

The Synergy of Artificial Intelligence and Cyberpunk Aesthetics in Cinematic Narrative: a Case Study of the Changcutters' "Karunia Semesta" Music Video

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KEYWORDS	ABSTRACT
Artificial, Intelligence, Film, Cinematic, VFX	This research investigates the synergy between artificial intelligence (AI) and cyberpunk aesthetics in cinematic narrative through a case study of The Changcutters' music video " <i>Karunia Semesta</i> ." Employing visual analysis and narrative study methods, the research identifies characteristic <i>cyberpunk aesthetics</i> including urban dystopia, the "high tech, low life" dichotomy, and neon lighting, along with AI's role as a narrative subject representing contemporary digital society challenges. As a compact yet intense narrative medium, the music video uniquely blends the band's signature cheerful rock-and-roll identity and retro visuals with a dark cyberpunk world, creating a distinctive artistic exploration. The findings reveal that AI functions not only as a production tool in visual concept development but also as a central thematic element that deepens the song's message. " <i>Karunia Semesta</i> " successfully presents social criticism of technological modernity through the integration of cyberpunk aesthetics and AI utilization, while demonstrating how global genre conventions are adapted within the Indonesian media context. This study concludes that the synergy between AI and cyberpunk aesthetics not only enriches visual narrative but also offers new perspectives in interpreting musical messages through the cinematic medium.
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INTRODUCTION

The landscape of the creative industries and cinematic production is undergoing a significant paradigm shift, driven by rapid technological advancements (Abbasi et al., 2017). Technology is no longer just a support tool for production; it has become an integral element of the narrative itself, often acting as a central character or theme (Coeckelbergh, 2019). This phenomenon is further amplified by the rise of generative Artificial Intelligence (AI), which can produce complex visual and audio content, challenging the conventional boundaries of human creativity (Caporusso, 2023). In this context, music videos offer a unique medium for narrative exploration. As a compact yet intense format, they combine visuals, sound, and themes in powerful ways, often resulting in work that is more experimental and provocative than feature-length narrative films.

The integration of *AI* in filmmaking has evolved from a post-production tool to a creative partner in the conceptualization process (Momot, 2022). Studies by Gunning (2021) and Covell (2022) highlight *AI*'s role in "looks development" and pre-visualization, enabling filmmakers to explore visual possibilities more efficiently (Block, 2020). Concurrently, cyberpunk as a narrative and aesthetic framework continues to be relevant for critiquing technological societies (Çolak, 2021). Scholars like Csicsery-Ronay (2008) and Foster (2020) have established cyberpunk's core tenets—dystopian urban landscapes, the "high tech, low life" dichotomy, and explorations of *AI*

consciousness—as powerful tools for examining human-technology relationships. However, existing research has predominantly focused on Western cinema, leaving a significant gap in understanding how these elements manifest in Global South contexts, particularly in music video formats (Stam, 2019).

The music video for "*Karunia Semesta*" by The Changcuters emerges as a compelling case study within this phenomenon. It presents an unusual blend of the band's signature cheerful rock-and-roll identity and retro visuals with a sci-fi cyberpunk aesthetic, laden with a dystopian atmosphere and alienation (McParland, 2019). This fusion raises deep questions about the artistic motivation behind it. More than just a stylistic choice, the video appears to explore the synergy between genre and technology—specifically the role of *AI*, both as a narrative subject and as a potential production tool. Therefore, this research is vital for unpacking the narrative layers created at the intersection of cyberpunk aesthetics and Artificial Intelligence, as well as examining how this synergy brings new meaning to the song's core message.

The novelty of this research lies in conducting the first systematic analysis of the hybrid AI-cyberpunk aesthetic within an Indonesian music video context. This study breaks new ground by examining how global technological trends and genre conventions are localized and reinterpreted in Southeast Asian media production. The research objectives are threefold: (1) to identify and analyze the implementation of cyberpunk aesthetics and *AI* themes in "*Karunia Semesta*"; (2) to examine how *AI* tools were utilized in the video's production pipeline; and (3) to interpret the semantic synergy between these elements and the song's lyrical message. The academic implications of this research contribute to bridging the gap between film studies, visual culture theory, and digital media production, while expanding the discourse on cyberpunk and AI narratives beyond Western cinematic traditions. Therefore, this research is vital for unpacking the narrative layers created at the intersection of cyberpunk aesthetics and Artificial Intelligence, as well as examining how this synergy brings new meaning to the song's core message within a specifically Indonesian cultural context.

