

Project Esper: The Filmic Fascia, The Cinematic

Backface and Backface Dreaming

DOI: <https://doi.org/10.24135/ijcmr.v14i2.180>

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Abstract

This annotated portfolio, which presents three connected pieces of Research through Creative Practice, synthesises findings from tests, experiments, and prototypes, which were developed to explore the nascent methods and processes needed to *respatialising cinema*. Project Esper applies computer vision workflows, to reconstruct cinematic space from existing story worlds for use in virtual production and immersive media, opening the text up again as a space to reencounter; both productively as a site for new creative possibility, but also theoretically as a spatial encounter.

By feeding shots, sequences and scenes from existing filmic narratives into these computational models, flat cinematic images are reconstituted into spatial, explorable environments. The camera's original flattening of space into image and sequence becomes a kind of sedimentary record - noisy, partial, and layered - from which computational logics reassembles and reconstitutes depth, and extrude form.

In this process, the cinematic shot is both training data and geological trace. As scenes are parsed by the algorithms, and passed between processing nodes in the workflow, they generate 3D environments composed from the visible surfaces - the *Filmed Fascia* - while occluded zones, untraced by the camera, remain unresolved. These blank zones become cinematic cavities: gaps, escarpments, and fissures in the reconstructed cinematic surfaces, where the geometry of the world drops away. Some of these absences reflect missing data; others reveal spaces never constructed on set – negative space, non-places, made visible only in their absence – the *Cinematic Backface*.

To resolve these voids, video diffusion models are introduced as a synthetic imagination, generating plausible continuations of the cinematic world. This process - which we call *Backface Dreaming* - imagining, inferring and extrapolating the unseen, filling in occlusions, to create a seamless, explorable cinematic space. The result is a kind of cinematic geology: layers of visual data transformed into immersive strata, where spatial depth is mined from flattened narrative, and synthetic sediment fills the gaps left by production's blind spots.

This work has productive applications, but maybe more importantly raises theoretical questions about the limits of cinematic vision, the materiality of cinematic space, how critical making and Research through Practice can be used as a form of critical enquiry to surface new approaches, new positionings to the text, and to explore the poetics of reconstruction through AI.

Introduction

This annotated portfolio will trace a sequence of aesthetic experiments with emerging technology as a set of field notes from an ongoing inquiry into the *respatialisation of cinema*. Throughout the project we have used proprietary, easy to access, commercial technology as a machine for excavation, sifting, manipulating and synthesising data sets from film. We have used the technology as ‘thinking tools’ to consider new approaches to spatial media, new relationships to the filmic text, and new production possibilities for immersive and virtual production. We have treated the systems as processing nodes, that can be daisy chained and bricolaged together to explore form, and process units of data. We also acknowledge the ‘creative misuse’ of technology as a process of creating frictions. We have attempted to describe the processes we have explored, present a series of artifacts and encounters, which helped our thinking process, and offer new productive vocabulary for what we have uncovered; the *Filmic Fascia*, the *Cinematic Backface* and the process of *Backface Dreaming*. Throughout the writing we frame the material we are working with geologically as a rhetorical and poetic positioning of the process.

Framing the practice as inherently material, and the process of inquiry surfaces new material knowledge’s and makes tangible new theoretical terrains. We employ a geological analogy to help the reader navigate and orientate themselves in these speculative and experimental workflows, but also to evoke critical imaginings of space, history, materiality of form to help position the practice; the particles of the splat, the pixels as grains, the ellipsoid crystalline structures in the gaussian splats. Other spatial metaphors were explored such as architectural (but this implies too much agency, creativity, a subject/object relationally and solutions) and archaeological (but that implies a seeking, discovery, depth and unearthing; an uncovering of treasure rather than study of form). The poetics of geology helped to frame the material and temporal entanglement we felt while excavating the data and working through the processes. We also employ these geological poetics as a deliberate rhetorical tool to distance the practice from the technical, to an aesthetic, conceptual, material and theoretical positioning.

Making as Method

This conceptual project emerged from a series of practical experiments with Gaussian Splatting, initially undertaken to scan real-world locations for use in virtual production pipelines. Working toward the creation of digital twins for volume screen production, these early tests appropriated the camera as a data acquisition device, scanning and capturing spatial information rather than cinematic images. Moving the camera through the space, sampling the surfaces from multiple angles, to triangulate data points, conceptually repositioned the camera. This reframing of capture device, from image-making to space-scraping, prompted a reconsideration of what the cinematic camera already does, implicitly, during conventional film production. This critical shift opened spaces for the team to apply approaches from Critical Making (Ratto, 2011; Hertz 2012) to surface questions about the material knowledges we hold about cinema as a medium, and the process of Academic Carpentry (Bogost 2012) to craft a set of connected rhetorical artifacts which work not

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as technical demo, diagram, or illustration, but a set of aesthetic encounters for the audience to frame each of the three concepts that we unearthed; pieces of Research through Creative Practice which situates the new approaches to 'knowing cinema'.

As these workflows developed, the project began to question whether similar processes and workflows might be applied not only to physical spaces, but to the spaces already constructed within existing cinema; mining cinematic history, not as a narrative, but as a spatial archive. Instead of capturing new spatial data sets with a camera-as-scanner, what if we ingested existing story worlds?¹ Shots, sequences, and tracking movements from films were introduced into the models to test whether sets, and their story worlds, might be reverse engineered from authored cinematic material. This marked a conceptual turn: cinema was no longer approached as a finished representational text, but as a layered archive of spatial information shaped by camera movement, framing, and production design. Through this process, the camera came to be understood not simply as a device that records space, but as one that actively *samples* it; selectively, partially, and from privileged vantage points. Film theory has long emphasised that cinematic vision is structured by framing, perspective, and apparatus rather than offering neutral access to space (Baudry, 1974; Sobchack, 1992 et al). The camera preserves only what is presented to it, producing spatial coherence through exclusion as much as inclusion (Bazin, 1967; Doane, 2002).

