

Developing Circus Arts Apparatuses with Engineering to Aid Artistic Performance

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Abstract

In this proposal, I am requesting funding for the creation of a circus arts apparatus called “The Net.” This apparatus will be an extension to a current apparatus called “The Tower,” a rectangular prism made out of metal poles standing 9 ft tall on a 6 by 6 ft base (see Figure 1). “The Net” apparatus will add 1-inch thick ropes to “The Tower” in a lattice formation on five sides of the prism (four standing faces around the prism and the top face). Additionally, LED lights will be incorporated into each intersection where a string of rope meets another. This research will investigate how engineering and technology can be used in “The Net” apparatus to aid artistic performance instead of distracting from it. I plan to design and build the apparatus as well as create and perform a circus act using the apparatus. I plan to obtain feedback from circus professionals and audience members to see how effective “The Net” apparatus was in enhancing the artistic performance of the act. Finally, I will incorporate these learnings to optimize the impactful experience of the audience.

Introduction

In the 21st century, modern technology has been implemented into virtually every industry, including the artistic industries. However, the circus arts industry has not been quick to implement new technologies into the aesthetic elements of circus performance, which can be considered a factor to the demise of Ringling Brothers.

Since the creation of Cirque Du Soleil in 1984, circus was revolutionized from the three-ring spectacle to a more artistic form. After 1984, other circus companies followed suit and formed a new style known today as contemporary circus. “[Contemporary circus] combines aspects of classical circus with theater. It rarely uses animals and is more focused on aesthetic impact, and on character and story [1].” This style of circus takes many aspects from dance and theater and mixes it together with circus technique. Shows of this style tend to focus on some projection or expression of the human condition. The pathos created by the performers allows an audience to empathize with the characters on stage in ways that are more visceral and kinesthetic. At times, these connected feelings can prove to be more powerful than words.

While the creation of contemporary circus has been a significant step in transforming circus into a more developed art form, the style of contemporary circus is starting to become overused and too abstract, in my opinion. For example, a very popular contemporary circus company called “Les 7 Doigts” or “The 7 Fingers” recently developed a show in 2016 called “Reversible.” The description of the show is as follows:

“With the 7 Fingers’ Reversible, be prepared for the best in contemporary circus: moments of pure grace yielding to rushes of adrenalin, as a cast of multi-talented performers travel through time and space. Be part of a vibrant journey that will give you

goose bumps: peek through the key hole at a Reversible world, where everyday life is turned upside down into new spectacular, universes filled with beauty, emotion and – yes – hope [2].”

While this description can be poetic, it does very little to actually describe what an audience is to expect during the performance. In addition, it seems as though many contemporary circus show and acts follow more or less a similar “description.” I believe it is time for circus arts to take another step in its evolution. A renaissance of circus arts needs to be developed where new concepts, ideas, and perspectives are brought into the industry, which will develop the art form further.

More development using new forms of technology and engineering can help develop the art form to this new, modern level. Using engineering and technology to enhance the human condition onstage would give a new perspective to circus arts. The industry can be born with a new era of what I call “Circus Science.” “Circus Science” will describe a style of circus arts that integrates technology and engineering into circus acts.

Many circus artists believe that adding technology to the art form strips away the performer’s connection with an audience because the artist is covering up their physicality and emotions with some piece of technology. However, I believe the purpose of incorporating technology is not to replace the human experience, but rather to enhance it. In addition, being apprehensive of incorporating technology into circus acts prohibits the art from evolving. Instead of being hesitant, the circus and engineering communities should both begin to embrace the possibilities of incorporating technology into circus acts, keeping in mind the artistic vision of

the artist. Which is why I propose that we should explore how engineering and technology can be used in circus acts to aid the artistic performance instead of distracting from it.

Background

Some circus companies have started research in the realm of intertwining technology and engineering into circus acts. In 2014, a group of researchers from the KTH Royal Institute of Technology in Sweden collaborated with students from the University of Dance and Circus (located in Stockholm) to create the Gynoïdes Project. The four collaborating artists state that the project had a specific focus on integrating technology into circus using sounds and interaction. In the project, the researchers recorded the movements and sounds of circus performers on different apparatuses and translated those movements and sounds to audio that could be heard by an audience. The researchers used many different circus disciplines including contortion, hula hoop, aerial hoop, Cyr wheel, aerial rope, and acrobatics. They concluded that amplifying the sounds and movements of a performer increased the experience of the act to the artist, choreographers, and audience members. In addition, the article continually focuses on integrating technology in a way that enhances and heightens the performance experience [3]. The researchers also state that, “Practice-based artistic research in circus offers an opportunity to generate new modes of creation, composition and expression in circus [3].”

