

NODE LOGIC AND LIVE VISUALS

Digital artists demonstrated how they build audio-reactive performances using TouchDesigner, open-source node environments, and live motion tracking.

Leon Krykhtin – Art Director and Visual Artist

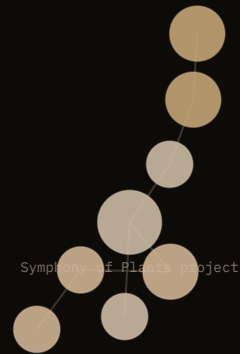
Luca Bonaccorsi – Audiovisual Artist

Alberta Leong

Claudia Tay

Block E2, The Hub (E2-1A), Republic Polytechnic

6 May 2026



26

CONCEPTS

21

CONNECTIONS

5

CLUSTERS

The high concentration of nodes around software integration reflects the panel's focus on connecting disparate tools rather than relying on a single platform.

“ fractured relationship with nature

“ translating numbers so music can control visuals

“ messenger sending data from TouchDesigner to Ableton

“ compensates for species destroyed by climate issues

THE ROOM

The SG TouchDesigner Community Meetup #2 took place at Block E2 of Republic Polytechnic on 6 May 2026. Attendees included creative technologists, visual artists, and recent workshop participants. The session focused on the mechanics of live audiovisual performance. Two speakers joined remotely: Leon Krykhtin presented from Shanghai, and Luca Bonaccorsi presented from Taipei. A local duo, Claudia Tay and Alberta Leong, presented their joint project afterwards. The presentations moved past theoretical workflows and showed the actual project files. Krykhtin detailed how he managed a large array of hardware and separate TouchDesigner files during a live dance performance, explaining his workaround for the loading gaps. Bonaccorsi demonstrated his use of TiXL, an open-source alternative, by linking audio frequencies to a mesh radius on screen. The final presentation broke down a gesture-controlled system built over a recent workshop, routing data between two separate laptops to control both sound and visuals simultaneously.

SPEAKERS

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EXECUTIVE SUMMARY

The session began with Leon Krykhtin breaking down his post-nature performance project. He built the show around the fractured relationship between humanity and nature. Krykhtin acted as art director, working alongside a creative technologist and two dancers. They mapped out the entire sequence on a curation board, planning the connection between multiple distinct art pieces down to the minute. He noted that an exhibition format allows people to wander, but a performance format requires strict temporal control from start to finish.

For the visuals, Krykhtin ran TouchDesigner alongside generative AI and particle simulations. He captured the dancers using an Orbbec Femto Bolt camera. The system fed their movements into stream diffusion, transferring prompts onto the LED screens in real time. He also deployed a LiDAR sensor with a 20-meter range to track audience interaction. All these inputs routed into TouchDesigner running on an RTX 4090. He mentioned that working with dancers requires extensive rehearsal to ensure they understand the tracking boundaries of the depth-sensing hardware.

Luca Bonaccorsi spoke next from Taipei. He teaches TouchDesigner but shifted his focus to TiXL, an open-source visual programming environment. He started using it after working with Taiwanese musician Lim Giong and the Open Culture Foundation. Bonaccorsi treats the computer as an instrument. Rather than playing a pre-rendered background video, he listens to the live music and splits the incoming audio into low, mid, and high frequencies. He translates those numbers into colors and shapes, responding to the musician's choices.

"Having everything in one file wouldn't work, so I kept them as separate files."

Leon Krykhtin

He demonstrated the software interface on screen. He showed how he could build geometry without exporting assets from other programs. By linking the low-frequency audio to the radius of a shape, the visual output reacted instantly to the sound. He emphasized that the logic remains similar to TouchDesigner or Max/MSP, but the open community access makes it a distinct alternative.

Claudia Tay and Alberta Leong closed the session with their Symphony of Plants project. They built it during a recent crash course in TouchDesigner. Tay explained that they used MediaPipe within TouchDesigner to process video input and detect a person's hand positions. They set up a radial point-cloud effect using instances to represent the data visually.

The visual system did not generate the audio on the same machine. Tay sent the processed signals—including hand positions and foot stomps—via Open Sound Control to Leong's laptop. Leong ran an Ableton project mapped to receive those signals. She used the TDableton package as a messenger to link the two applications, mapping the gesture data to track volumes and instrument selection. The meetup concluded with a brief discussion on organizing tutorial clinics to help attendees build similar toolchains.

"I had to shut down the previous file and open the next during the performance."

Leon Krykhtin

KEY THEMES

01 File sequence logic

Krykhtin explained his method for handling a complex live performance. He kept his scenes in separate files rather than combining them into one master project. He shut down the active file and opened the next one while the performance continued. This approach prevented hardware overload.