When cinematic images are repurposed in this way, as spatial data, their limitations become materially evident: occlusions, blind spots, and unbuilt surfaces as structural and geometric absences. In this process of Critical Making these gaps do not indicate technical failure, but instead reveal the conditions under which cinematic worlds are produced and consumed. We are presenting a fragment of a larger project through this annotated portfolio and this writing should be considered as 'field notes' of thinking, developed over a 12 month period, through email exchange, and passing experiments back and forth. This practice is heavily influenced by the commercial and industrial discourses that have worked as a creative milieu. We developed this portfolio in productive tensions, with and against a range of public showcases and evolutions of AI starting in May 2025 with huge advances multi-model models, soon after the public release of Gemini 2.0, and finishing in February 2026 following the release of Genie 3.0 which offers the user 'world sketching'.

Mining the Cinematic Image

As the camera traverses the set - panning, tilting, and tracking through space - its frustum scans across the visible surfaces presented to it. Light reflected from the environment and is translated

¹ This process started as a theoretical experiment to explore film pedagogy with the core question 'what if we could teach from inside the film' as a provocation to explore new material relations with cinema, and to open up new types of practice. We imagined a scenario where we could teach students about, for instance, the film *Psycho* (Hitchcock 1960) by reassembling the Bates Motel as an explorable environment and classroom. Where we could use techniques from virtual scouting to conduct sessions for students to re-shoot scenes, explore the narrative space, and generate new positions and relationships to the cinematic text.

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into flattened spatial data on the camera sensor. Depth is compressed into image, and captured as rich, visual datasets. In this process, narrative space is disciplined into image by the cinematic apparatus, encoded as a dense but always partial spatial dataset (Arnheim 1957; Bazin 1967; Baudry 1974 et al). Cinema has become a database for extraction and experimentation, which can be drilled and mined (Manovich, 2001). Depth, volume, and distance are collapsed into framings; a sequence of images as a shot, a series of shots as a scene, rich visual data organised and collated. The resulting images encode dense visual information while remaining fragmentary and partial, capturing surfaces and perspectives rather than complete spatial worlds (Doane, 2002; Bruno, 2002). Space encountered from particular vantage points, at particular moments.

As the lens trace sets to build scenes, spatial depth is repeatedly flattened into discrete images. Each shot contributes another layer to this accumulating record, documenting objects, bodies, gestures, and spatial relations while simultaneously erasing what falls outside the frame (Mulvey 2006). As the camera tracks and traverses the space, as it moves its vantage point, we reveal new angles and new visual data. These framings render representations of three-dimensional space without preserving the spatial data itself. What accumulates is not a complete world, but a stratified archive of perspectives; fragments that suggest spatial continuity without ever fully resolving it. The cinematic audience models and constructs spatial continuity from these fragments, jigsawing together the space from units. Cinema constructs the impression of spatial coherence through repetition, alignment, and movement, but this coherence is an *affect* rather than a material condition of the image (Bordwell, 1985; Burch 1973; Heath 1981 et al).

Reframing the camera not only as a narrative device but as a spatial scanner opens new conceptual territory. Film production routinely constructs worlds that *face into* the camera's gaze: one-sided architectures, partial interiors, façades, flats and false depths; designed to appear complete from a limited set of pre-planned vantage points. These environments are coherent only from specific angles. The world is partial, but the flow of images, how they are juxtaposed and aligned imagines space for the viewer (Bordwell 1985). The camera does not encounter a total world, but a carefully oriented surface. Cinema, in this sense, is a practice of presenting worlds *for capture*.

Shots accumulate into sequences and scenes, offering multiple angles and movements that allow viewers to infer spatial continuity. These nested units of meaning (Bogost 2006) are designed to communicate spatiotemporal narrative to the audience, but are often also spatial documents. Continuity editing supplies orienting symbols, repeated motifs, and matched action to stabilise this inference and continuity across cuts (Boardwell 1985). Space is reconstituted mentally by the viewer from fragments and images. This is film as conventionally understood: images, framings, movements, and edits producing the illusion of a persistent, navigable world. The material incompleteness of cinematic space remains largely hidden, masked by narrative flow and perceptual convention. The camera, and the audience, weave the world together from these images.

This project takes as a foundational anchor, the speculations presented by Scott in the 1982 film *Blader Runner* (Scott, 1982). In *Blade Runner* the Esper sequence presents a speculative vision of the still image transformed for spatial analysis. A diegetic prototype (Kirby 2010) which works rhetorically on the audience. Deckard's examination of the photograph is not a process of simple magnification, but one of navigation and interrogation. The still image becomes a navigable environment, one that can be panned across, zoomed into, and, most significantly, explored beyond the limits of its original framing. As Deckard issues voice commands, the Esper machine isolates regions of the image, increases resolution, and extrapolates hidden detail. The image ceases to function as a static record and instead behaves like a volumetric space, offering depth, orientation, and discoverable surfaces. The machine's ability to reveal objects occluded from the camera's original viewpoint, most famously allowing Deckard to "see" around a corner, signals a radical reconfiguration of photographic indexicality (Hansen, 2004 pp 9-16). The machine steps in the image with a repeated shutter click as the space is resampled. Vision is no longer bound to the camera's position, at the moment of capture, but can be iteratively repositioned and new image data inferred.

Crucially, the Esper does not recover information that was empirically present in the image. Rather, it constructs a plausible spatial model from partial visual data. Reflections in mirrors, specular highlights, and perspectival cues are treated as evidence from which the machine infers the geometry of the room. The photograph becomes training data and than proof; its value lying not in what it shows, but in what can be extrapolated from it. This transformation reframes the camera from a device of representation into a system of spatial scanning and reconstruction. The Esper does not enhance the image so much as reconstitute its spatial implications.

The scene stages an early cinematic articulation of a positioning that contemporary computational vision now operationalises: how flat images might be used to generate and extrapolate spatial environments. In *Blade Runner*, this speculative vision remains fictional and opens a space for contemplation and reflection on Deckard's roll as detective, the indexicality of the image, the image as evidence; this critical repositioning of the image as training data is a challenge to the viewer and subtly nudges the audience to speculate on possible and plausible futures through cognitive estrangement (Suvin 1979). In these contemporary respatialisation workflows, it becomes materially enacted. The portfolio presents three outcomes, where the processes have been applied to three separate cinematic universes, aligned to three key practical stages, but also emerging theoretical concepts,. We present renderings from the film *Blade Runner* (1982), specifically exploring the scene in Deckard's apartment, *Aliens* (1986) which was selected for its vast, sprawling cinematic universe and deep cinematic lore, and *Minority Report* (2002) famed for its approaches to worldbuilding, art direction, and its contributions to the technological imaginings (Kirby 2010)

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The selection of texts is a deliberate rhetorical positioning, within Sci Fi as a genre, to help position the audience and the outcomes². We present these outcomes here as filmic renderings, deliberately presenting the three concepts within examples from Science Fiction, as a way of linking the ideas, practices and outcomes to spatiotemporal narratives of speculation, imagination, and possibility for the audience. The original footage is located within the renderings to make productive synergies and tensions between the familiar scenes from Science Fiction canon, and the new demonstration of the new conceptual framing proposed.