Additionally, in 2011, Jay Gilligan, developed a juggling act called “Objectify.” The act displayed many unique and experimental forms of juggling. One section of the act included the juggling of rings, where the music that was heard correlated to the movements of the juggled rings on stage. The movement of the juggling informed the tempo and sounds of the music rather than the traditional way of using the music to inform the movement [5].

While these research projects are strong examples of the interconnectedness between circus and technology, creation of future works could be even stronger if a narrative or storyline was developed with the technology and the circus act. These research projects and acts have been developed with their own unique style and artistic vision. Although they do not necessarily include a strong narrative, I believe the artistic work is not “missing” anything. However, the artistic vision of an act could be developed to be even stronger if the technology was integrated into a circus act and into the narrative of the act as well to further enhance an impactful connection with the audience.

Interdisciplinary research in the field of circus arts is important for the development of the art form. Adding new disciplines to circus arts helps the general public to see circus from new perspectives. This work in the “Circus Science” style is on the path of experimental. However, it is important to have experimentalists in every artistic discipline because when someone goes off the traditional track, it can sometimes spark genius and beauty. When other artists get inspired by the one “crazy” idea, it can become the new standard. In experimenting with engineering to create the new apparatuses and acts, we can attempt to create new sparks of genius. These works will inspire circus performers to experiment with their own creations and create more interdisciplinary work. And perhaps one day genius will be created.

Sometimes it takes time for genius work to be apparent. For example, Malcolm Gladwell, a well-renowned journalist and psychologist, speaks about the process of creating genius works in his podcast “Revisionist History.” In one particular episode, he uses the song “Hallelujah,” originally written by Leonard Cohen, as an example. Gladwell mentions that it took about fifteen years from when Leonard Cohen wrote the original version of “Hallelujah,” to when it actually

became popular and considered a work of genius. The song was sung and re-sung by many different artists and all the versions went nowhere. It wasn't until Jeff Buckley recorded his version of the song and then died under very dramatic circumstances to when "Hallelujah" was finally recognized and considered a work of genius [6].

In Leonard Cohen's case, it was by serendipity that his work was reinvented multiple times and finally perfected to its current masterpiece. However, if we prohibited these artists from creating the first rendition of their work, we would have never been able to see the beauty in the end. This beauty can come from circus arts as well. Creating experimental work in the "Circus Science" style will be a step towards finding this beauty. The creation of new apparatuses and acts will trigger new ideas among the circus and engineering communities. And one day, we will create genius. It may be by pure luck to get there, but we have to take the first step and give circus arts that chance. With this research, we can do just that. So, with that in mind, I propose that we should explore how to incorporate engineering and technology into circus arts apparatuses to aid the artistic performance and to enhance the human connection with the audience.

Methods

I propose to create a new circus apparatus and develop an act using this apparatus. This act will then be performed and feedback from the audience will be collected to see how effective the technology was in the overall artistic performance and storytelling of the act. Finally, this feedback will be incorporated to further develop the apparatus and the act the accompanies it.