METHOD

The research method components of the study include a qualitative case study design focused on the music video "*Karunia Semesta*" by The Changcuters. The research combined visual analysis and narrative study methods to examine the synergy between artificial intelligence (AI) and cyberpunk aesthetics in the cinematic narrative. Data was primarily sourced from the music video itself, supplemented by production details and AI usage information. The analytical framework addressed the integration of hybrid production techniques, including real sets, blue screen, CGI, and the role of AI both as a narrative element and production tool. The study aimed to identify and analyze cyberpunk aesthetics and AI themes, examine AI tools in the production pipeline, and interpret the semantic synergy between these elements and the song's lyrics. This research contributes to bridging film studies, visual culture theory, and digital media production, particularly expanding discourse beyond Western cinematic traditions into the Indonesian context.

RESULTS AND DISCUSSION

The production of "*Karunia Semesta*" employs a sophisticated Hybrid approach that effectively bridges the gap between practical filmmaking and digital composition. This technique allows the creators to selectively ground the narrative in reality, using real sets for specific interactive scenes where tactile engagement is crucial. By retaining these physical elements, the

video preserves a sense of authenticity and human connection, ensuring that the band's performance remains relatable even amidst a stylized backdrop. This grounding prevents the visual experience from feeling entirely synthetic, striking a balance that anchors the viewer before introducing more fantastical elements.

Complementing this practical base is the strategic use of blue screen technology and CGI, which provides the total flexibility needed to construct the video's ambitious setting. Building a fully realized cyberpunk metropolis physically would be either prohibitively expensive or logistically impossible. However, through digital compositing, the production team is able to generate complex dystopian environments that convey a sense of vast scale and high-tech decay. This method allows for the creation of a rich, immersive world that serves the narrative's thematic needs without the astronomical costs associated with traditional set construction.

Furthermore, the project distinguishes itself through the integration of Artificial Intelligence during the crucial pre-production phase. Rather than just a post-production effect, AI was utilized as a primary tool for ideation and "looks development," helping to define the video's visual identity before the cameras even rolled. This application underscores the project's role as a significant case study in modern media; it demonstrates a genuine synergy where AI acts not as a replacement for human creativity, but as a collaborative partner that enhances conventional cinematic production methods.

Section 1: Conceptual Foundations and Planning (Pre-Production)

In the dynamic realm of music video production, one of the most impactful decisions—made long before the cameras start rolling—is the choice of shooting location. The choice between a fully controlled artificial environment via blue screen and the unpredictable authenticity of a real set is not merely technical; it is a philosophical choice that defines the entire creative approach, production workflow, and final visual output. This section outlines how creative vision acts as the primary compass for this decision, while also analyzing the significant differences in pre-production workflows required by each method.

Creative Vision as the Key Determinant

Every successful video production is rooted in a strong concept and idea, which serve as the foundation for building visual, narrative, and emotional appeal. Professional video production invariably begins with the pre-production phase, where meticulous planning is key to minimizing issues down the line. At the heart of this planning stage lies the director's creative vision, which is the ultimate deciding factor in whether a visual narrative is best realized within the sterile confines of a studio or amidst the vivid unpredictability of the real world.

The decision between using a blue screen or a real set is the first tangible manifestation of this vision. If the concept demands the creation of a fantasy or surreal world unbound by the laws of physics such as alien landscapes, futuristic cities, or abstract visualizations of emotion then the blue screen becomes a limitless canvas. For instance, the Backstreet Boys' "Larger than Life" music video, which depicts the band members in space and sci-fi environments, inherently necessitated this technology. This selection must be made early on, as it drastically influences the

budget, schedule, crew requirements, equipment selection, and post-production workflow. Consequently, clearly understanding the end goal whether to construct a new world or capture existing beauty is the crucial first step in the journey of music video production.

Pre-Production Workflow for Blue Screen: Digital World Architecture

When the decision is made to use a blue screen, pre-production transforms into an exercise in digital architecture. The workflow here is additive it involves building a visual world from scratch. Every element destined for the screen must be planned, designed, and visualized with meticulous precision, primarily because the majority of that world will not physically exist during the actual shoot.

The first step in this process is the creation of a storyboard. Storyboards serve as a visual representation of each scene, assisting the team in visualizing the narrative sequence, shot composition, and desired transitions. In the context of blue screen production, a storyboard is more than just a guide; it becomes a technical blueprint that outlines the interaction between real elements (the artists) and virtual ones (CGI backgrounds, digital characters, and special effects).