Excavating Theory

Project Esper, revisits this cinematic logic through the application of computer vision workflows. By feeding authored, polished cinematic shots into these models. Through iterative cycles of honing the process, there are particular shot taxonomies which are more productive for the current status of machinic vision. Tracking shots, in particular, provide rich data, especially shots that curve through the set, producing parallax, and triangulation, tracking patterns in the sediment: sequences already designed to suggest volumetric movement through space, shaped through cinematic authorship, post-production, and visual effects pipelines. As the camera explores the world, it reveals new visual data. Using the current models there are particular cinematic units which are rich with spatial data for extraction; objective shots, where the camera has a long depth of field, which move through the space, and move around objects are particularly rich sites for mining spatial information.

This approach, and the presentation of practice, are not motivated by technical efficiency or seamless photorealistic completion. Instead, the workflows are mobilised as a form of Critical Making: an exploratory, hands-on method that uses computational processes to surface the assumptions, limits, and material conditions embodied in the material form of cinema itself. Critical Making offers, as a method, “focus more explicitly on linking material modes of engagement and critical reflection on our technological environments” (Ritto in Hertz 2012). The making here is not aimed at resolving problems, but at producing frictions (Ratto 2011). By pushing cinematic data into systems that demand spatial coherence, the project exposes the points at which cinema resists being treated as spatial data, the process has surfaced and made tangible a new framing of cinema, and how it implies or imagines space. We are selectively illustrating the iterative processes, which have framed concepts through this portfolio, but there are many less successful renderings and experiments that have underpinned this development. Often the footage’s resistance to spatialisation uncovered new lines of inquiry and investigation

This scene from *Aliens* (1986) was selected from a broad range of examples generated throughout the project because of its presentation of a technological imagining in the hypersleep chambers,

² We explored a series of important shots and scenes from the history of cinema throughout the early stages of the project, exploring the Luminaire *L'Arrivée d'un train en gare de La Ciotat* (1896), *Wings* (1927) for its famed dolly shot, *Russian Ark* (2002), *The Children of Men* (2006)

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but also because the scene famously employs a technique using mirrors to expand the space. The cryolab offers us an important analogy. The tracking shot we use practically offers clean training data, but is also heavily coded with cinematic spatiotemporal lore. The hypersleep chamber is an important signifier at the beginning of the film. The track shot we use, a short sliver of the cinematic universe but has heavily loaded signifiers which helps to emphasise our process and positioning. We encounter the pods as a technology in the first shorts in *Aliens*.

The film opens with a cold blue shot of Ripley frozen in one of the hypersleep tubes as eerie strings score the shot, of a ship drifting in space. The slow strings are pierced by the synthetic beeps of a machine, the ice crystals on the tube are illuminated with encoded text from the nearby terminal indecipherable by the audience but allude to computational logic. The escape ship docks, and cool hues of the ship are ruptured by a robotic arm that cuts through the metal door, showering the scene with hot yellow sparks. A probe hovers into the ship, and projecting out from the machine is a thin, bright piecing light of a laser scanner which tracks across the surfaces of the room. The scanner is marbled with swirling particulates in the air from the intrusion and the probe is backlight with huge shards of light maker visible by the smoke. The location has to be scanned before three humans can step into the ship to plunder space for resource. After some exposition scenes between The Company and Ripley, the tubes are reintroduced with the track shot we utilize. The scene presents the audience with ten hypersleep chambers containing the USS Sulaco crew, but importantly employed practical effects on set to give the illusion of space. Within the set while shooting Cameron located a mirrors and tracked the shot to end on an obtuse angle. This allowed for a cinematic trick to extrude the space outwards for the viewer. Engrained into this shot then, for us, are our opening encounters with the tubes, the iconic opening with spatial scanners, the practical illusions of cinematic spatial craft and the multifaceted strata of the cinematic imaginary.



The Filmic Fascia: *Aliens* (2025)

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When film footage is processed through Gaussian Splats, the resulting environments are composed only of what the camera has seen. Visible surfaces, walls, floors, furniture, bodies, are reconstructed as volumetric point clouds or surface approximations. These form what could be understood as the *Filmic Fascia* of the cinematic world: the outward-facing skin that the set presents to the camera. Behind this fascia, however, the world collapses (see *The Filmic Fascia* (2025)). Occluded zones, unseen surfaces, and unrecorded structures emerge as absences in the reconstructed space as voids or noise. The model does not fail; it reveals.

