

Hybridization of Art and Technology

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Abstract:

Technology and art define and continue to reshape the world we live in. Re-imagining what we know as real or as a solid ground, pushes not only our opinions and understandings of nature to the limits, but with new inventions and experiments, both the mind and the body, the language, and the world itself seems to be making room for a different sphere and fresh rules. Thenceforward a subsequent fusion towards substitution of the former with the latter was imminent. In other words, contemporary artistic practices reach the climax – through video and digital art, of critically engaging in their means of expression as much scientific and technological advance as never before, changing the face of art forever and completing the revolution of sociological and political infusion into the field of art. Less orientated towards the past, the present paper aims at reviewing the changing role of technology played in the art of the present with an interest taken in the artist status and the public involvement. Furthermore, the interdisciplinary and crossdisciplinary experimentation central to contemporary art is given attention in order to point out how individual aesthetics have been gradually replacing general aesthetics.

Key words: *new media, video art, digital art,*

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introduction

Governed by the new aesthetics, the virtual, the scientific and the logic that is beyond belief, technology in art challenges our perceptions and that is what creativity and science are all about. If we are to understand that creative production reflects the period of time we are all in, how are we to grasp the growing number of young contemporary authors that base their practice on the presentation of immaterial and ephemeral things?

The change of artworks' nature along with the shift in the public interaction and the reshaping of the museums and exhibition spaces are making more room today than ever before for some of the most amazing examples of digital art, kinetic pieces, and works that explore the internet and online existence. The sci-fi mysteries of various movies that were mind-blowing just a decade or so, today shape the face of our reality. This part of the innovative computer-based face, the traditional paintings and sculpture cannot capture to its fullest and that is why the fresh materials, such as data, pixels, mathematical and engineer formulas are the tools number of contemporary creatives reach for.

Introducing of the technology in Art

The truth is that technology has been providing creatives with original ways of expression since its beginning. The major shifts, like the transition from the analogue to the digitally created expression, or to even go back further in time, the birth of Impressionism, the famous silkscreen prints of Andy Warhol, or the disturbing performance works by Stelarc would not be possible if technology and science, parallel to the creatives' road, did not push for original production and new frontiers. Creatives like scientists explore materials, people, culture, histories, religion, and the gain knowledge transform into something else. One of the earliest personas associated with scientific research is the famous Leonardo da Vinci, and to the investigating mind of the 17th-century, we owe the invention of the microscope and the telescope. Along with the investigation of eye's perception and the color theory, the birth of photography, and the moving pictures of Walt Disney, nothing else has helped to transform activities such as painting, drawing, sculpture, and music then the invention of the computer between 1936 and 1938. With it, a completely different understanding towards the creative production was born.

The New Media Production

Since the 1960's the term new media art was coined and it was used to describe practices that apply computer technology as an essential part of the creative process and production. Placing the term under a vast umbrella known as new media, computer production, video art, computer-based installations, and later the Internet and Post Internet art and exploration of the virtual reality became recognized as artistic practices. The term, in the contemporary practice, refers to the use of mass production and the manipulation of

the virtual world, its tools and programs. As such, designers and artists for the production of commercial pieces or for more elaborate and conceptual works implement many different computer programs, such as 3D modeling, Illustrator, or Photoshop. The engagement of technology and science and the application of its language spread into space and many computer-based installations fuse the conceptual and the new media. With the constant technological developments, the fresh aesthetic was formed and many of the creatives that have chosen to create in the virtual arena of the Internet, comment upon the fusion of the virtual and the real, and question the communication and accessibility of their works in the parallel world. The innovative developments opened up a fresh playground, where different authors could merge different skills and tools and offer to us, as their public a completely original perspective of the present we all share.

Trends and Creatives Whose Work Would Not Be Possible Without Technology

The relationship between science and art is, it's a genuine fact that technology offers something that young aspiring authors always desired – untouched grounds to explore, to discover something completely their own and sever ties with whatever is considered to be traditional, giving an opportunity to push the established boundaries. This has been true ever since the first modern steps of technology, Some examples of merge of art and technology.