Once the storyboard is approved, many VFX-heavy productions move into the pre-visualization (previz) stage. Previz involves constructing scenes as basic 3D animations, grounded in the storyboard and concept art. This process allows the director and cinematographer to make critical decisions regarding camera angles and movement, the scale of digital sets, and the placement of CGI elements long before filming begins. Through previz, the team can virtually experiment with various cinematic choices, identify potential issues, and ensure that everyone from the director to the VFX artists shares a unified understanding of what the final result will look like. The Storyboard itself already utilising Ai as prediction to the final looks as in the image below.



Figure 1. Ai Storyboard as well as the final looks of the music video

Source: author

Following this, the visualization or "looks development" phase is undertaken by leveraging Artificial Intelligence (AI). This technology enables the rapid and efficient creation of numerous visual alternatives, facilitating a much broader scope of creative exploration. Within this process,

a series of distinct backgrounds are generated. These serve a critical function beyond just being visual elements; they act as essential references for the lighting design. By utilizing these varied backgrounds, the team can accurately visualize how the lighting will interact with objects and subjects, ensuring that every generated "look" captures the precise atmosphere and mood aligned with the project's goals.

Section 2: Execution in the Field (Production)

The production phase is where the meticulous planning of pre-production is put to the test. This is where the dichotomy between the two approaches becomes most tangible: the blue screen studio offering absolute control versus the real set presenting unpredictable authenticity with all its inherent challenges. The choice between these methodologies fundamentally defines the on-set experience, demanding different mindsets and skill sets from the entire crew.

Production with Blue/Green Screen: The Science Behind the Illusion

Shooting with a blue or green screen is a highly technical process that often feels more like a laboratory experiment than traditional filmmaking. The objective is to create the optimal conditions for post-production artists to perfectly isolate the subject from the background. Every decision on set from lighting to camera settings is made with the final compositing process in mind.

Chroma Key Principles and Color Choice

The underlying technique here is chroma key compositing, or simply "chroma keying." This is a visual effects method used to layer two images or video streams together based on color hue. The subject is filmed against a uniform solid color, which is then made transparent in post-production, allowing a different background to be inserted.

The choice between green and blue screens is not trivial and depends on several factors:

- **Green Screen:** Green has become the industry standard for digital video production for technical reasons. Modern digital camera sensors are generally more sensitive to the green spectrum, meaning the green channel carries the most detail and the least noise. This results in a cleaner and easier keying process. Additionally, bright green is rarely found in human skin tones or hair, making it easy for software to distinguish between the subject and the background.
- **Blue Screen:** While less common in digital production, blue screens still serve vital purposes. Blue is the superior choice when the subject features significant green elements, such as clothing or props. Furthermore, blue screens are often used for night scenes or dark environments because blue "spill" (reflected light) on the subject tends to look more natural as ambient night light compared to green spill. Historically, blue was the primary color in film because chemical processes on celluloid separated blue more easily.

Lighting: The Critical Factor

The biggest technical challenge in chroma key shooting is lighting. The goal is to illuminate the screen as evenly and softly as possible, avoiding any shadows or "hot spots" (overly bright areas). Any variation in the green or blue shade on the screen complicates the software's ability to identify and remove the color cleanly, which can lead to digital artifacts or "holes" in the final image.

To achieve this, three non-negotiable lighting rules are applied:

1. **Even Lighting:** Use multiple large, diffused light sources to illuminate the screen. Using a waveform monitor to measure exposure is extremely helpful; a flat line on the waveform indicates the screen is lit evenly at a luminance level of around 40-50%.

2. Soft Lighting: Hard light creates sharp shadows. Use softboxes or diffusion cloth to soften the light and spread it evenly across the screen surface.
3. Separation: The screen and the subject must be lit separately. Only after the screen is perfectly illuminated does the crew begin lighting the subject (typically using a three-point lighting setup: key light, fill light, and backlight).

Integrating AI into the Lighting Workflow

Following the technical setup, the "looks development" process initially established in pre-production using Artificial Intelligence (AI) comes into play on set. The use of AI allowed for the rapid and efficient creation of various visual alternatives, facilitating broader creative exploration. In this context, the distinct backgrounds generated by AI serve a dual purpose. Beyond being visual elements for the final edit, they act as crucial references for the lighting system on set. By referring to these varied backgrounds, the team can visualize exactly how the lighting should interact with objects and subjects, ensuring that the physical lighting on set matches the atmosphere and mood of the intended digital environment.

