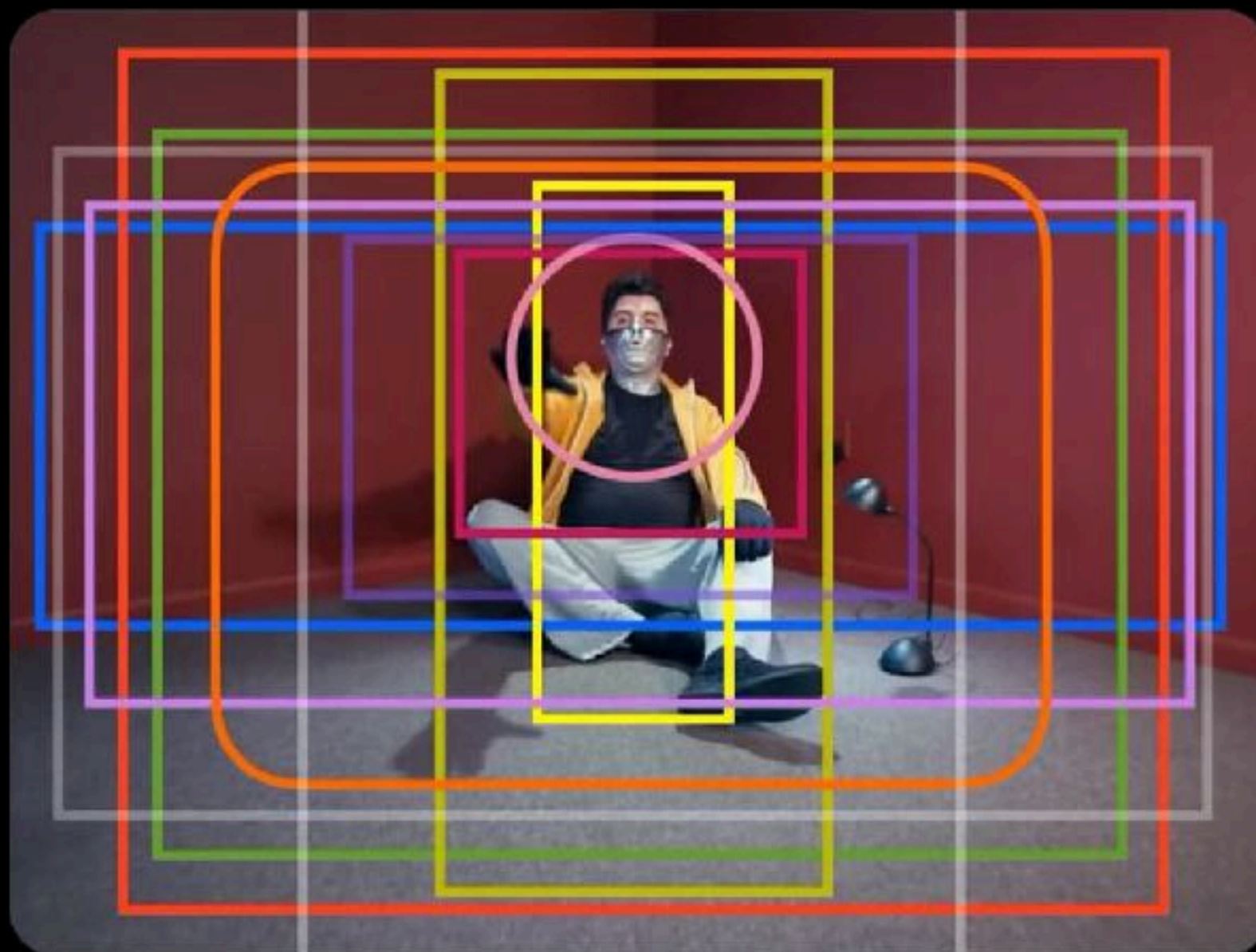
- Define Project Requirements (Performance Type, Environment, Media, Audience Interaction, Output Goals)
- Choose Equipment by Priority (audio vs video vs interactivity/ar/vr)
- Match the Environment (indoor vs outdoor)
- plan for ease of use (automation/remote control, portability)



Captain Disillusion @CDisillusion · 10h



To make sure my content is compatible with all web platforms and broadcast standards, I shoot at 18K resolution with an 80% action-safe margin on all sides.