02 Depth sensor constraints

Krykhtin detailed the process of rehearsing with live performers and a depth-sensing camera. The dancers had to learn the operational limits of the tracking hardware. They practiced staying within the detection boundaries and moderating their movement speed so the system could read them without failing.

03 Node-based mesh generation

Bonaccorsi demonstrated how to build geometry inside TiXL. He drew a sphere mesh in the software without relying on external 3D modeling tools. He then linked a low-frequency audio source to the radius parameter of the sphere, making the object react to sound.

04 Distributed audio-visual rendering

Tay and Leong split their performance workload across two computers. One machine handled all the gesture detection and visual generation using TouchDesigner. The second machine ran Ableton to handle sound processing. They passed control data between the two systems over a network connection.

05 Open-source longevity

Bonaccorsi discussed his shift toward independent node-based software. He prefers TiXL because the entire codebase is available for anyone to modify. He stated this makes the tool future-proof compared to proprietary alternatives.

06 Instance-based point clouds

Tay outlined the visual architecture of their team's project. They built a radial layout using TouchDesigner instances. The system mapped incoming gesture data to alter the point-cloud effect in real time based on hand movement.

SPEAKER PERSPECTIVES

Leon Krykhtin Art Director and Visual Artist

Krykhtin based his post-nature show on humanity's fractured relationship with nature. He used a virtual production XR studio outfitted with high-performance LED screens on the walls and ceiling. He built a curation board to map out all the assets and plan the precise sequence between the different art pieces.

He abandoned an early concept focused on Costa Rican flora and fauna because the team did not have enough data. Instead, he built a living digital environment using real-time TouchDesigner, generative AI visuals, and particle simulations. One scene loaded AI imagery while a particle simulation made the images more lifelike as they interacted with the dancers.

He deployed a hardware array consisting of an RTX 4090, Leap Motion, an Xbox game controller, and an Orbbec Femto Bolt camera. He added LiDAR semantics with a 20-meter range for audience interaction. He noted that coordinating rehearsals takes time, and he prefers smaller teams when building projects that require two to five months of development.

Luca Bonaccorsi Audiovisual Artist

Bonaccorsi teaches TouchDesigner in Taipei, focusing on the creative aspect of editing and building sequences over time. He tells his students there is no magic software. He focuses his lessons on translating numbers so that music frequencies control what happens inside a geometry.

He shifted to TiXL, an open-source software, after working on a project with Taiwanese musician Lim Giong. The Open Culture Foundation promoted Creative Commons sharing, which led him to an independent platform. He appreciates that everything inside the software is available for modification.

During live performances, he connects his laptop to an audio interface to receive the incoming sound. He maps a MIDI controller to operate the camera positions and color inputs. He communicates with the musicians, listens to their references, and builds a system to react to their sound rather than preparing background content in advance.

Claudia Tay and Alberta Leong *Symphony of Plants Creators*

Tay and Leong met at a recent TouchDesigner crash course and decided to build an audio-reactive project from scratch. Tay had six years of prior experience with the software and guided the technical execution. They used MediaPipe to detect a person's hand positions from a live video feed.

They routed the data from TouchDesigner into Ableton using the TDableton package. This served as a messenger to sync the two programs. They linked the tracked hand gestures to Ableton parameters to trigger instruments and adjust track volumes.

They emphasized the importance of the community structure that led to the project. They joined the workshop with no initial concept and developed the idea while struggling through the software together. They plan to continue this format by organizing mini-clinics to help others build interconnected toolchains.

LESSONS FROM THE ROOM

01 Poetry as loading screen buffer

To cover the downtime when shutting down one TouchDesigner file and opening the next, Krykhtin ran AI-generated poems. These featured synthesized voices and lasted between 30 and 60 seconds to maintain the performance flow.

02 The post-nature compensation concept

Krykhtin designed his generative particle simulations to represent a new form of nature. He programmed the visual output to conceptually compensate for species lost to climate issues and human negligence.

03 MIDI controller overrides

While Bonaccorsi lets the audio frequencies drive the shapes, he retains manual control over the visual environment. He maps a MIDI controller to his setup to manually trigger color shifts and adjust camera angles during the live set.

04 Expanding square aspect ratios

For a separate performance in Shanghai, Krykhtin used an interactive AI plugin that output square content. He mirrored and laid out the square stream diffusion output to fill a super wide screen format.

Join the upcoming mini-clinics

The community organizers are planning smaller tutorial clinics to practice node logic and tool integration. Attendees can bring their ongoing project files for collaborative troubleshooting.

Leon Krykhtin · Luca Bonaccorsi · Alberta Leong · Claudia Tay

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at Block E2, The Hub (E2-1A), Republic Polytechnic

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