



Immersion Room
CLIMATE CHANGE AND AI

MISSION

POWERS OF GEN

The IBM | NASA, open-source Gen AI, Geospatial transformer foundation models, offer infinite dimensions of actionable, life saving climate change solutions.

Faster than the speed of light.

POWERS OF GEN

Our immersive journey illuminates the legacy of this collaborative innovation, the magical powers of today's models in action, and a vision to exponentially expand the machine learning datasets.

OVERVIEW EFFECT

“It feels like we are scratching the surface of what we can do with this technology and this mindset together”

Dr. Juan Bernabé Moreno
Director of IBM Research Europe and
Climate & Sustainability Accelerated Discovery Lead

BOARDS

STORY ARC

We enter Earth's atmosphere through the viewport of the Gen AI models, targeting and leading us through environmental hotspots to the Arctic for a grounding moment of introspection.

- Challenge

STORY ARC

The new dawn of possibilities illuminated by the Universe and a NASA | IBM timeline, tracing paths of the positive impact at work in Africa and beyond.

Challenge

Solution

STORY ARC

From this pivotal inflection point, the journey apexes through beautiful, fluid data visualizations of rehydration, reforestation, renewal and hope; inspired to collaborate as on a shared mission to answer the big question.

• Challenge • Solution • Conclusion

CALL TO ACTION

- HOW CAN WE TRANSFORM YOUR BUSINESS AND THE PLANET - TOGETHER?

1 WALK IN



2 CHALLENGE



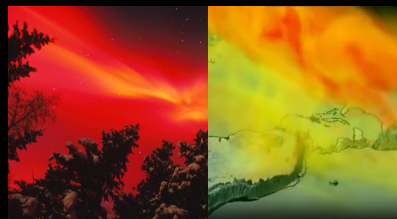
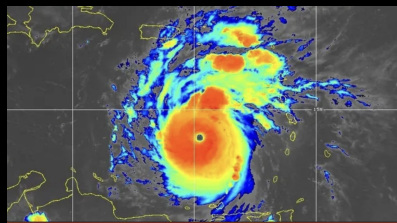
[Click to play reference](#)

VOICE: Today, our planet faces an undeniable crisis ... “climate change:

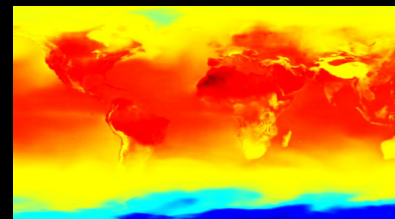
SOUND: A calming quiet moment before the storm.

VISION: We approach with a gentle orbital motion, gliding effortlessly towards our beautiful blue marble. City lights, wildfires, flight paths, seem to be communicating with each other. A beautiful rainbow of the aurora borealis forms a corona of hope under the layers of atmosphere.

2 CHALLENGE



[Click to play reference](#)



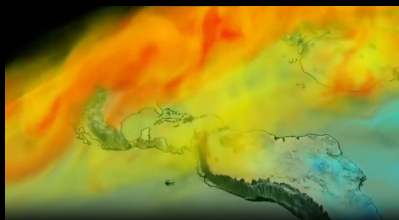
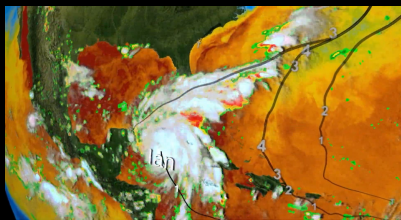
[Click to play reference](#)

VOICE: We see it in the rise of extreme weather events: catastrophic floods, raging wildfires, prolonged droughts, and sudden cloudbursts.

SOUND: A building cacophony extreme weather: forest fires, floods, tornadoes, hurricanes, waves destroying, industry choking, animals fleeing, reportage, many languages, sirens, satellite pings, modems, phones, phone alerts, static, glitches. SOS... --- ...

VISION: Falling through the aurora colors get hotter and we feel we are falling faster through a barrage of disaster alerts, hurricane eyes, high resolution heat imaging, particles, data, texture, chaos. It feels like a vortex of AI models making millions of calculations, comparisons.

