The Institute for Interanimation:
A Framework for New Media Collaboration

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Abstract

This paper reflects on an experiment in new media art and pedagogy that combined technical research with creative output through a collaborative large-scale project. Developed at the University of Virginia, the Institute for Interanimation provided a framework for faculty, students, and local artists to collectively build an audiovisual environment called *Phase 3*, exploring how new technologies continually reframe what it means to be (a)live. Virtual reality pods, interactive objects, and live animations examined the social and cultural implications of mediation, virtuality, and liveness across hybrid physical/digital spaces. Outlining a conceptual and practical framework for collaboration, the authors discuss the shifting objectives of the Institute for Interanimation, an organization dedicated to exploring the unpredictable and continually shifting thresholds between 'real' life and 'virtual' life. This paper seeks to present a few frames culled from a much longer animation. It outlines a multifaceted and practical approach to new media pedagogy that moves between the technical and the critical, the classroom and the stage, the live and the live. The intention is to share an attempt at developing an institutional structure based on change rather than permanence without shying away from tensions and complications that emerged within the process.

Keywords

art, interactive systems, collaboration, new media, media installation, responsive environment, audio/visual systems, art and technology, live performance, audience experience

Phase 3: A Walkthrough

You enter the black box theater and pass through a small room where you are greeted by a glowing round fur covered light—ii—both organic and electronic (Figure 1). One of the i's is mirrored and together the serif i's forms a strange u, also eyeballs. You hear music, a shifting synthetic wash, not loud, you continue.

Through the inner door, you find yourself in another chamber. It is dark save for a grid of 20 head-like forms that slowly warp and morph under shifting projected light (Figure 2). You continue through an opening in the curtain and find yourself in *Phase 3*, an installation developed and designed by the Institute for Interanimation.

There are various glowing systems arranged in a large circle. The systems are human-sized and slowly animating—blinking, swinging, talking, spinning—they ask you to join them. Some of their scripts are clear—"turn this dial" or, "pluck these strings," but some of the systems seem ambiguous or unresponsive. You watch for a bit (Figure 3).
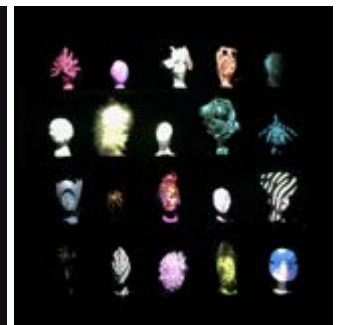

Figure 1. Entrance Light

Figure 2. Grid of Heads

Figure 3. *Phase 3*, The System. © The Institute for Interanimation

Other guests are moving around, playing and performing in the space. The ambient soundscape shifts suddenly, diving down and settling into a lower, slightly ominous drone. You walk around the main area and pick up a glowing fur covered object near a screen in the corner of the room. It turns out to be a live camera and, with an active feed in hand, you start to explore the space, sending your perspective back to the screen (Figures 4 and 5).

You watch as electro-mechanical mechanisms click and clack for seemingly no reason. "Is it tracking my movement?" you ask another guest. "No!" a child corrects you, "see those tentacles over on the other side? If you shake them, this thing wakes up!"

Figures 4 and 5. Live Feed. Audience members stream their perspectives to the screen using live, fur-covered camera devices. © The Institute for Interanimation.

As you walk around, you discover the room is full of these strange connections—a sound here activates an effect over there, moving a camera over there changes the projection here. There are no clear instructions and no formal guides, just objects, interfaces, and other participants. It is unclear what is "live" and what is fixed and difficult to determine when your actions will influence the system as a whole. You notice that the children in the space seem less cautious about their relationship to the system, and everyone seems drawn to the more direct and clear control paradigms (Figure 6). You're not sure what to do with this information.

Figure 6. A robotic turntable camera module is manipulated by a young guest of the institute. © The Institute for Interanimation

You lose yourself for a few minutes in a virtual reality pod that offers a 360-degree perspective into a movement performance that appears to be taking place in the same space (Figure 7). There was no performer outside the pod; are they from a different time? You gasp when upon turning around the dancer is suddenly in your face, "enough of that." You duck out of the pod only to discover that your audible gasp has now been added to the soundscape permeating the space. The system is using you.