233



1.6K



32K



601K



what vs how to document?

	what	how
Pre-Performance Setup		
Performer and Audience Interaction		
Artistic Elements		
Climax and Key Moments		
Post-Performance Reflection		

what vs how to document?

	what	how
Pre-Performance Setup	The stage layout, including equipment; Calibration of interactive systems ; Performers preparing.	
Performer and Audience Interaction	Performers using live electronics or instruments; interactive systems' response, audience reactions	
Artistic Elements	Visuals, soundscapes, spatial layout (performance in the venue)	
Climax and Key Moments	Synchronized moments, dramatic points	
Post-Performance Reflection	Performers discussing, audience feedback, Behind-the-scenes	

what vs how to document?

	what	how
Pre-Performance Setup	The stage layout, including equipment; Calibration of interactive systems ; Performers preparing.	wide-angle video, photos of technical details, brief interviews with the team
Performer and Audience Interaction	Performers using live electronics or instruments; interactive systems' response, audience reactions	dynamic close-ups; screen-capture ; mic/cam near the audience
Artistic Elements	Visuals, soundscapes, spatial layout (performance in the venue)	wide-angle for vis; isolated audio channels to further mix; drone?
Climax and Key Moments	Synchronized moments, dramatic points	multiple cam, record reactions
Post-Performance Reflection	Performers discussing, audience feedback, Behind-the-scenes	short interviews (handheld), informal conversations

with or without audience?

- With Audience:

Best for capturing the authentic, live experience of the piece.

Suitable for performances where audience interaction is integral to the work.

- Without Audience:

Best for creating polished, detailed documentation that prioritizes technical quality and aesthetic control.

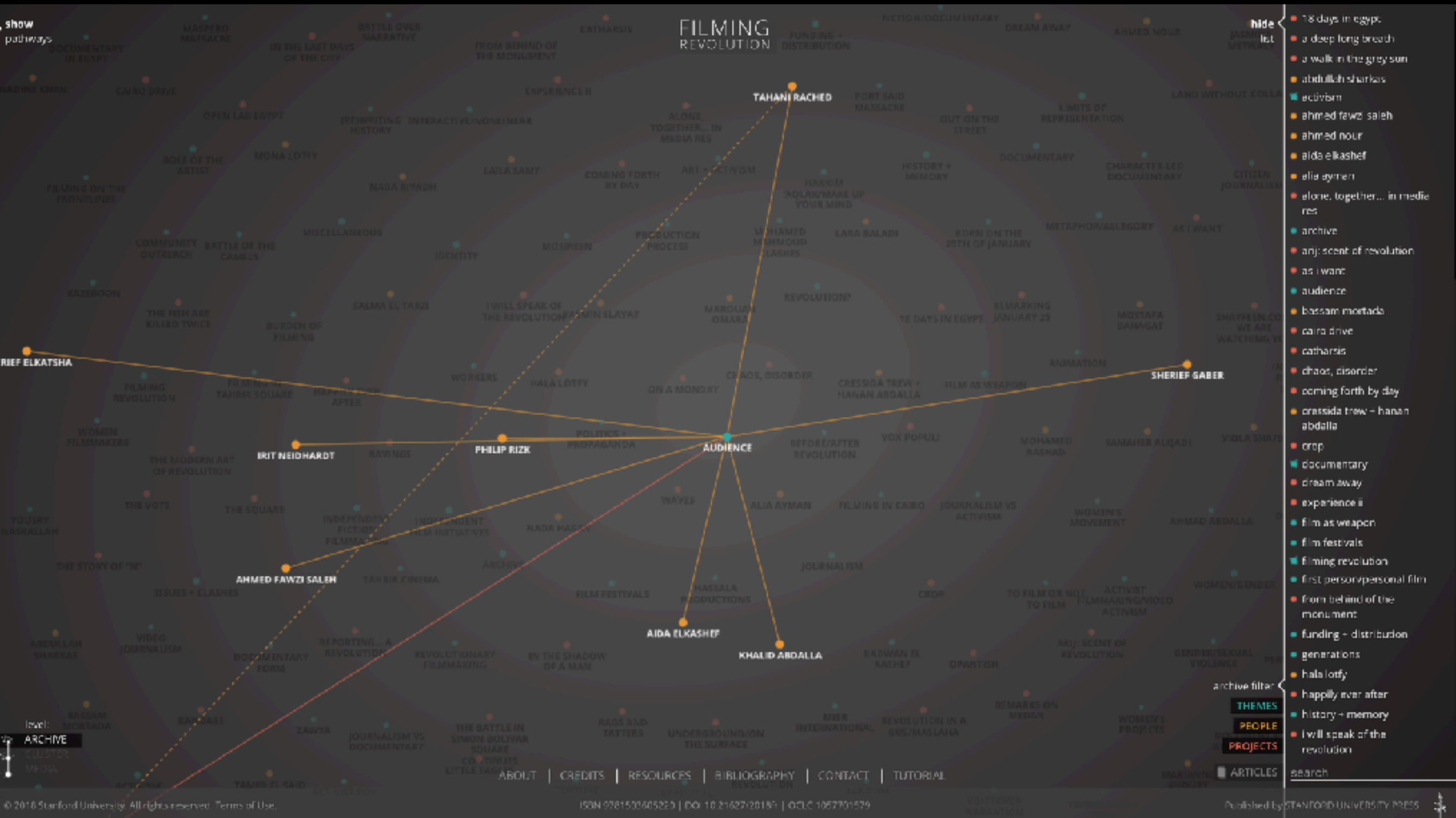
Ideal for promotional videos, archival purposes, or when audience reactions are not central to the piece.