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Artistic Chemistry of Kim Keever

Kim Keever, a modern-day hydroponic equivalent of Jackson Pollock. This American author devised a method in which he drizzles paint into a 200-gallon fish tank, creating some magnificent effects before taking photos of the colorful chemical reactions. His work

is so amazing that it fascinates you whilst also leaving you puzzled, questioning which medium you are actually observing.

Eric Standley's Papers and Lasers

Eric Standley who grew up in a household of engineers. Standley's paper-cut artworks expand the traditional use of the medium as he works with lasers, shredding with it upwards of 250 sheets of archival paper. The most impressive aspect of his production is the amount of details he is able to achieve as his pieces are incredibly detailed and miniature.

Robotics of Yuri Suzuki

Japanese designer *Yuri Suzuki* is mostly famous for his work with will.i.am, namely *Pyramidi*, a piece made out of a trio of robotic instruments, deconstructed versions of a piano, a guitar and a drum. The fascinating skill of engineering a piece like *Pyramidi* would be impressive enough, but Suzuki takes it another step forward and grants it an artistic note.

CaiGuo-Qiang and His Explosions

CaiGuo-Qiang is a Chinese author who loves to experiment with the explosive nature of gunpowder and its modern variations, initiating what he loves to call ignition events – after the controlled explosion, we are left with traces of an image that are literally burned into the surface. *CaiGuo-Qiang* also works in installations and performances, often combining many elements of engineering and science in order to achieve the desired effects.

The Fascination with Internet

Modern production that is somehow tied to science is concentrated on the Internet and the online world that altered the art scene in so many ways – providing an opportunity for literally anyone to display his work and for the audience to seek out any piece that interests them, not to mention the way the Internet impacted the art market. *Petra Cortright* creates her paintings in order to explore issues of online consumption, rendering them in aluminum and making endless modifications to the computer file until she is satisfied with the result. Another internet-obsessed individual is *Parker Ito*, a man who relies on the reflective quality of 3M Scotchlite fabric which he translates on a computer screen.

Pure Digital Production

We also have to mention the medium of strictly computer-based art, a technique that is completely exclusive to modern times. Some of the most interesting and successful computer inventors out there are *Charles Csuri* (*considered the father of computer art and computer graphics*), *Kyle McDonald* (*an artist/hacker*), *Sara Ludy* (*she actually does magic tricks with pixels*) and *James George* (*explores the ways how we see the world through technology*), but there are also creatives like *Jodi*, *Phillip David Stearns* and *Jon Rafman* who experimented with the potentials and boundaries of computer

art.

The Aesthetics of Computer Drawings and Paintings

Creative practitioners who have not based their creative digital efforts on conceptual theories but instead decided to focus on pure visuals and wonderful aesthetics – standing out for the beauty of their animation pieces, we mention *Bobby Chiu, Cristiano Siqueira, Daniel Conway, Cris de Lara* and *Tae young Choi*.

Combining Traditional and Modern

Manning is a man who starts every single one of his works with a computer program, acting out the experience of dabbling in oil paint and later printing them, imitating the physical appearance of an actual acrylic brushstroke. In many ways, *Michael Manning's* practice in painting, video, sculpture and computer-based work explores the relationship between technology and the analog.

Technology and Performance Art

Technology in performance field largely emerged with Fluxus and Gutai, two international 1960s avant-garde movements that attempted to establish new artistic vocabularies – in this day and age, there are many performers who rely on technology to make the most out of their shows. One of the most impressive artists of this type is undoubtedly Chris Milk, a man whose pantomime-like performances have been astounding audiences for years. The aforementioned Cai Guo-Qiang also authors performance pieces, often combined with his already explained technique of using explosives.

Photography and Film

Two similar mediums that are almost always mentioned when discussing contemporary techniques that use technology to their advantage. With numerous filmmakers and photographers out there, we shall name an interesting and unusual *Ben Tricklebank*, a young author who decided to make use of his extensive scientific knowledge and talent for shooting films to make interactive movies in which the viewers are responsible for which course the film will eventually take.

Incredible Shows of Rafael Lozano-Hemmer

There are also various artists who set up installation pieces based on science, depending on effects only modern technology is able to provide them. One such creative personality is *Rafael Lozano-Hemmer*, a Mexican installation master whose impressive laser pieces have been astonishing audiences worldwide.