Figure 7. Virtual Reality Pod with embedded 360-degree video of a dancer moving in the same space at another time. © The Institute for Interanimation

You stay in the space for about half an hour, cautiously exploring the various interconnected modules, inspecting the details, stepping back to watch the social dynamics. It is part science museum, part techno cult, and part Silicon Valley showroom. You're not sure how to feel—do you give in to the animated spectacle or keep your distance? You are wary of the undertones of control and the glorification of surveillance aesthetics.

You leave the same way you entered, but the animated heads seem slightly more ominous and the logo, still playful, becomes a knowing nod… The Institute for Interanimation—hmmm.

Interanimation: A Framework

As media artists, we find ourselves in a complex moment where the optimism surrounding digital technology which was prevalent in the 1980s and again during the dot com era has been appropriated by the control structures of late capitalism. The promise of free thought, anonymity, and fluid identity in the virtual realm, has become a complex tangle of surveillance, data mining, trolling, and gatekeeping. As technologists and artists, how can we continue to explore the potential of the digital realm for social and political change while not simultaneously being instrumentalized in the spectacle of Silicon Valley idealism?

The Institute for Interanimation (ii) is an attempt to play into this very tension, to build work right into the rift between technophilia and technophobia. The Institute for Interanimation was created to support systems that are ambiguous, complicated, and difficult, producing environments in which people can examine what role they are comfortable performing in this ubiquitous technoculture.

Co-developed by the authors to hold these often conflicting research perspectives (human care and technological progress) in tension, interanimation came to define our collaborative process and became a refrain to

release tension during long work sessions. Interanimation navigates the unpredictable and forever shifting thresholds between real and virtual life, and the confusion generated by these overlapping modes of liveness.

Here, the word 'live' has a double meaning—"live" as in *to be alive* and to be *performing live*. Today's new media technologies urge us to reconsider both meanings. Immersive technologies, surveillance media, and new sensing systems not only shift our performance stages but they also continually affect what it means to be human, framing how we think and act. New media installations are adept at exploring the intersections and overlaps between these modes of liveness, combining technological perspectives (A.I., virtual reality, augmented life) and cultural perspectives (community, poetics, entertainment).

Merriam Webster defines "interanimate" as "to animate mutually," and that simple definition still guides our thinking. The concept of mutual animation has crept into our critical, technological, and creative spaces. In a concrete sense, interanimation happens when multiple bodies are in-motion together—human bodies, virtual bodies, technological bodies. It appeals to a continual shifting or reconsideration (of identity, of a 'piece', of value systems in general). The framework is a useful way of discussing the relationship between people and the technologies they create and use. In creating new tools and technical systems, we change, and as we change, our tools and systems evolve and transform as well. The Institute for Interanimation seeks to foreground this change, to embrace the mutual animation between the performer and instrument, user and interface, human and institute.

The notion of animation has embedded within it a similar tension. We can think about animation in this technical sense—the emergence of motion over time through a sequence of still images or frames. But we can also consider animation in a poetic sense, animating as the act or process of bringing to life, creating movement not as simply a useful effect, but as a vital mode of expression. Animation is an ideal tool for examining this double nature of (a)liveness, and it is also useful in thinking about the interfaces and objects we produced. The outputs of *Phase 3*, the first large-scale collaborative environment by the Institute for Interanimation, animate in a technical sense, resolving as motion in time. They are also lively in the poetic sense, asking guests to interact with systems as vital, willful agents.

Institutional Trajectories

Rather than attempting to project objectives in hindsight or appeal to a clarity of design, we have outlined four trajectories that represent how our ideas changed as the process unfolded. Our goal here is to document our collective movements and interanimations, attending to the ways in which our objectives shifted over the course of the year-long process.

Theoretical

The Institute of Interanimation (ii) was initially conceived as a hybrid research/practice platform exploring what it means to be alive and to perform live in the networked era. By combining new media perspectives from areas of theater, immersive video, sound, and interface design, we set out to think critically about the ways in which digital and networked technologies script individual and collective experience. Throughout the process, we returned to these considerations, but with a less deterministic lens. In working, it felt clear that while new digital technologies and those who develop them do script behavior and performance on and through them, the ways in which they are taken up institutionally have an even greater impact on our relationship to them and each other.

Design and engineering disciplines often create new interfaces and platforms for research and knowledge production within an academic context. We became interested in what value systems are embedded within these new technical systems, and how the arts, specifically open-ended processes, might contribute an alternative methodology for digital system design—perhaps less beholden to the tenants of efficiency and productivity.