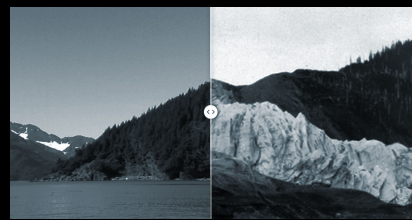
2 CHALLENGE



[Click to play reference](#)



[Click to play reference](#)

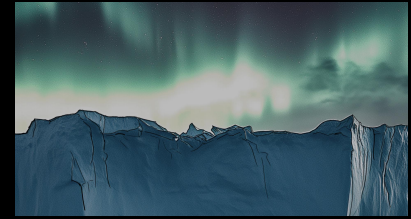
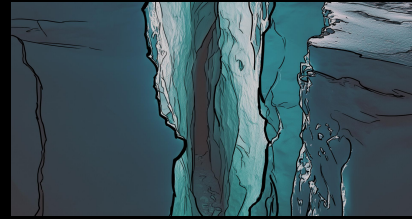
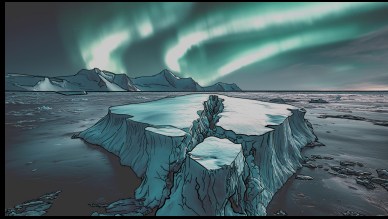


VOICE: “These are not isolated occurrences; they are symptoms of a planet in distress.”

SOUND: The sound design becomes more ominous and visceral sounds of floods, raging fires, lava flows, epic waves, hurricanes.

VISION: All around us now in this colorful cloud, we pick up hints of climate crisis footage, reportage, animals fleeing, from what we hear vortexing around us like as if we are in the middle of a tornado. As the colors start to fade to grey and the mist clears we find ourselves in the middle of the Arctic flying over a glacier.

2 CHALLENGE

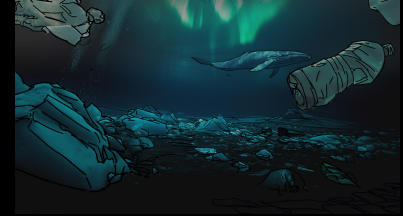
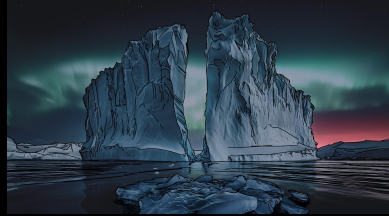
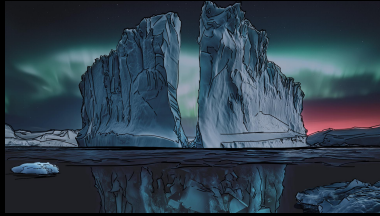


VOICE: “Failing to meet these targets will lead to dire consequences: rising sea levels, more frequent heat waves, and the disappearance of critical ecosystems”

SOUND: Icy wind, visceral ice cracking and glacier falling

VISION: We pull through the crevice of glacier through to reveal we are stranded on a block of ice that is melting away from the rest of the glacier, confronting our impact.

2 CHALLENGE



VOICE: “As of today, we are not on track to meet these goals.

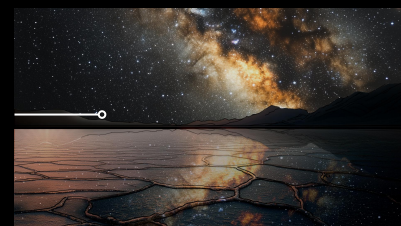
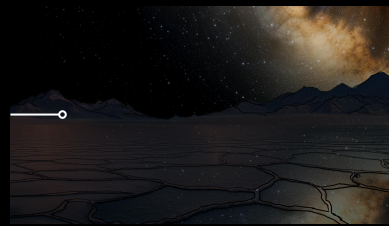
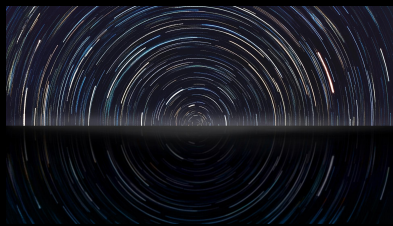
SOUND: Cracking ice, cold wind, bears, water, silence, 52 hz whale sound

VISION: We are sinking slowly and the water level rises from the bottom of the screen until it is at our shoulder height. Underwater we see plastics and dead fish, suspended in the icy darkness indecipherable from bioluminescent jellyfish / plankton. The aurora sets like a red ominous sun on the surface of the water that is now at our eye level. Then Darkness, silence, a moment for self reflection.





3 SOLUTION

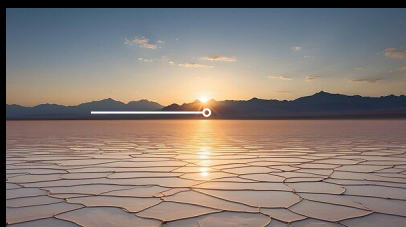
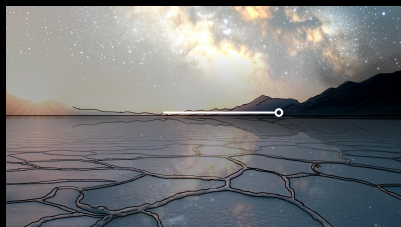


VOICE: But there is hope. Technology—especially AI—is changing how we confront this challenge. Advanced tools are providing new ways to find solutions. "Satellites from NASA, the European Space Agency, and others have been collecting Earth data for decades.