Manipulating the Sound

Sound art is also quite dependent on the technological advancements, as the works of such artists like *John Wynne* could never be realized if the science did not intervene.

Controlling sound may be much more complex and diverse than what you may expect, so make sure to check out artists such as the aforementioned Wynne.

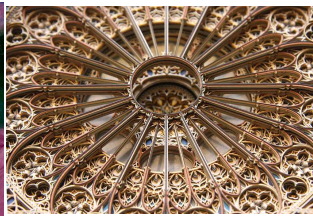
After this list that actually only scratched the surface of the incredible amount of artists who work alongside technological discoveries, it is obvious what the goal of such contemporary artists is – use the platform of new technologies and create a base for new bold directions.

Where to Master Both Art and Technology

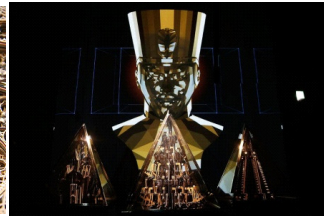
When it comes to learning and advancing in an art form that requires a solid knowledge of technology, the learning curve seems to be a bit steeper when compared to one of more traditional arts such as painting – shortly put, it may not be all down to practice. Whilst you are able to be a self-trained sculptor or a drawer with realistic chances of becoming effective at what you do, arts that require technologies are a whole different ball game – an aspiring artist should really consider the option of attending classes or seeking mentorship. Regardless of where you live, you should be able to find a school or an institution that will enable you to make either the first or the next step in your development. You will be able to meet similar minded individuals, broaden your horizons, work in teams and master new techniques in a much shorter time frame when compared to the period needed to figure some things out on your own. In order to point you in the right direction, we wish to name a few proven institutions around the world who offer opportunities to advance your skills, masterfully balancing between artistic theories and technological approaches. Every faculty on this list will offer you, the student, an opportunity to enhance the desired skills to their maximum.



Artistic Chemistry of Kim Kee ver



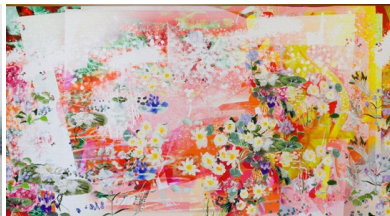
Eric Standley's Papers and Lasers



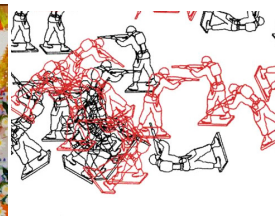
Robotics of Yuri Suzuki



Cai Guo-Qiang and His Explosions



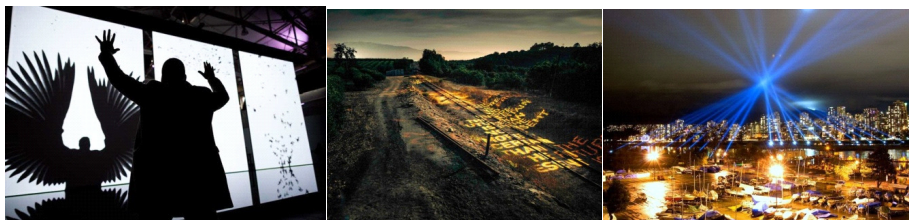
The Fascination with Internet



Pure Digital Production



The Aesthetics of Computer Drawings and Paintings Combining Traditional and Modern



Technology and Performance Art Photography and Film Incredible Shows of Rafael Lozano-Hemmer



Manipulating the Sound

The Visual Arts and Technology in Education

Technology has had a major impact on the arts. One digital keyboard can now take the place of an entire orchestra. Recording software can make an off-key vocalist sound pitch perfect. And computer-generated imagery can render new worlds in filmmaking that

make *The Wizard of Oz* look quaint. And with just a laptop, tablet or smartphone, young people have the means to make and share sophisticated art in both the visual and musical realms.