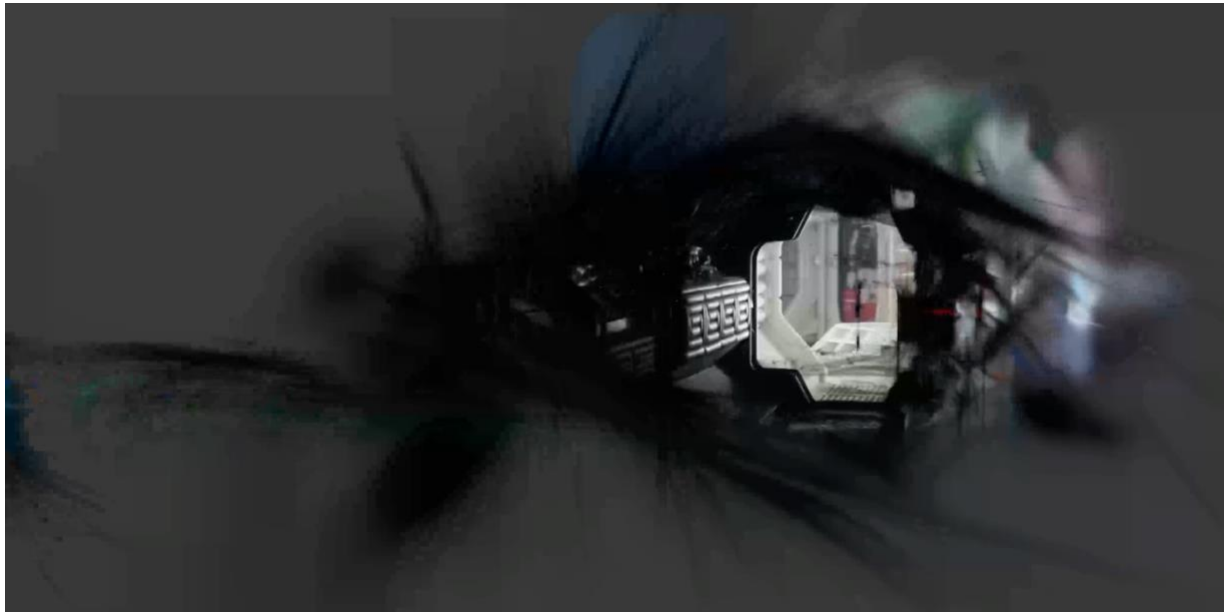


Figure 1 – Video Illustration of the Filmic Fascia and Cinematic Backface from the film *Alien* (1979)

These absences appear as cavities, fissures, and escarpments in the respatialised environment, abrupt drop-offs where geometry dissolves, hollow interiors, behind walls, and gaps where the set was never constructed (fig 1-3). To mirror the positioning of these types of spaces between the cinematic and computer vision, we will label this conceptual non-space, or spatial void, the *Cinematic Backface*. These are the inferred and imagined spaces of cinema which the flat, audio visual experience implies to the viewer.



Figure 2 - Video Illustration of the Filmic Fascia and Cinematic Backface from the film Alien (1979)

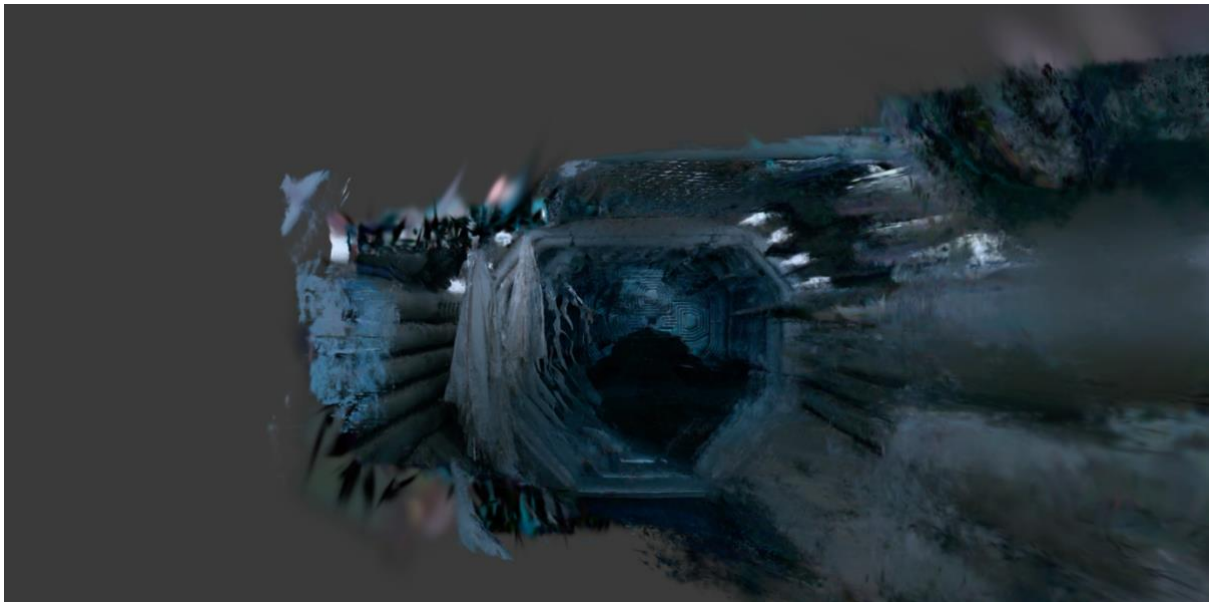


Figure 3 – Video Illustration of the Filmic Fascia and Cinematic Backface from the film Alien (1979)

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The *Cinematic Backface* is a non-space, marked by its material absence on screen, but is imagined into the spatiotemporal narrative world by the audience. In three dimensional modelling, the backface refers to the internal polygon faces which are often not rendered for the virtual camera (or the world) through a process of backface culling. The *Cinematic Backface* has no substance, and is defined by its absence, it is inferred or negative space. It is not a practical space (yet), but is a conceptual terrain to be explored and theorized. In some instances the *Cinematic Backfaces* result from insufficient coverage in the training data. Others point to a more fundamental condition of cinematic production: spaces that were never built because the camera, and audience would never need to see them. The respatialisation process renders visible what the cinematic camera and the post-production process normally conceals; the partiality of cinematic world.

Technical Interlude | Source preparation and dynamic range

Sequences were selected from the source films and edited into short segments of between thirty seconds and three minutes, then exported as image sequences at the native resolution of the source (3840×1600, TIFF). Where a segment was long enough to make full-rate submission impractical, decimation was applied: every fourth or eighth frame was retained and the intervening frames discarded, reducing a 23.976 fps source to an effective rate of approximately 6 or 3 fps respectively. Frames were discarded, not resampled or interpolated. The Minority Report sequences were submitted at full frame rate (fig 4). No stabilisation, denoising, regrading or retiming was applied to the frames themselves. The intention was to work with the image as delivered, including its compression artefacts and grain.

To address problems encountered in earlier tests, we explored an additional preparation step for the Minority Report sequences. The film carries a high-contrast, low-key grade in which a substantial proportion of background architecture and spatial context is crushed into shadow. Under a standard Rec.709 delivery, this material is not merely dark but absent: there is no signal for a reconstruction process to work from. We therefore worked from a high dynamic range version of the same segments (HEVC/H.265, 3840×1600 at 23.976 fps, ITU-R BT.2020 primaries, SMPTE ST 2084 (PQ) transfer function, mastering display maximum luminance 1000 cd/m², MaxCLL 1694 cd/m², MaxFALL 289 cd/m²).

Displayed on an sRGB or Rec.709 monitor this footage appears flat, grey and desaturated, conventionally, this is seen as a fault. For our purposes it is the opposite: the flattening redistributes tonal information out of the shadows and returns detail that the theatrical grade had deliberately suppressed.