SOUND: A new dawn, positive, uplifting trajectory. Subtle background sfx texture from the NASA sound library "liftoff" Tuning in and out of historical moments like an analog am radio/ or NASA communications with satellites, astronauts. Introduce a new sound alluding to our world of twinkling AI data

VISION: From the darkness the stars start to twinkle and we are mesmerized by the the rotation of the stars in timelapse. The camera pulls back slowly over the reflection pool of the Salinas Grandes salt flats with a contrazoom, and the timelapse turns to a slow rotating galaxy.

3 SOLUTION

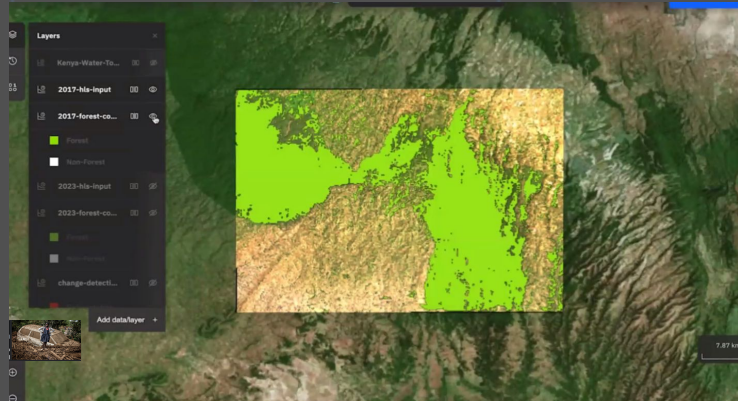
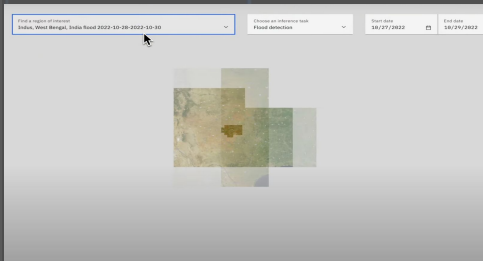


VOICE: But with such vast data volumes, insights were elusive—until now. AI, especially Generative AI and Foundation Models, are changing the way we understand and work with all this data." "Building on their rich legacy of collaboration, from the Apollo missions to the Space Shuttle program, NASA and IBM reached a new milestone in 2023 with the creation of the Geospatial Foundation Model"

SOUND: A warm swell as the sunrises over the distant sound of NASA launches. "One Step for man, One giant leap for mankind"

VISION: As we pull wider, distant rock formations seem to grow larger like sound waves as the music swells. We feel like we are standing on the launch pad of a new NASA mission and the room takes on a calming, shifting, gradient glow. A graphic line cruises the horizon like a land speed test, trawing points in the history of the IBM NASA collaboration.

3 SOLUTION - Kenya



VOICE: "The Geospatial Foundation Model has been put to work in Kenya, where the government aims to restore forests and water supplies.

SOUND: Geospatial model sfx, and UI interactions. Sounds of Kenya, forests, timber falling, chainsaws, tractors, voices, farm animals

VISION: We transition from the Salt Flats fading off and on overlapping quadrants that mimic the UI of the Geospatial models, and navigate to kenya through the eyes of the real model. We become immersed in the UI and different case studies begin to populate the screens through a grid that starts to form from the overlay vertical scroll line.

3 SOLUTION - Kenya

Devoxx
2018

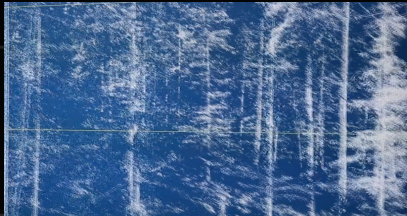
Antwerp
Belgium
November
12-16

[Register](#)

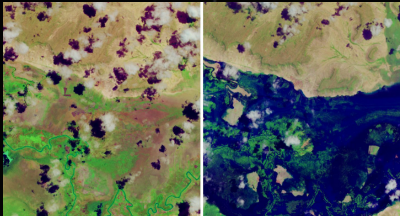
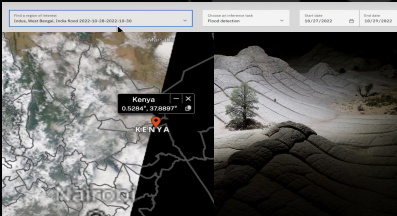
Seeing data security breaches with
your own eyes