With all of this technological capacity literally at their students' fingertips, how are arts teachers adapting to this new world? In most schools, the performing arts—vocal and instrumental music, dance and theater—have been impacted, both in the way the classes are taught and in students' interest to participate. But visual arts are likely seeing the greatest effect, since students' artistic skills can be boosted considerably with digital tools.

Due to budget cuts and an increased focus on academics, many schools' art offerings have been in decline, especially in low socioeconomic communities. And simultaneously, states' visual arts standards are now pushing the inclusion of technology alongside traditional media, raising the bar for already struggling schools.

But what are those fortunate schools that still have adequate arts funding doing to incorporate technology into their classes.

Introducing tools in Art & Technology

Tablet computers / notably iPads are cropping up in elementary art classes and offering students new creative opportunities. And I see their appeal, especially as a former art teacher frustrated by fixed 50-minute class periods, where after set-up and clean-up so little work time remained. But will iPads and art apps replace young students' use of the more tactile (and messier) art mediums? Let's hope not. Though one tech-savvy art teacher writes how she was asked to give up her art supply budget in exchange for a classroom set of iPads.

Historically, drawing, painting and sculpting have been the root disciplines in a fine arts education, and therefore the primary focus of secondary art programs. But since technology applications like the Adobe Creative programs, coupled with 3-D rendering systems and printers, are now the industry standards in commercial art fields, they are being included in some schools' arts programs as well. And digital photography and filmmaking, plus video game design classes where students learn to code as a creative endeavor, are likewise being offered.

I've also seen technology's impacts in fairly traditional high school arts classrooms. On a recent visit to an art class, I watched students doing pencil still life drawings. But to help them visually interpret colorful still life objects into black-and-white gradations, the students snapped black-and-white photos with their phones to use as references. And in a high school painting class, I saw students cleverly import photos of their drawings onto computers so they could first manipulate their color options in a painting app before working with paint on canvas.

Interest-Driven Arts Learning

The need remains for schools' arts programs to better leverage digital tools to more effectively capture the interests of their students. Especially since so many are capably creating and sharing digital works outside of school. In fact, there's a whole cultural trend in digital art making and sharing occurring in the lives of young people that most schools are failing to recognize and leverage. A Wallace Foundation-funded research report, *New Opportunities for Interest-Driven Arts Learning in a Digital Age*, provides insights into this cultural trend and suggests some potential opportunities for schools to consider. And though the report is now several years old, the trend it describes still rings true. The report illustrates how students are working outside of school and using tools readily available on their personal digital devices to make non-traditional art like digital art and photography, animations, music videos, and short films. And they're often making this work in collaboration with online

peers, and then posting their work in social media forums, gathering feedback from friends and strangers alike. Many students are finding this to be a far more rewarding endeavor than the traditional practices offered in their schools. So today's challenge to art teachers is this: Maintain the important aspects of their fine arts curriculum, while also supporting their students' work in non-traditional art forms and virtual cultures.

Conclusions

Since the visual and the sound have happily married, even though at first they were separate different devices forming a portable unit (the camera), the total synthetic creation was impossible to avoid. More than that, an international art was born in the wake of Pythagoras's theories that considered the universe founded on a mathematical armature. The technologically trained artists are striving to decipher this foundation, to manipulate it and to play out its possibilities.

Within the same framework, the merit of the video artist is to use and appropriate the instruments specific to technology, to bring to people's attention that art has countless possibilities and its means are unlimited. In addition, the fact that the artist has open access to sophisticated gadgets ahead of ordinary people, sometimes working near the big companies, has caused the integration of the same artist into the world of technology together with the integration of technology into the field of art. In contrast with the engineer, the artist mimes the world of technology on other waves, whereon he is not feudatory to technology, but in full play with it. On the one side, there is reverence and invention whilst on the other one, there is sparkling freedom and creativity.

Investigating technology in order to produce new forms of art has become a purpose in itself and technology has managed to bewilder the minds of the emerging artists above everything else. As creative tools and agents, advanced technologies are responsible for the production of new meanings, ideas or artistic inventions, all of them being central to contemporary art. Besides technical competence, an extra dose of creative strategy and critical thinking is necessary to complete the training of an artist willing to create in an environment shaped by the permanent advance of technology.

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