As part of this project, we discussed who stands to benefit most from efficient interfacing. Efficiency requires a known goal or a predetermined destination, limiting the range of outcomes to produce the satisfaction of arrival. One can always be more efficient—it keeps things in order and under control. Efficiency produces not only predictable outcomes but predictable users. It works both ways. The Institute for Interanimation was designed as a home for the experimental, unpredictable, and often inefficient process of collective art-making.

Pedagogical

As educators, we are committed to creating learning environments through which faculty, students, and community artists work side by side, sharing skills, perspectives, and experiences. Another goal was to further introduce students to the affordances and frustrations of working with new technology in a practical setting.

In Spring 2017, we designed and co-developed an approach to teaching new media/digital performance in our classes, in different departments. One course focused primarily on sound and the other on projections and visuals. We also invited guest artist Andrew Scott to present his work and hold a workshop on projection mapping techniques for both groups of students.

While our initial plan for the courses included developing work for a large-scale production, we quickly

realized that the dedication required would be asking a lot of many of our students. While the students we worked with in *Phase 3* came from those courses, participation in the project was not a required. The Institute for Interanimation became a place for students devoted to live media arts, and ultimately five students played major roles in the project's generation and execution.

Experimental

The Institute for Interanimation fostered a transformative working space through interdisciplinary exchanges. It allowed us to carve out a space and funding for interfacing between different types of artists and perspectives. The complexities of experience were welcomed, as were divergent approaches and methodologies.

The platform was developed not only as a creative collaboration between the authors but an opened-ended learning space for practical interdisciplinary project-based research. In addition to exposing students to a range of new media frameworks and providing hands-on experience with the affordances and frustrations of working with new technology, ii was also an exercise in collective dynamics. What started as a utopian model of horizontal collectivity where all creative perspectives were equal, became a centrally curated collection of interactive modules. This shift was born out of practical and economic considerations, in addition to internalized institutional pressures to produce a definable thing that functioned appropriately within a space used for theatre. This shift was both disappointing and revealing—and a frequent topic at ii board meetings/dinner parties.

Institutional Systems

From the onset, we wanted to play with the formality and fixity of traditional academic structures and the institutional frame provided a space for intervention—an institute dedicated to change and self-reflection seems at odds with the permanence and weight of typical institutional structures as well as columned grandeur of our University's campus. We borrowed institutional language from both academia and Silicon Valley tech companies. We used a few different generators and algorithms to combine text from eight local institutions and found ourselves with a mission statement and marketing text that played on the line between comedic nonsense and unsettling futurism. We gave every collaborator an institutional title—directors, fellows, and visiting fellows—and used computer generated texts for their biographies.

This interplay with the structures and practices of contemporary institutions and the techno-idealist culture of Silicon Valley permeated the exhibition's promotional materials as well. The invitation for *Phase 3* was generated

from the marketing materials of several high profile institutions, and the talking points "production of social knowledge," and "economically sound," further complicated the goals of the system. From the invitation:

The Institute for Interanimation is pleased to announce phase 3 of our media platform, ii, an interactive environment navigating between here and there, now and then, on and off. We focus on economically sound virtual lives, supplying short-term low-impact hybrid mediums that use the human form to facilitate the production of social knowledge. By designing unique ethical realities into all of our products, ii ensures that your other selves will remain competitive in tomorrow's world. Don't miss this opportunity to escape the boundary condition. ii, another you.

Working within the frame of the Institute for Interanimation offered us an opportunity to examine some of the institutional structures we take for granted in the 21st century, but it also led to a few unexpected outcomes. Both the campus and Charlottesville communities were confused by the marketing language we generated. And to be honest, so were we. While we understood our remixes as critiques, people read them in all kinds of different ways, and leading up to *Phase 3,* the Institute for Interanimation lost its fixed identity, trading stability for curiosity.

Phase 3: An Interanimated Structure

Designed and produced at the University of Virginia in September 2017, *Phase 3*, was the Institute for Interanimation's first collective environment, combining live streaming media, responsive visual and musical systems, virtual realities, physical interfaces, and audience interaction. This complex system aimed to reimagine the social and expressive affordances/implications of new interface technologies through an interconnected and reactive set of audiovisual modules (Figure 8).

Figure 8. Audience interacting with different modules installed in *Phase 3*. © The Institute for Interanimation

Some modules were 'live' in that they required the guests to activate or play them, while other interfaces were 'live' in that they were autonomous and seemed alive.