© IBM

Informed



No more
breaking
things



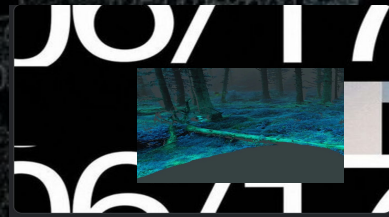
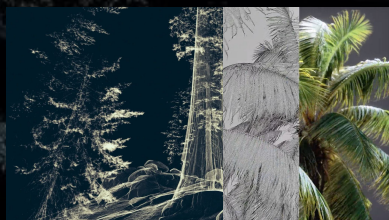
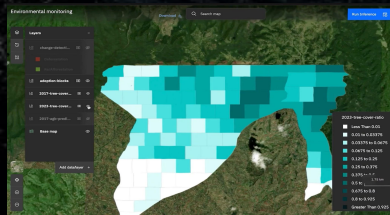
Click to play reference

VOICE: Years of deforestation have caused water scarcity in vulnerable areas. Kenya's National Tree Growing Initiative plans to plant 15 billion trees by 2032 to increase tree cover from 12% to 30%."

SOUND: Geospatial model sfx, and UI interactions. Sounds of Kenya, forests, timber falling, chainsaws, tractors, voices, farm animals

VISION: A section of the grid expands and opens us deeper into an area of deforestation and we switch to grey playblast mode for the whole screen and see the development of reforestation projects. From a grey screen we rebuild an immense area with trees and move the camera over them shot graphically from above and tracking through them as they rebuild. The vertical scan line wipes between on various render passes and we are surrounded by trees. Rather than going photoreal at the end, all the data turns to beautiful particles.

SOLUTION - Kenya



VOICE: Using NASA and IBM's Geospatial Foundation Model, Kenya was able to monitor the progress of their reforestation efforts. While satellite images may seem indecipherable, the model translates them into actionable insights, tracking land usage and changes at scale across Kenya's water towers, or forested areas used as water catchments "The model also estimates biomass, helping attract investment through carbon credits, making Kenya's participation in the global Carbon Economy possible."

SOUND: Positive sounds from a flourishing rural economy, happy children, market laughter, soundbytes from African spokesperson

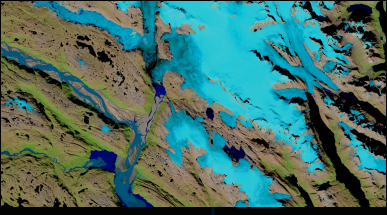
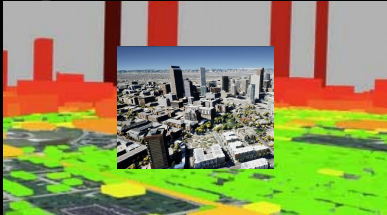
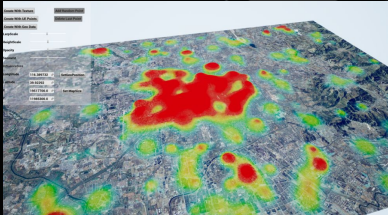
VISION: We stay immersed in an IBM grid holding boxes of case study footage, slideshows of stills, animated loops of cg trees, typography

SOLUTION - Johannesburg

Seeing data security breaches with your own eyes

Other

Informed



No more breaking things

VOICE: In Johannesburg, South Africa, NASA and IBM’s Geospatial Foundation Model helps identify Urban Heat Islands—areas where cities are significantly hotter than surrounding rural regions. This excess heat strains infrastructure, increases energy demand, and poses health risks. The model provides high-resolution insights into urban heat, enabling researchers to identify the most affected neighborhoods, provide early warning alerts for vulnerable individuals, and guide urban planning to mitigate these effects. As cities grow, understanding urban heat dynamics helps local authorities plan better, creating green spaces and implementing heat-mitigation strategies.

SOUND: Dense hot city sounds, heavy industry choking

VISION: The model calls up Johannesburg and we move seamlessly over to the dense city revealing and studying hotspots everywhere compared to the cooler rural areas.

SOLUTION - Prithvi

Seeing data security breaches with
your own eyes

Office

Informed



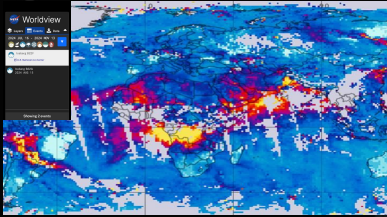
No more
breaking
things

Click to play reference

VOICE: In 2024, IBM launched the Prithvi-weather-climate Foundation Model, designed to enhance our ability to understand and predict climate patterns. This versatile model can be quickly adapted for specific applications like storm tracking, forecasting, and climate analysis.