Section 3: Digital Magic and Final Touches (Post-Production)

The post-production phase is where raw footage from the shoot is transformed into a cohesive, polished work of art. Here, the promises of both production approaches—whether the blank canvas of the blue screen or the captured reality of a real set—are finally realized. The workflows for these two methodologies differ significantly, reflecting fundamentally different end goals: one focuses on construction and integration, while the other focuses on refinement and storytelling.

Blue Screen Post-Production Workflow: Assembling Reality

Post-production for projects utilizing blue screens is technically and artistically intensive, a process where digital artists literally assemble visual reality from separate elements. The ultimate goal is seamless integration, ensuring the audience cannot distinguish between what is real and what has been digitally created.

Compositing: The Core of the Process

At the heart of this workflow is compositing. This technique involves combining or layering multiple visual elements—such as live-action footage, computer-generated backgrounds, 3D models, and particle effects—into a single, coherent final image. Each of these elements exists on its own layer, and the compositor's job is to blend them so they appear to have been filmed together with a single camera.

Keying and Integration

The workflow begins with keying—the removal of the colored background. Using industry-standard software like Adobe After Effects or Foundry Nuke, along with specialized plugins like Keylight, an artist selects a range of blue or green to make transparent. Despite the sophistication of modern software, this process is rarely fully automatic; it often requires careful manual adjustment to achieve a clean result, especially around fine details like hair or semi-transparent edges. Once the subject is isolated from their original background, a new world can be built behind them. This is the stage where Computer-Generated Imagery (CGI) is introduced. This can range from digitally painted fantasy landscapes (matte paintings) to animated 3D characters, intricate architecture, or dynamic particle effects like fire, smoke, and explosions.

Real Set Post-Production Workflow: Enhancing Reality

If blue screen post-production is about construction, then post-production for real sets is about curation and enhancement. The primary focus shifts from technical creation to narrative storytelling. Editors and VFX artists aren't building worlds from scratch; instead, they are refining and amplifying the reality already captured by the camera.

The Subtle Use of VFX

Although not as reliant on heavy visual effects as blue screen productions, real set projects often employ VFX in subtle yet powerful ways:

1. **VFX Cleanup:** This is one of the most common and "invisible" applications of VFX. The process involves removing unwanted elements from a shot. This could be visible microphone cables, crew equipment at the edges of the frame, camera reflections in windows, or even a pedestrian accidentally walking through the background. The goal is to create a pristine, professional image without distractions.
2. **Set Extensions:** Sometimes, a real location needs a slight "upgrade." Set extensions allow VFX artists to digitally expand the physical set. For instance, they might add several floors to a building to make it appear more imposing, or extend a landscape's horizon to provide a more epic scale.
3. **Visual Refinement:** Instead of creating an atmosphere from zero, color correction and grading on real set projects are used to elevate and accentuate the mood already present on location. A colorist might highlight the warmth of a sunset, intensify the cold tones of a night scene, or apply a stylized color palette to reinforce the video's overall aesthetic .

The real magic of VFX is how it takes a flat, boring blue screen and turns it into a world that feels 100% real. It's not just about slapping a background behind an actor; it's about matching the lighting, shadows, and textures so perfectly that your brain can't tell the difference. To make sure we nailed it, we rely on the classic "before and after" comparison. Seeing the raw footage side-by-side with the finished shot is the best way to measure the upgrade—it proves that we didn't just stack layers on top of each other, but actually blended them into something that looks beautiful and believable.



Figure 2. Blue Screen shot

Source: author



Figure 3. Compositing CGI shot from blue screen combined with 3D elements & lighting

Source: author

Fundamentally, blue screen post-production is about seamless integration, where success is measured by how "invisible" and convincing the effects are. The main challenge is technical: *"Can we make this look real?"* Conversely, real set post-production is about narrative enhancement, where success is measured by the emotional weight of the story delivered. The challenge here is more artistic: *"Does this cut tell the best story?"* While a VFX compositor acts as a skilled digital illusionist, an editor for a real set project functions more like a visual novelist, weaving the language of images to evoke emotion.