The modules were in constant interanimation, connected to each other and continuously asking for contact. They were always in motion—swinging, clicking, speaking, turning—affecting each other in a complex tangle that made predetermined outcomes and precise repetition impossible. The audience was an integral part of the system as well. By activating and steering, by simply making connections (real or imagined) the audience brought the system to life.

Modules/Interfaces

Nine primary interfaces and modules were installed in a circle in the middle of a black box theatre, each with a distinct sculptural, sonic, and visual identity (Figure 9):

Virtual Reality Pod ⑧ was a large organically-shaped cone suspended from the ceiling. Guests could adjust the height to place their head inside it. A virtual reality headset inside the pod offered a 360-degree perspective on a dance performance, pre-recorded in the same space but at a different time. All audible sound made in the pod was added to the ambient soundscape permeating the space after a short delay.

Suspended Street Lamp ⑦ housed a screen projecting aerial footage captured from above the theatre. By turning the dial hanging from the post, the audience controlled the aerial footage, zooming in and out of the birds-eye view of the building. Spinning the dial also altered the pitch and ambient tones of the soundscape in the room.

Podium with a Spinning Table ⑤ was a chaotic turntable on which guests created moving animations using a collection of found objects, including a mirror, lenses, lights, and cameras. By placing objects in different configurations and adjusting the camera, audience members were able to create images that were projected on translucent screens hanging on the other end of the room ⑨. The podium resembled a strange conflation of organic materials and traditional interface elements, an animated control panel.

Interactive Objects: ④ These bouncy, playful objects were autonomous and generated auditory and visual outputs upon physical contact (they sensed motion using vibration switches). They were hung from the ceiling using elastic cables at different heights and in close proximity to each other and could (somewhat dangerously) be flung clear across the space.

Wire Portal: ③ Long piano wires connected an upside-down drum to the floor. Plucking and bowing the strings illuminated the drum and the sound of the strings was processed and echoed from the other end of the room, affecting the overall soundscape of the space.

Tube Sculpture: ⑥ was tangled and suspended from the ceiling, illuminated by a red spot light and slowly breathing (driven by motors). Pulling the plastic tubes triggered module ② across the circle.

Electro-Mechanical Sound Sculpture ② was constructed using discarded motors and actuators that were sequenced with an arduino microcontroller. This module appeared dormant for stretches until someone intentionally or accidentally moved the tubes ⑥ across the room.

Glowing Heads: ⑫ Projection-mapped glowing patterns (stripes, ramps, etc.) illuminated five rows of foam mannequin heads, each altered with a different sculptural mask, obfuscating their identities.

Forest of Strings ① filled the entire back corner, acting both as a screen and an environment for exploration. The area was surveilled by an overhead camera and the live footage was projected onto a translucent screen across the room. The string network was the only non-responsive area in the installation space even though it appeared to many to control some audio/visual aspects in the room.
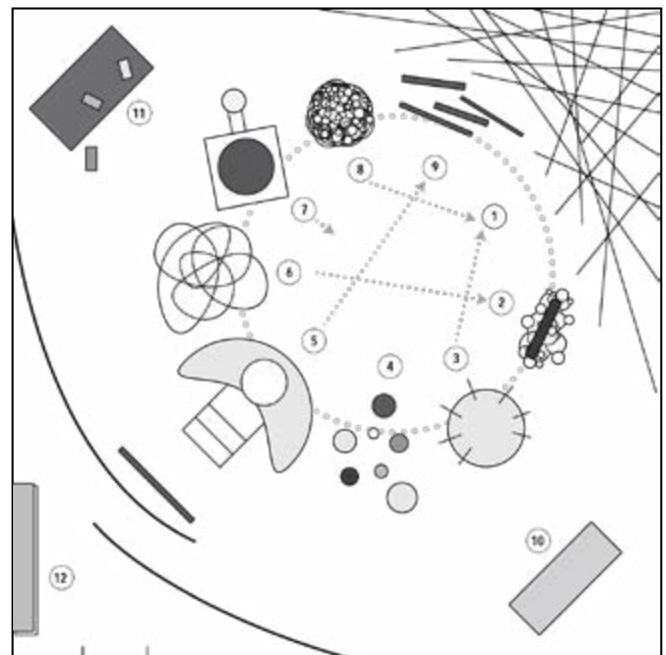

Figure 9. *Phase 3* diagram of the space, depicting the positioning of modules/interfaces and their relationship to each other

Environment

Installing this piece in a black box theater allowed us to create an environment that appeared distinct from the outside world. We were able to keep the space mysteriously dark while illuminating specific modules using dim spot lights and occasional LEDs. In designing the modules and interfaces, we chose a set of textures and materials and stuck to them for motivic coherence. The materials were complicated hybrids themselves—fur, expanding foam, plexiglass, elastic. They each provided a unique tactile experience with some type of animation built in. The modules were furry interfaces, squishy objects, and bendable screens—not your typical technofetishistic materials (Figure 10).