The effect on the pipeline was twofold. Camera alignment resolved more accurately, because feature detection had usable detail in regions that were previously featureless black. And the training process had materially more scene context to reconstruct from, particularly at the edges and rear of the depicted space, precisely the regions this project is concerned with. A third effect was unanticipated: the resulting reconstruction retained the wider dynamic range and returned a more saturated, luminous result in the viewer than the Rec.709 pipeline had produced.

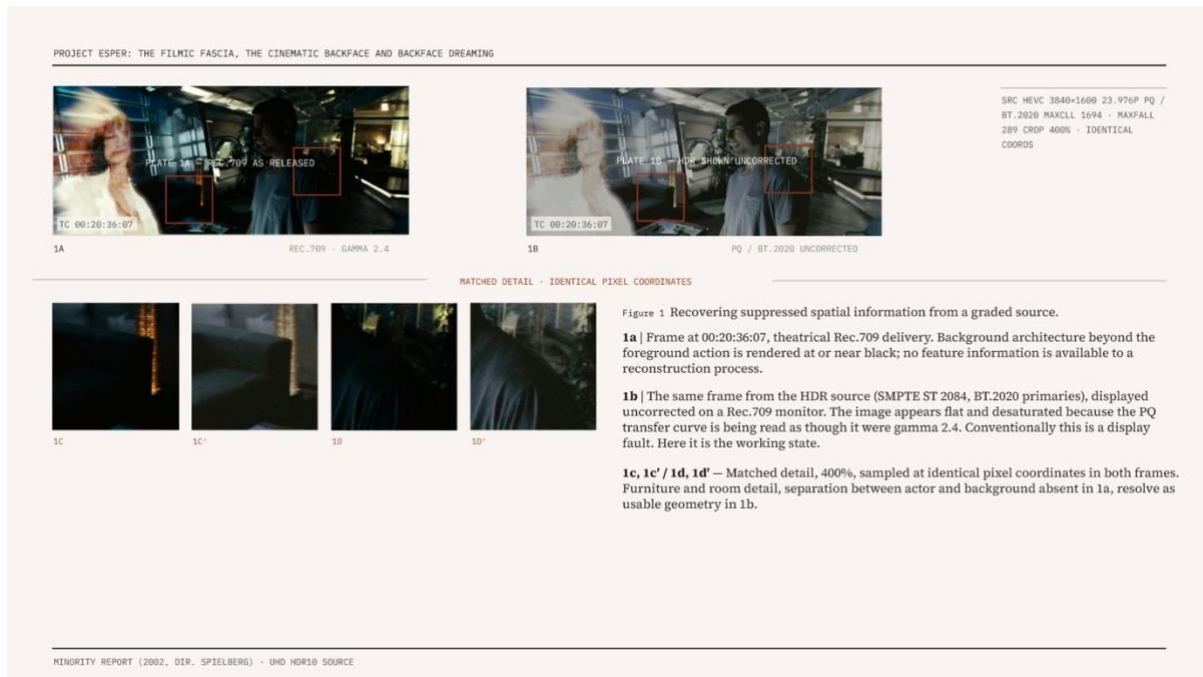


Figure 4 - Process Sheet 1 – Recovering Suppressed Spatial Information from Grade Source (taken from project documentation)

The audience often piece together the space of a scene from a series of complimentary shots; building and mapping the space as the narrative events unfold. Recurring signifiers, and rules of cinematic continuity help the audience configure a map of the world. To help propose the *Cinematic Backface* we have extracted a series of shots from the film *Minority Report* (2002). Each shot helped to excavate the space from the narrative flow, offering partial spatial data sets which we merged across a single space. We sampled from a single scene, but the process could be expanded outwards to encompass all of the cinematic instances and appearances of a space. These data sets have are metamorphically merged into a combined data set. This particular scene was selected both for practical reasons as it offers lots of spatial coverage from a number of tracks, but also for its use of diegetic prototypes to reimagine our relationship with the image, and memory. The holographic interface that John Anderton uses extrudes key elements of the image into a three dimensional surfaces, with no backface.

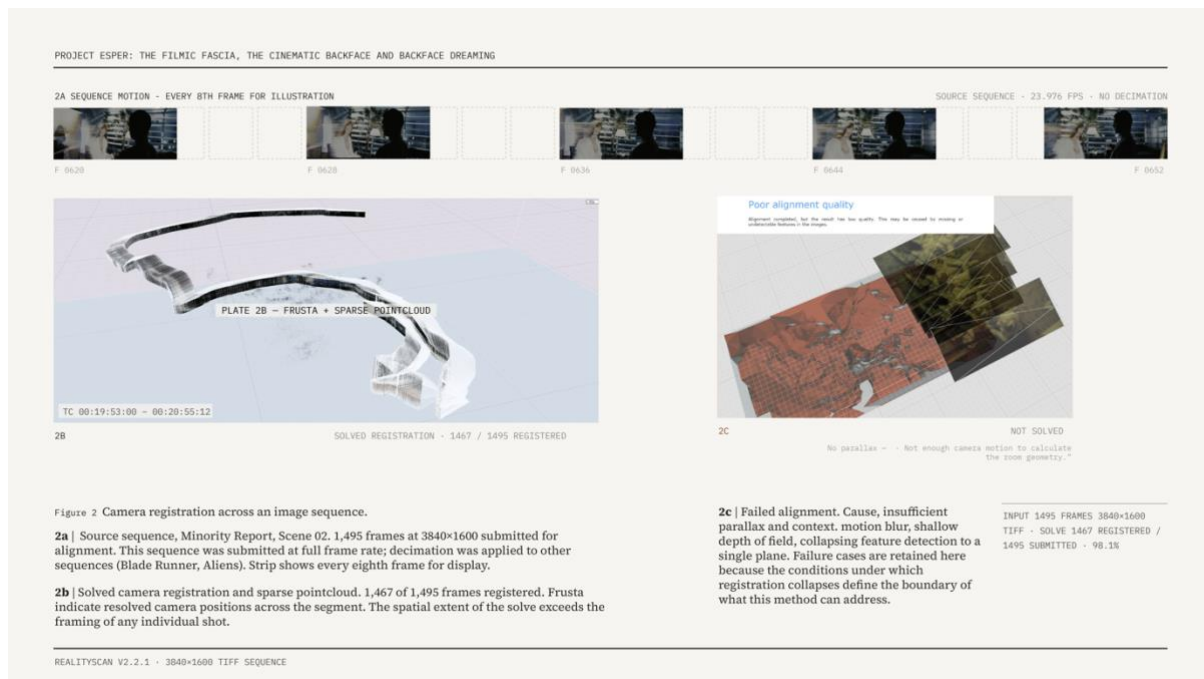


Figure 5 - Process Sheet 2 – Camera Registration Across an Image Sequence (taken from project documentation)