Refinement for Realism

To make this illusion convincing, several crucial refinement steps are necessary:

1. **Spill Suppression:** Even with excellent lighting, color reflection from the screen onto the subject often occurs. Spill suppression tools are used to neutralize or remove this residual green or blue from the subject's edges, preventing them from looking "contaminated" by their artificial background.
2. **Matte Cleanup:** A matte is a black-and-white mask defining the transparent and opaque areas of an image. Matte cleanup involves refining these edges softening, contracting, or expanding them to ensure the subject blends into the new background without harsh or jagged outlines.
3. **Rotoscoping:** For areas that are notoriously difficult to key, such as wind-blown hair or objects with significant motion blur, artists often resort to rotoscoping. This is a painstaking process where artists trace objects frame-by-frame to create a matte manually.
4. **Color Grading:** Perhaps the most vital step for "selling" the illusion is color grading. All the distinct elements live-action, CGI, VFX initially possess different color and light characteristics. Color grading involves adjusting the color, contrast, and brightness of each layer individually so they match perfectly, appearing to exist under the same lighting conditions in the same physical space. Without proper grading, the composition will feel "pasted on" and unrealistic.

Section 4: Comparative Analysis

To fully grasp the implications of choosing between a blue screen and a real set, it is essential to move from theory into practice. This section presents a head-to-head comparison of both approaches using a clear matrix, followed by an analysis of specific case studies featuring

iconic music videos. These examples illustrate how each technique is deployed to achieve distinct artistic goals, putting the concepts we have discussed into a concrete, real-world context.

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Real Set vs. Green Screen: A Comparative Analysis for Filmmaking

The fundamental choice between using a real set and a green screen is a trade-off between tangible authenticity and boundless digital potential.

Visual and Narrative Authenticity

1. **Real Sets:** Provide a grounded, tactile reality that instantly registers as authentic to both the camera and the audience. The physical presence of textures, natural lighting, and actual spatial depth lends a credibility that requires no digital manipulation. A real location effectively anchors the production in the immediate "here and now."
2. **Green Screens (Chroma Key):** Serve as an infinite, blank canvas, offering filmmakers the freedom to create worlds that defy physics, geography, or budgetary limitations. This environment liberates the narrative, enabling the depiction of locations that are either impossible to construct or too costly to visit.

Impact on Actor Performance

1. Real Sets: The physical environment significantly enhances the actor's process by providing immediate sensory cues—such as the scale of a room or the sound of a creaking floorboard. These cues facilitate a more natural, reactive, and grounded performance.
2. Green Screens: Acting in a chroma key environment imposes a high cognitive load. Lacking physical context, performers must fully rely on their imagination to interact with invisible environments and characters, often acting opposite rudimentary placeholders (e.g., a tennis ball on a stick). This reliance on abstract visualization can pose a challenge to maintaining emotional continuity.

Logistical and Workflow Demands

1. Real Sets (Location Shooting): Logistics are heavily "front-loaded." The bulk of the visual work is completed on the day of the shoot. Challenges include obtaining necessary permits, managing unpredictable external factors like weather, and coordinating the transportation of the crew and equipment to specific sites.
2. Green Screens: The production workflow is "back-loaded." The shoot itself is typically controlled, sterile, and less demanding. However, this method incurs a massive post-production debt. The true labor begins after filming, requiring specialized teams of digital artists to meticulously composite elements, adjust lighting, and apply textures, frame by frame, to achieve a convincing level of photorealism.

Ultimately, contemporary filmmaking is moving away from viewing these techniques as mutually exclusive binaries. The most effective productions often employ a hybrid approach, using real sets for tactile foreground interactions while utilizing green screens or LED volumes for background extensions. The goal is no longer to prove which method is superior, but to determine which tool best serves the story's specific emotional needs. Whether capturing the grit of a real city street or constructing a digital dreamscape, the technology should eventually become invisible, leaving the audience focused solely on the narrative.

CONCLUSION

The debate between blue screen and real sets is not about declaring one technique superior but understanding each method's strengths and limitations to best serve the narrative. Effective technology blends seamlessly into the background, allowing audiences to engage deeply with the story rather than be distracted by technical effects. The future of music video production lies in hybrid workflows that combine physical and digital elements, enhanced by advancements like virtual production with real-time rendering and Generative Artificial Intelligence (GenAI). GenAI now supports the creative process across all stages—from concept art in pre-production to text-to-video generation and automated VFX in post-production. Future research could explore how these emerging technologies impact storytelling strategies and audience reception across different cultural contexts, particularly in non-Western media industries.

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