SOUND: Hurricane, wind, rain, UI sounds

VISION: The grid image builds like the Geospatial model and we navigate to a region known for storms (USA?)



Devoxx
2018

Antwerp
Belgium
November
12-16

[Register](#)

Agenda

Sunday
May 1

4:00 PM
Registration
Let's Go

Cloud
Storage
Symposium

SOLUTION - Prithvi

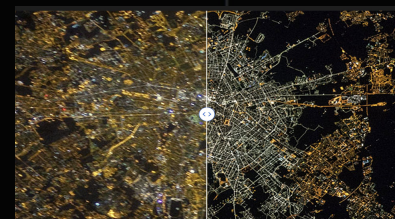
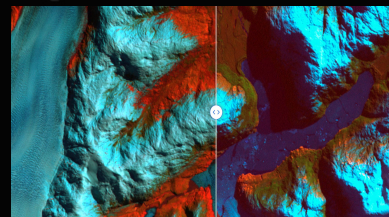
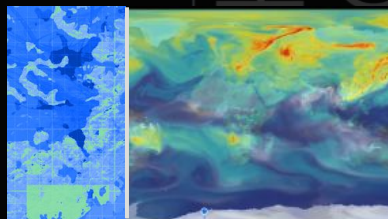
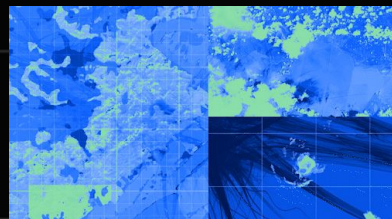
Devovx
2018

Antwerp
Belgium
November
12-16

[Register](#)

IBM Security

10x



No more
breaking
things

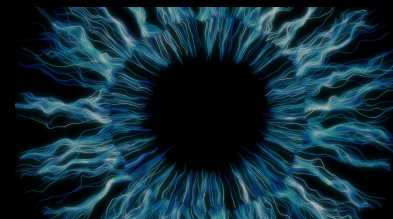
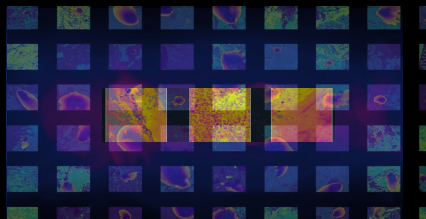
VOICE: The model uses downscaling, a method that translates low-resolution climate data into high-resolution outputs. This process, which traditionally took days or weeks, can now be done in minutes and at a global scale. By inferring detailed, localized forecasts from broader data, the Prithvi model offers unprecedented precision. At high resolution, it can generate weather forecasts with varying time horizons, project climate changes at scale decades into the future, and detect extreme events like hurricanes.

SOUND: Start the rise of crescendo to the next section while we watch these images getting sharper. A sonic cue could pick up the higher resolution states

VISION: We stay in a fullscreen experience of the before and after states of key global hotspots and pause for a minute to take in the incredible images downscaling and uprezzing. The vertical white line travels slowly masking like a squeegee clearing our view into a beautifully dataviz world of incredible animated detail and precision. It feels like a giant core sample of a positive future we can see and believe in.

CONCLUSION

```
1 from sentence_transformers import (
2     SentenceTransformer,
3     export_static_quantized_openvino_model,
4 )
5
6 # 1. Load a model with the OpenVINO backend
7 model = SentenceTransformer("all-MiniLM-L6-v2", backend="openvino")
8
9 # 2. Quantize the model to int8, push the model to Hugging Face
10 # as a pull request:
11 export_static_quantized_openvino_model(
12     model,
13     quantization_config=None,
14     model_name_or_path="sentence-transformers/all-MiniLM-L6-v2",
15     push_to_hub=True,
16     create_pr=True,
17 )
```

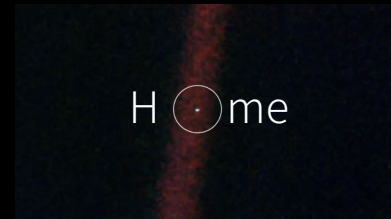
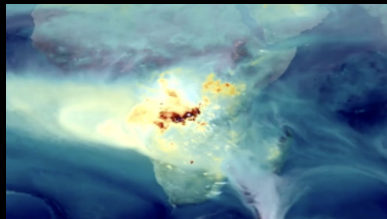
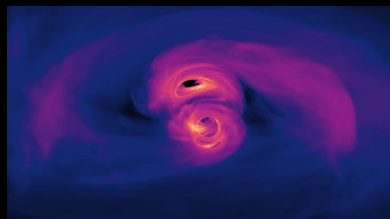


VOICE: But no one can solve this alone. Collaboration, inclusivity, and open-source technology are essential to accelerate our response. Through platforms like Hugging Face, AI models are available to scientists worldwide, empowering a global effort.