The camera tracks behind Anderton as he commands the home computer to switch to the wall screen. The screen shows a series of frames of his son waving at him from a beach. He inserts a card into his desktop computer and the camera cuts between a series of devices which boot into action with a high-pitched electric hum. The Andertons son Saun steps out of the projection screen to meet him. He speaks to his son, and his voice falls in and out of sync with the recording. Anderton inserts a new memory of his wife. He huffs from a device, and relaxes into a memory where his wife resists being captured to film asking him to put down the camera and engage in a more immediate, intimate, less mediated encounter pleading for him to watch the rain. The scene works as both training data but also as an analogy, opening up the audience to imagine new spatial media encounters

Technical Interlude | Alignment and model configuration

Image sequences were imported into RealityScan (v2.2.1) and camera alignment and registration were calculated across the frames of each segment. Where alignment succeeded, the resulting camera solution and sparse pointcloud were exported as a .csv readable by PostShot (v1.0.110).

The .csv and its corresponding image sequence were then opened in PostShot and a Gaussian Splat training run initialised. Configuration was deliberately maximal rather than optimised. Image downsampling was disabled, so training ran at the source resolution. The step ceiling was disabled entirely, and maximum splat count was left at its uncapped default. Runs used the Splat3 model profile with anti-aliasing enabled and spherical harmonics to degree 3; sky model generation and region-of-interest constraints were both disabled. We did not tune for efficiency. The objective was not a lightweight asset for downstream use but the fullest reconstruction the source could support, so that the point at which the reconstruction ceased to improve would be a property of the footage rather than of our settings.

A representative run on the Minority Report material, 1,467 registered frames, reached 1.278 million steps and 793,160 splats over four *hours fifty-five minutes on a Dell Precision workstation with an NVIDIA RTX 4090 (24 GB VRAM)*.

**The Cinematic Backface - Minority Report (2026)**

The respatialising of film becomes a form of excavation. The cinematic image functions as a geological layer, preserving surface detail while compressing and obscuring depth. Computational vision acts as a kind of interpretive tool, cutting through these layers and exposing fault lines in the constructed world. What emerges is not a seamless virtual set, but a fractured terrain. The fractures we unearth in this process, and absences, are not errors to be corrected, but critical artefacts that prompt reflection on how cinematic space is made, presented, and perceived.

Framed as Critical Making, these workflows do not aim to replace cinematic production methods or propose definitive virtual sets. Instead, they act as probes, tools that make visible the tensions between image and space, surface and depth, capture and construction. By working *with* and *against* AI systems, the project treats making as a form of thinking: one that unfolds through iterative experimentation, breakdown, and reconfiguration (Ritto 2011).

Through this process, cinema is re-encountered not as a finished text but as a material system with limits and blind spots. Respatialisation in *The Cinematic Backface - Minority Report* and the other Cinematic Backface experiments which lead to this piece do not complete cinematic world; they expose their incompleteness. In doing so, the work raises broader theoretical questions about the limits of cinematic vision, the status of cinematic space, the completeness of the text and the role of computational vision plays in mediating, extending, and reimagining visual culture. The resulting environments are less about immersion than about insight - spaces that invite navigation not only as virtual worlds, but as conceptual terrains. There is certainly potential here for more commercial applications and investigations, but these experiments are grounded in Critical Making as an approach to test and contest our relationship to cinema, using emerging technologies as theoretical probes to think with and through.

To engage with these voids, *Project Esper* introduces video diffusion models as a secondary, speculative process. These models are used to generate plausible continuations of the cinematic environment, filling occluded zones and extending space beyond what was captured on camera. This process - referred to here as *Backface Dreaming* - does not attempt to recover an original or authentic space. Instead, it imagines what might exist behind the filmed surface, extrapolating from visual cues, genre conventions, and stylistic coherence.

Backface Dreaming crafts synthetic data to fill the data gaps. It produces spaces that are continuous but not verifiable, coherent but not authored. In doing so, it further complicates questions of authorship, indexicality, and materiality. The filled-in spaces are not part of the original filmic world, yet they emerge from it, shaped by its visual logic. They function as speculative sediments, deposited to stabilise the fractured terrain of the respatialised environment.

Building outwards from these volumetric reconstruction workflows the project developed an iterative, cyclical process for exploring Cinematic Backspace through generative inference. This phase began with the extraction of high-resolution still images from existing films, selected for their strong perspectival cues, multiple angles of the same surface, and spatial depth. These shots and stills were used as training data for Gaussian Splat spatializations, where the data was aggregated together creating a spatial *mélange*. This process helps to reveal the *Filmic Fascia* and expose the *Cinematic Backface*. Throughout the process we explored lots of approaches such as generative fills and cycles textual prompting to explore the ways that synthetic data could be generated to address the spatial voids; many of these processes created uncomfortable outcomes which felt aesthetically and authorially intrusive. For the work presented here we employed a process of iteratively

reframing through generative models. We isolated a series of stills which constituted all of the stable data from a location and then introduced into a generative AI workflow using the Qwen model with camera angle control, enabling the virtual repositioning of the camera from the stills, relative to the original viewpoint. Rather than enlarging or enhancing the image, the model was prompted to imagine adjacent perspectives; to look around objects, past occlusions, and into spaces implied but never shown in the source material. This process deliberately echoes the speculative operation of the Esper machine in *Blade Runner*, where an image becomes navigable rather than fixed. This synthetic data, was then layered into the gaussian splat to generate additional datapoints to supplement the original stills, to afford artificial triangulations and synthesise spatial cohesion. The AI model does not recover hidden truth from the still image. Instead, it infers spatial continuity from visual cues such as lighting direction, texture gradients, reflections, architectural alignment, and genre-consistent spatial logic. In doing so, it produces new camera angles that maintain stylistic and material coherence with the original cinematic world while extending it beyond the limits of the recorded frame. These generated views function as synthetic perspectives: images that never existed in the film's production but remain legible as belonging to its story world. The process thus constructs a speculative spatial persistence - a sense that the cinematic environment continues beyond what was captured on camera.