- Combined

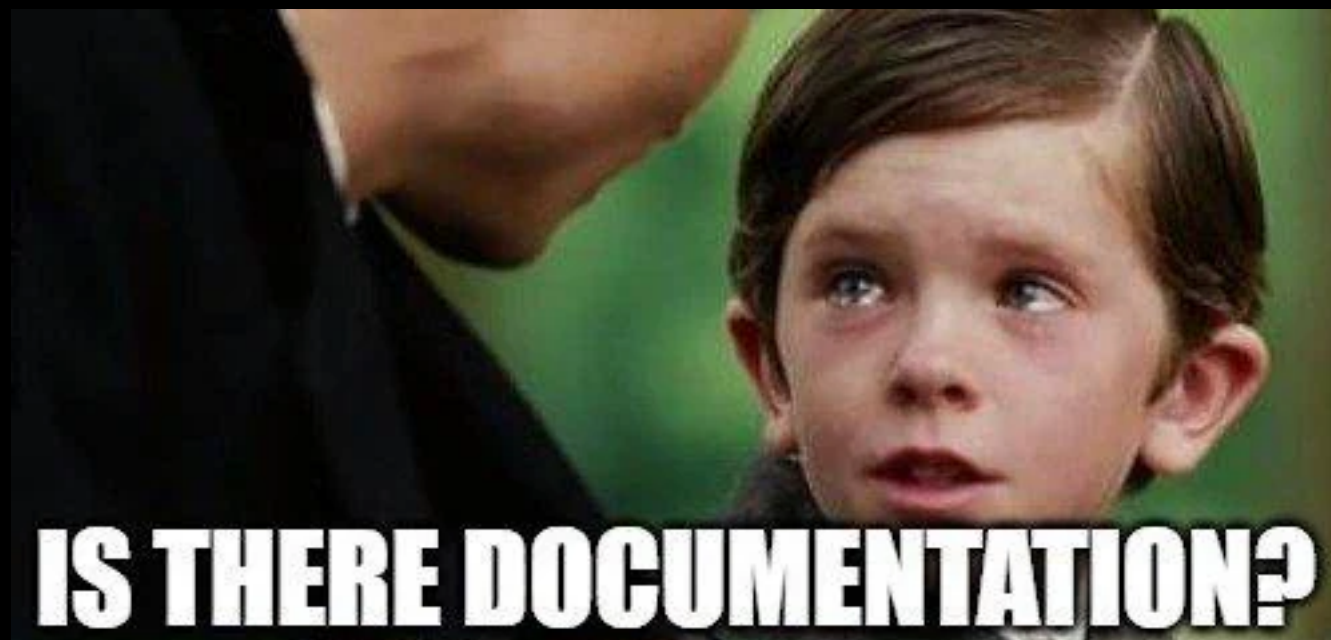
Key Takeaways for Your Own Documentation

- Use Accessible Platforms (websites, social media)
- Integrate the Creative Process (behind the scenes etc.)
- Leverage Multimodal Media (video, audio, interactive content)
- Plan Collaborations If Possible (outsource at least videography or editing)

ideas: interactive documentary



<https://filmingrevolution.supdigital.org/>



**always rely on
yourself first,
then - on venue**