SOUND: Build up sound effects of happy communities, satellites communicating, keyboards, fluidity, speed

VISION: An experiential moment to show the interconnected, exponential scale and speed of AI with many examples that pull wider, grid more, turn to particle waves. We will also see positive images of people, animals collaborating

CONCLUSION



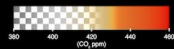
VOICE: AI has given us a new way to understand and address climate change. Together, we're transforming our world. Now, the question is: How can we transform your business—and our planet—together?

SOUND: Rising crescendo of all motifs and a poignant ending button.

VISION: We gently rise from the earth swarming with beautiful new ways of seeing ourselves in the particles of data that NASA and IBM and Gen Ai is using to help use save our home. The final image is satellites mapping the earth

CALLING

How can we transform your business—and our planet—together?



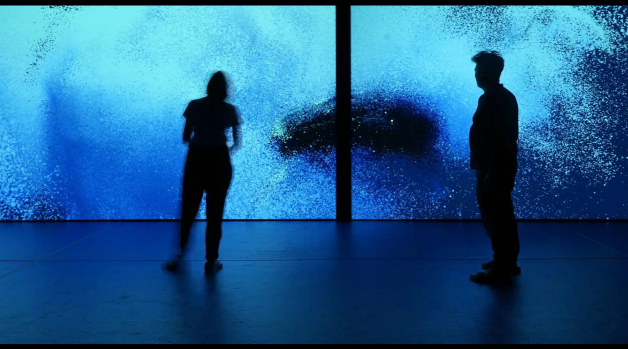
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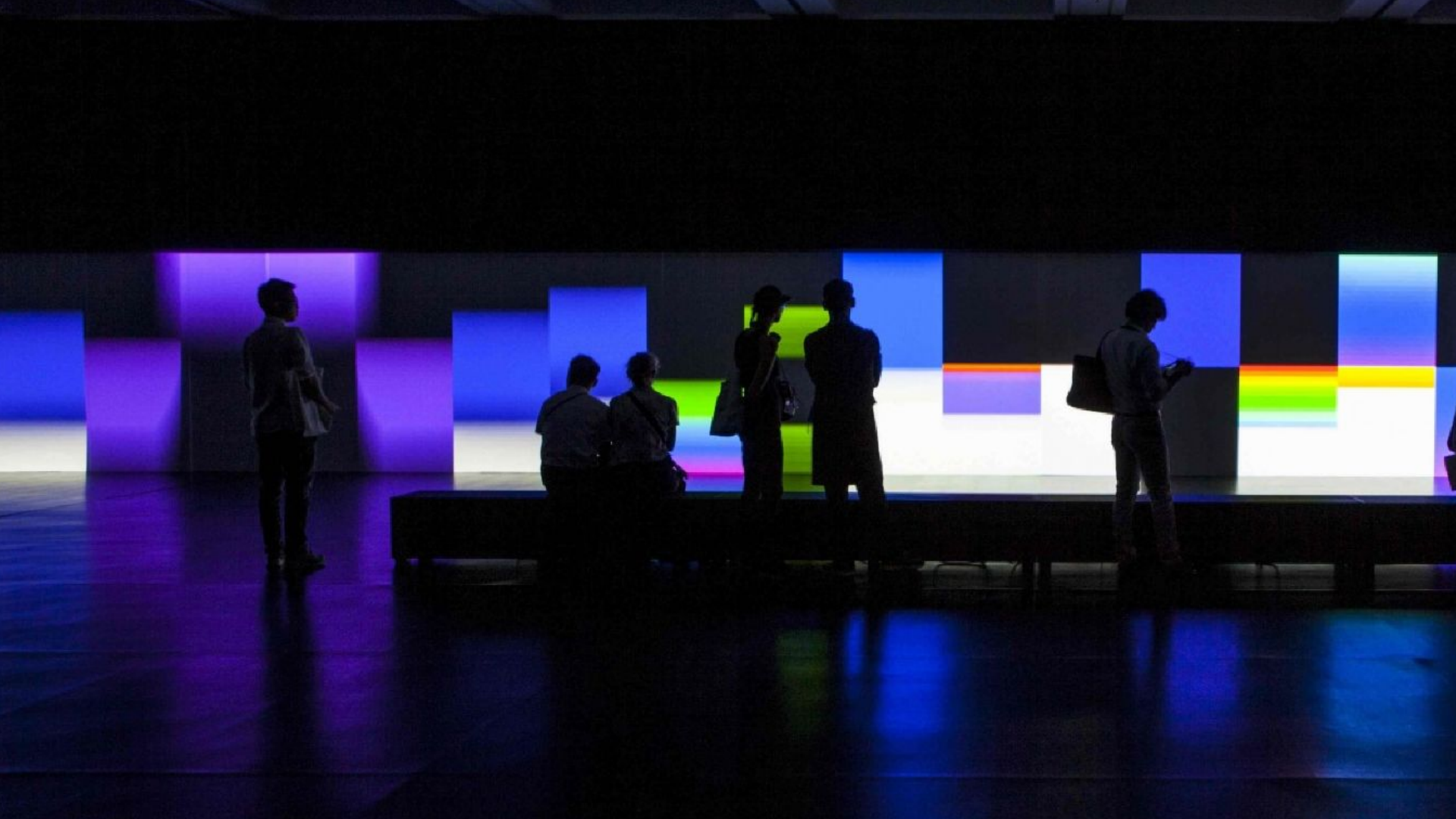
LOOP RESTARTS