Crucially, this workflow was not treated as a one-off generative act but as an iterative loop. Newly generated angles were fed back into the Gaussian Splat training data alongside original film footage, allowing the volumetric reconstruction to stabilise previously unresolved regions. In this way, generative inference was used to fill the *Cinematic Backspace*. Layers of original and synthetic data were layered like strata, thickening the dataset and building out the spatial cohesion and persistence. Each iteration reduced structural discontinuities in the respatialised environment, while simultaneously foregrounding the speculative nature of its completion. The process does not claim to reconstruct an original space, but to reveal how cinematic worlds can be extended through inference, imagination, and machine vision. This iterative dreaming, as a form of Critical Making, operates not as a corrective to cinema's limits, but as a method for making those limits visible and productive. To build on established discourses around AI hallucinations, we refer to this process as *Backface Dreaming* where the *Cinematic Backface* is dreamt into spatial cinematic reality. We position this as 'dreaming' not only to link into the emergent vocabulary around generative and synthetic media, but also to conceptually position and tether it rhetorically and poetically to a relationship to the 'real' spaces rendered in the original text. To present this process we extracted all of the coverage that we could from the location extruded during the Esper scene in *Blade Runner* (fig 1). Capturing all of the information we could about the victim and the location that Decker is investigating. The Esper machine has pushed the image so far, extracting evidential data for the investigation, but through *Backface Dreaming* we have extrapolated more, building out a spatial model through inference. We have selected this scene to operate rhetorically as a text. There are certainly scenes and spaces with more utility to virtual production workflows to open the space of the text for creative use, but within this creative practice we have leveraged the diegetic prototype of the Esper machine as an anchor which infers wider creative application.

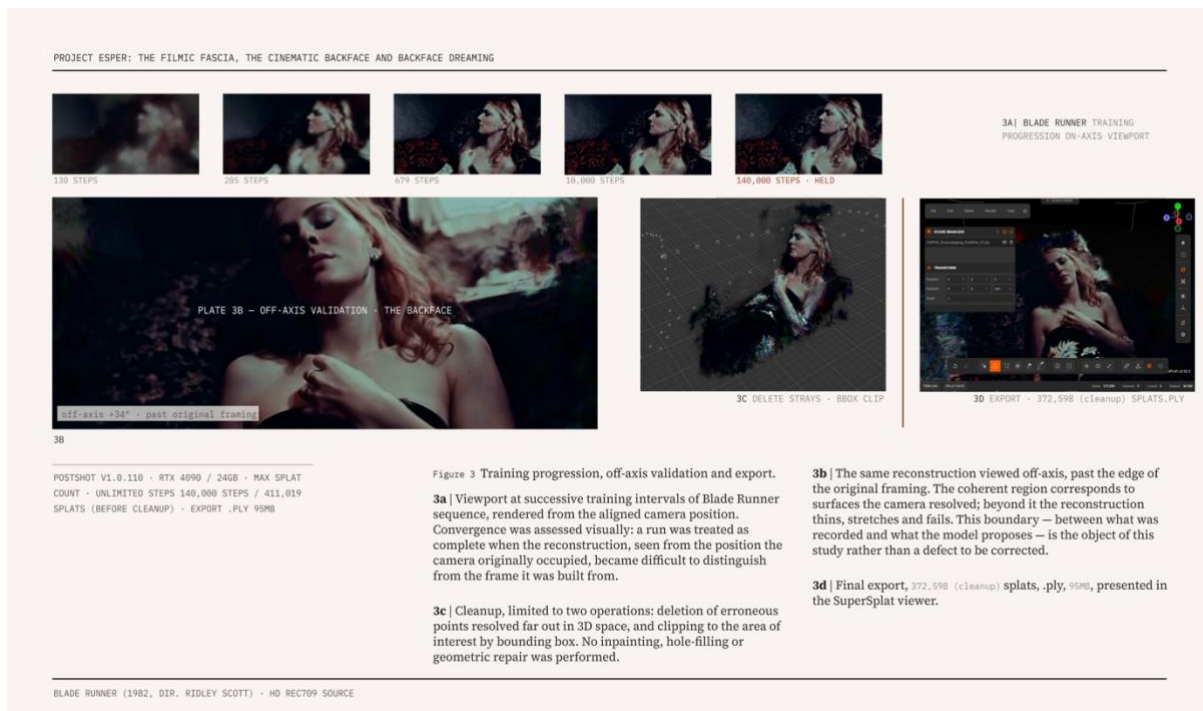


Figure 6 Process Sheet 3 – Training Process, Off-Axis Validation and Export (taken from project documentation)



Backface Dreaming – Blade Runner (2026)

Scaling the Scan

If individual images, as units, can be treated as spatial traces, then shots, scenes, films, and franchises can be *reunderstood* as nested units or spatial strata which could be extracted as training data, accumulating across scales. A single still image functions as a thin sedimentary layer, capturing a

surface encounter with space from a fixed vantage point. Shots thicken this layer through movement, introducing parallax and temporal continuity. Scenes further consolidate spatial information by repeating locations across angles, framings, and moments, while entire films deposit extended strata of spatial logic, material consistency, and environmental continuity. At the largest scale, film franchises operate as deep geological formations; multi-layered archives in which spaces recur, evolve, and are rearticulated.

Within this framework, a franchise such as *Alien* can be approached not simply as a universe of narrative texts, but as a distributed spatial record of a storyworld. Across films, prequels, sequels, spin-offs, intertexts, paratexts and transmedial encounters. The franchise accumulates partial views of shared environments; corridors, chambers, industrial architectures, planetary surfaces, each captured under different aesthetic and production constraints. These fragments do not always align seamlessly at the level of narrative continuity into persistent story worlds, yet they sediment into a recognisable spatial and narrative logic. They are canonised and reCanonised in a complex negotiated discourse (Jenkins 2006). This spatial reencounter with cinema could shift our relationship with the media text, and wider media ecologies in a similar way that the internet shifted under Media Convergence, from consumption to participation. The respatialisation of the cinema, and the possibilities it opens across expansive story worlds, and universes shifts the logic of media. When treated as training data, this accumulated visual material offers the possibility of piecing together a navigable but nebulous geography of, for instance, the *Alien* storyworld. Such a process, would operate as a form of cinematic geology. Individual shots act as surface samples, scenes as cross-sections, and films as stratigraphic layers deposited over time. Following the logic of this approach, and the renderings of emerging practices, used to synthesise spaces from stories, proposes a new type of textual positioning. We could bricolage together story spaces from the fragments of film, to create navigable spaces which could work as sets from LED volume walls, persistent landscapes crafted from the narrative spaces of cinema, building from recurring spatial instances.