Figure 10. An audience member experiencing the Virtual Reality Pod. © The Institute for Interanimation

Experience

In designing *Phase 3*, our goal was to create a playful, sensory experience that elicited curiosity and provided a space for reflection. An audience member explained the sense of wonderment as both engaging and challenging: "[I was] both unsettled and eager while walking through the room, I felt challenged by the 'games' within the exhibit." The system was a live organism that continued to evolve throughout the course of the exhibit—breaking, reforming, evolving, and adapting.

There was no single roadmap regarding how the audience could interact with the exhibit and no experience could be precisely replicated or repeated. We wanted to set up a situation or a 'set of possibilities' that affect or inspire each other, rather than a linear piece that moves predictably from beginning to end. Reflecting on the ongoing state of change and interanimation, one of the audience members wrote, "If there were any goal to this project, it would be opening up to inquiry the idea of independent, agentive bodies existing within a given space. What became eminently clear to me, in the space 'between here and there,' was that no action I made was

independent. Rather, my very being was constituted by the environment in which I found myself."

By participating in *Phase 3*, guests became implicated in an ongoing state of performance, sometimes willingly and sometimes unexpectedly. They were encouraged to collectively record parts of the environment through fur covered cameras and stream their perspective to the web, visible on a glowing screen lying flat in the corner of the room ⑪ (Figure 9). In generating sound and visual content, the audience left their imprint on the environment and the system imprecisely registered their movements and actions. On the one hand, guests were given control over the space by poking, prodding, and prompting it. On the other hand, the system (and the authors) encouraged certain behaviors and types of performances.

Additionally, alluding to the ubiquity of surveillance in our contemporary life, multiple cameras were installed around the room, including an overhead camera that provided a livestream of the very space the audience were inhabiting. By engaging with the system, the audience positioned themselves within the frame of video surveillance, a feeling reinforced by the institute's generated language and resonating with the system of data sharing that takes place online.

Reception

The audience reaction to *Phase 3* was fascinating and varied. Some people were timid at first encountering the exhibit. Different from most art experiences in Charlottesville, Virginia, the installation encouraged open-ended and tactile interaction with handmade objects, which several visitors found unsettling at first. This sentiment was reflected in a student review, "It took me awhile to find the courage to begin experimenting with the exhibit. I had my reservations: what if I did something incorrectly, something I wasn't supposed to do? Or worse, what if I broke something and ruined the exhibit?"

Somewhat unsurprisingly, younger visitors were very comfortable immersing themselves in the space, exploring and interacting with the modules seemed more natural to them. Not only were children excited to manipulate the sounds and images in the space, but they were also delighted at seeing themselves represented in the system. While adults tended to recoil in realizing that their voice was now part of the room's soundscape, children were excited to add their part, singing, talking, and sometimes screaming into the various sound sensors around the space.

Groups generally were more emboldened than individuals, and small groups clustered around stations, sharing experiences locally, and trying to understand the relationships between the elements. For many, the puzzle aspect of the environment was as interesting as the aesthetic aspects. People wanted to figure things out, and

because of this drive, some people left frustrated, as this was a space for figuring in.

Some visitors wandered in alone and methodically engaged with each individual module, others just sat in the middle of the room and observed. Most of the visitors wanted to share their observations and findings with other visitors. One audience member expressed: "I didn't want to wander alone and enjoy it quietly, as I usually tend to do in art exhibitions. I appreciated this aspect of interanimation, and it made me more aware of the community aspect of art enjoyment."

Despite its playful and sinister framing, the piece was not easy, and many guests expressed relief when interactions and relationships were revealed to them. Others were at home with the complexity and appreciated the mystery, "The unexpected connections between ostensibly unrelated objects dumbfounded me, and it was a fairly long process of becoming acquainted with the exhibit as a whole. The vexing fabrication of each individual object, and the full extent to which they are interconnected, still remains mysterious to me. I found this thrilling as such."