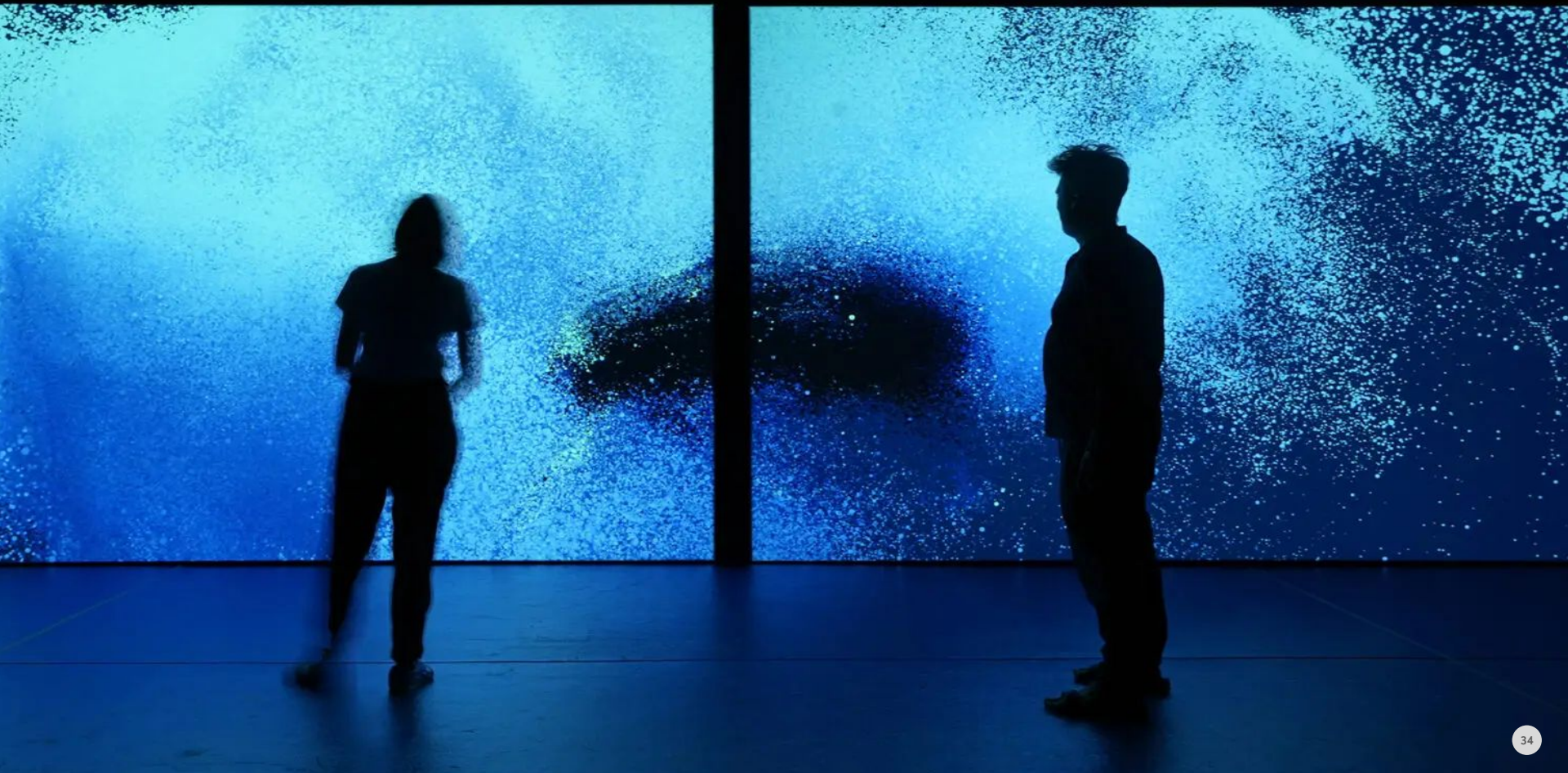


The background of the slide is a surreal landscape. The ground is a vast, flat expanse of cracked, blue-green earth, resembling a dry lake bed or salt flat, with the cracks forming a complex, organic pattern. The horizon is a straight line in the distance, with a dark, silhouetted mountain range visible on the left. The sky is a gradient of dark blue and black, with a thin, glowing orange and yellow line along the horizon, suggesting a sunset or sunrise. A single, thin, white circle is positioned in the center of the sky, slightly above the horizon line.

Experience







SOUND



SONIC

The sound design drives and enhances the emotional experience: geolocating, overwhelming, informing, uplifting, pausing, grounding, restoring balance. It will layer in textures of data crunching, archival NASA | IBM sounds and a new sound to represent AI models and possibilities.

MOONSHOT

We are inspired by the pioneering spirit of NASA's Golden Record and Space Oddity that reaches out to different audiences.



• NASA Space Oddity



• NASA Golden Record

VOICEOVER

The gravitas that their voices from science and the planet would be a powerful injection of humanity.



• Neil deGrasse Tyson



• David Attenborough

MUSIC

Combined with a music score
from a world class musician.