Conclusion: Questioning Surfaces and Surfacing Questions

By using inferred, synthetic, data to deposition the spatial escarpments of the *Cinematic Backface* we have started to gesture towards generating persistent, seamless and explorable spaces out of the cinematic text. We are looking to build environments out of the story worlds which can be explored and be navigated. That geometry creates coherent and cohesive environments underpinned by the original textual information that audiences will recognise but expanded past the camera original positioning. The processes employed Critical Making to investigate and discover aesthetic and poetic textual considerations, and frame new ways of thinking with, and through, cinema. There are experiments which are more complete realisations of the end goals, which function more as technical demonstrations, but here we have presented three pieces of practice which help to orientate the audience but offer a textual encounter (both through writing and practice) designed to illicit speculation, imagination, and possibility; opening up new critical debates. We have

worked to consolidate the findings into a set of linked filmic renderings, and a corresponding terminology to offer a new vocabulary and new understanding; *Filmic Fascia*, the *Cinematic Backface* and the process of *Backface Dreaming* to orientate the audience around some of the new and emerging critical concerns raised by cinemas respatialisation. The paper offers a new vocabulary, rooted in the poetics of the image, as a resistant counter-narrative to the industrial discourses around generative and synthetic media. This repositioning of the terminology and language, and the development of a new lexicon, which emphasises the material qualities and poetics, helps to reframe our relationship to the practice and hold space outside of techno-evangelism. Critical Making is used as an approach to unlock new critical horizons before their discourses are capitalised by hegemonic vectors.

The iterative, daisy chained workflows, used as probes throughout this work to speculate on cinematic space, have been operationalised as mode of critical inquiring to explore and develop the concept of *Backface Dreaming*. The implications of the process could have far reaching disruptive impacts for the media text, which raise questions of consistency, canonicity, textual coherence, intellectual property, authorship, ways of ‘knowing cinema’, the filmic archive, textual positioning, narrative design, production pipelines, and industrial discourse in Immersive Media and Virtual Production. This study opens spaces, and coins a critical and poetic vocabulary to explore how they affect the authorship process and the ownership and control of these new spaces. Throughout the process we have used propriety, off the shelf, accessible technologies as a process of ‘making as thinking’, but also to create a series of critical media artifacts to probe, and speculate on the limits of the text under new synthetic and generative poetics. These critical artifacts help to surface new textual and aesthetic imaginations about the possibility of a respatialised cinema. The speculative and nascent methods have been used to build a new poetic vocabulary by applying Research through Creative Practice as a method of excavation, sifting, and synthesising new modes of textual encounter.

These field notes and the evolving practice have been used to surface new textual considerations, new research trajectories and new positionings. The process is a practice of reopening the text, but in doing so opens a series of new trajectories and considerations. The approaches we have used are experimental, new and emergent but as we work through them they bring questions forward rather than resolving them. The process of *Backface Dreaming*, understanding that this is just one approach to it, raises questions about and for film. This list is by no means exhaustive but are they are indicative of some of the trajectories and implications.

1. How do we consider the authorship of the Cinematic Backface as we synthesise it using AI models, iterating, shaping and crafting new synthetic narrative space. As we build towards consistency and persistency of narrative space what relationship does this new space have to filmic cannon, the original authorship, and the techniques of worldbuilding. Is the AI here functioning as a co-author of cinematic space or as an extension of the camera’s perceptual logic?

2. If a colour grade can be undone to recover spatial information, what else in the archive is recoverable? A wealth of data is captured during a film shoot, and most of it is discarded once the final artwork is produced. But with multimodal, input-agnostic AI systems coming online, how much more might be inferred from the sparse details that survive? Lean's *Lawrence of Arabia* (1962) is a much-studied work; with a sufficiently capable system, could we deduce the exact time and location of a shot, cross-reference it against geological and weather records, and revisit that moment as a volumetric dataset...and should we?
3. The colour grade, the camera framing, the visible extents of a set or location: these were authorial decisions to conceal. Our method treats that concealment as signal loss to be recovered. Is that a reading of the film, or a violation of it? Does the distinction survive contact with a tool that cannot tell the difference? On a working production, if backface reconstruction becomes routine, does the set extension stop being designed and start being inferred? What happens to the art department when the space behind the set already exists as a plausible default that someone has to argue against?
4. Consider what a film has already survived before it reaches us. Original negative, chemically colour-timed, cut, printed to a release stock, archived for decades, rediscovered, scanned, restored, remastered for Blu-ray, licensed to a streaming platform, remastered again, compressed for delivery, reassembled by the decoder in a domestic television. No two viewings in that chain are identical, and the grade, the framing and the grain were authorial acts before any of it began. The chain is lossy, not broken. Every step in it transforms captured information, and each transformation remains causally downstream of light falling on emulsion in a real place on a real day.
Our reconstruction step is the first one that does something categorically different. where the model resolves the backface, it does not transform captured information, it adds information that was never captured at all. This is what makes the splat a strange and critical object. It is indexical on one face and generated on the other, and the boundary between the two is not marked anywhere in the file. Two training runs on identical data will differ, but so will two prints of the same negative.
The distinction is that prints differ in how they render what was captured, while reconstructions differ in what they invent. Which raises the question: at what point in that long chain of transformations does an image stop being a record of something and start being a proposal about it?
5. In synthesising the cinematic space as an explorable and navigable environment we are shifting the audiences textual positioning from outside of the world, to inside the world. These experiments started as an exploration of a shifting textual position. In this presentation of work we have rendered the outcomes as filmic documents, but the models exist as spaces to traverse and inhabit. What effect does this have on our relationship to the text, and to our appreciation of the narrative we have experienced from the original text

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