Collaboration

Phase 3 was the result of a year-long interdisciplinary collaboration between the authors, Mona Kasra and Peter Bussigel. As the first project of the Institute for Interanimation, *Phase 3* was designed to be part pedagogical, and many of the decisions made throughout the process were chosen for learning potential (and interanimation potential) rather than success within any one formal value system like Theater, Installation, Music, even Project and Institution.

To build *Phase 3*, a team of five students (Will Mullany, Aspen Miller, Dallas Simms, Ron Lam, and Amber Boucard) and two local community artists (Annie Temmink and Alan Goffinski) worked together over the course of a month, constructing the physical elements, soldering the electronic elements, and coding the digital elements. Members of the collective brought varied backgrounds and skill sets to the project, including costume design, visual art and design, sound/composition, etc. Working as a collective allowed us to share skills and carve out a space for interfacing between different artistic and technological perspectives. The complexities of the experience were welcomed, as were divergent approaches and methodologies.

The project was funded through a grant and was collectively authored among the team members. All collaborators were paid, and while the authors facilitated the efforts and ultimately made some decisions about the overall direction of the production, all of the participating artists were represented in *Phase 3* and the collective

continues to live on through various projects that have grown out from the process. In a sense, given the fast-paced and kaleidoscopic nature of the production, nothing felt finished, but when the show came down, we all had ideas that we wanted to expand on, and smaller collaborations that are still ongoing today.

Platform and Challenges

The Institute for Interanimation allows for failure. Only about 30% of the modules that the group discussed made it to *Phase 3* and until things settled in that final month, collaborators came and went, there were days of directionless discussion, and times where is felt as if everyone was on a different page. Interdisciplinarity is a deeply tired buzzword, and the Institute for Interanimation attempted to take on the challenge of unpacking it. Does the academic discourse around interdisciplinarity refer to media output? Hybrid process? Collective authorship? A bit of everything?

We set out with the nebulous overarching goal of doing things differently, especially with respect to large scale creative collaboration within a research institution. We tried to employ progressive labor practices and nonhierarchical structures, but these desires were often complicated by the larger structures we were working within. We poked at the institutional marketing machine and made something that was difficult to define, and while most of the UVA community was excited about the project, it was not without controversy. This was a well funded project that largely fell outside of traditional value systems. Collectively, we are still working through the ethics and utility of this frame. In a sense, we used a playful institutional frame to allow us to explore some of the more sinister aspects of techno-utopian thinking, hiding behind the mask of a character.

From a creative and generative standpoint, the diffractive nature of the project will lead to more work and provided a rich canvas for thinking through liveness from a variety of perspectives. From an institutional standpoint, it would be difficult to argue that we did much to subvert or reveal the oppressive structures we set out to disturb.

Throughout the process, it was critical to remember that the framework of interanimation is not built for efficiency. It is an experimental and pedagogical process that encourages creative collisions and allows for a deep exploration of interfacing and identity, but it is certainly not the easiest way to build a production. Complication notwithstanding, it feels like an important alternative to the more streamlined production processes. And in many ways, it seems more attuned to current social and technical complexities.

Conclusion

This paper, much like the Institute for Interanimation, attends to the ways in which new systems shift how we live and how we perform. The Institute for Interanimation continues, and there are more projects in the works within this framing device. *Phase 3* was often chaotic, at times problematic, and produced many moments of collective and individual animation. An organization dedicated to interanimation and navigating the unpredictable and forever shifting thresholds between the real and the virtual will always be a complicated structure to maintain. To hold onto to interanimation, we were forced to let go of some individual values. For us, that was and is the core of this experiment, a continual calling into question.

Acknowledgments

Authors Biographies

Mona Kasra is an Assistant Professor of Digital Media Design at the University of Virginia (UVa). A new media artist and an interdisciplinary scholar, she examines, explores, and experiments with existing and emerging media in the context of art making, storytelling, and installation. In 2016, she served as Conference Chair at ACM SIGGRAPH, undertaking an engaged role in the strategic planning, leading, and managing of the world's largest, most influential annual conference on the theory and practice of computer graphics and interactive techniques.

Peter Bussigel is a composer and intermedia artist working with sound, video, and performance. His projects include audiovisual instruments, interactive software systems, sound installations, experimental videos, and concert games. Peter is active as a performer on brass instruments and electronics and frequently collaborates with playwrights, game designers, theorists, and choreographers. Peter is an Assistant Professor in New Media + Sound Arts at Emily Carr University of Art + Design in Vancouver, Canada.