A side-profile photograph of Philip Glass, an older man with curly hair and glasses, wearing a dark blue shirt. He is seated at a piano, with his hands on the keys. The background is a dark, atmospheric landscape with mountains under a starry night sky. A thin white vertical line separates the text on the left from the image on the right.

• Philip Glass

MUSIC

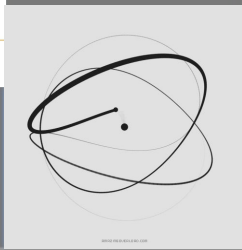
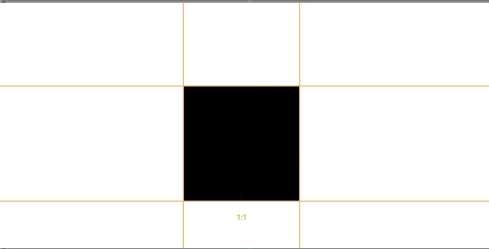
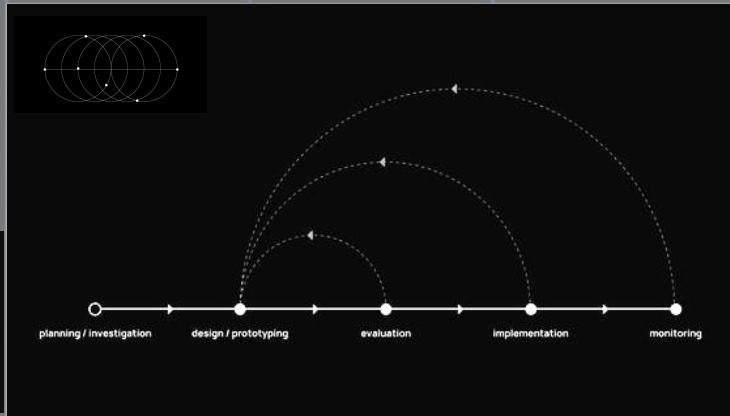
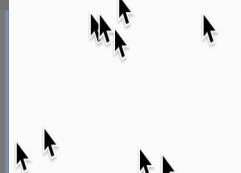
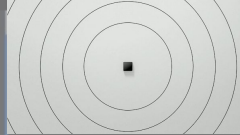
The butterfly effects could be Quantum.

- Brian Eno

NEXT STEPS

FORMALIZE ELEMENTS

- Create a visual system for the case study sections using the IBM Grid and design language.
- Transition styles mimicking Geo Model UI map loading.
- The consistent horizon / equator through line
- Refine the color story
- Grey playblast / map background default state.



Sunday
May 1

4:00 PM
Registration
1st Floor

STRAVA #YEAR

TOTAL ELEVATION

2021 ELEVATION GAIN

75,307

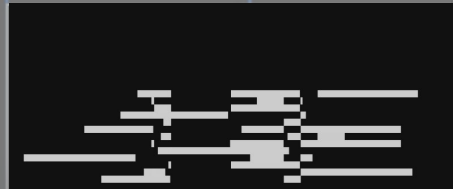


ELEVATION GAIN IN 2020

63,765

Dress Code | IBM

Fact with small description acting
as headline or title of the page



Obrigado
Danke
ありがとう
Thanks

Please view this deck as a starting point of a collaboration.
We look forward to developing these visual ideas further with
your feedback!