“The Net” Apparatus

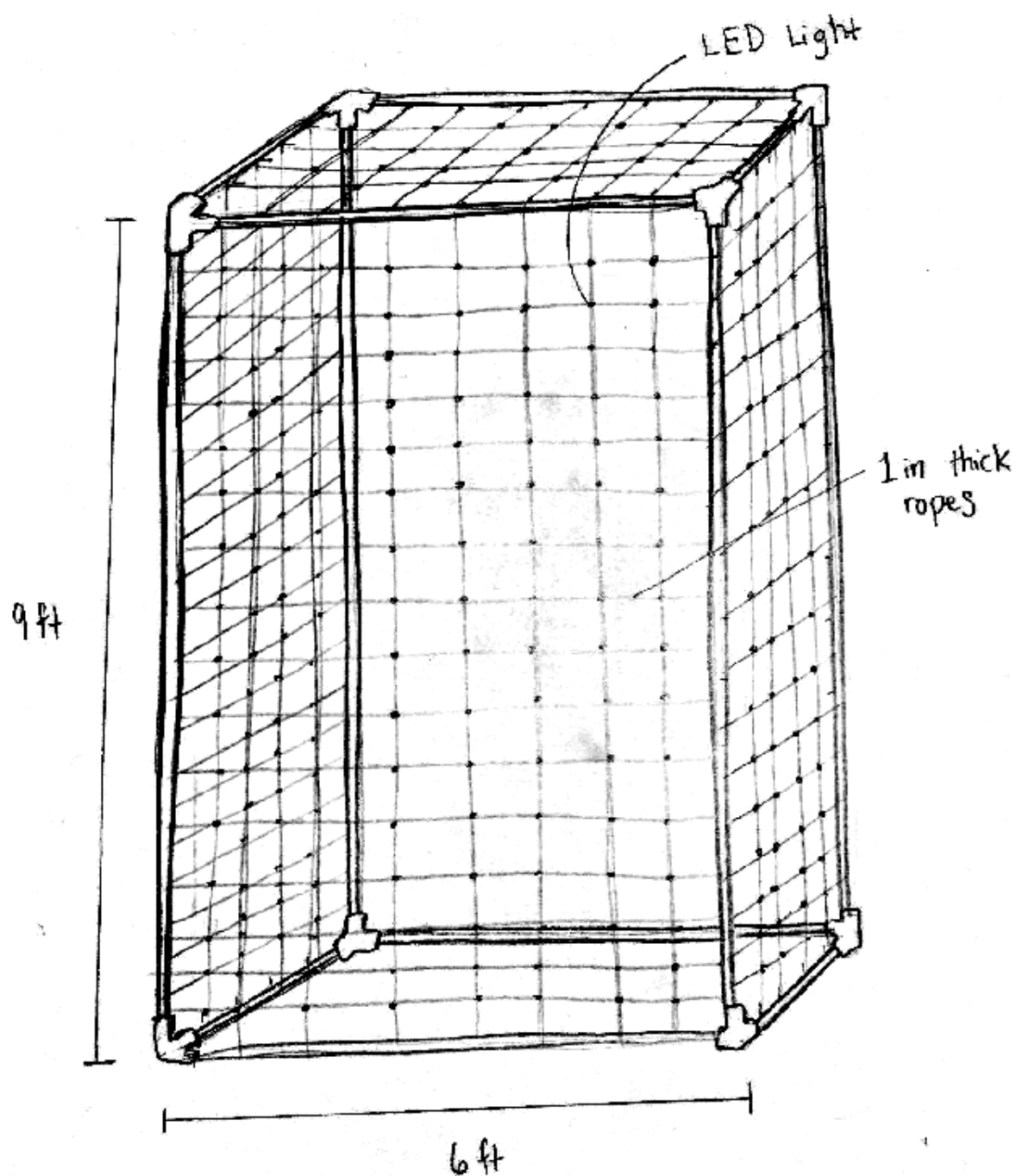


Figure 1

Specifically, I propose to create a new circus apparatus, which I call the “The Net.” This apparatus will be based off of the design of a current apparatus called “The Tower,” created by Andrea Golay. “The Tower” apparatus is a rectangular prism made out of metal pipes with tape wrapped around each pipe for grip. “The Tower” is 9 ft tall and stands on a 6 by 6 ft base (Figure 1). The “The Net” apparatus will add 1-inch thick ropes to “The Tower” in a lattice formation on five sides of the prism (four standing faces around the prism and the top face). Additionally, LED lights will be incorporated into each intersection where a string of rope meets another. These lights will be controlled independently by a computer software wirelessly from the physical “The Net” structure.

To create this apparatus, a digital design of the ropes placed on “The Tower” will need to be made. The design will be checked for safety and functionality before being built. Next, a prototype of the ropes and will be built. These steps might need to be repeated if the prototype does not reflect the original intention or if the design changes. The rope lattice will then be added onto “The Tower” apparatus. Next, the LED lights will be installed into the intersections of rope. Finally, the LED lights will need to be connected to computer software wirelessly.

Once the apparatus is completely built and safe to use, the development of the circus act will begin. The act using this apparatus will follow the story of two characters and their friendship. During the act, the two characters will begin to act out scenes of a developing friendship. Every time the two characters create a memory together, a light will be illuminated on the “The Net” apparatus. One red light will be illuminated on the bottom left corner for character 1 and one blue light will be illuminated on the top right for character 2. As the act proceeds, more and more lights begin to glow revealing the apparatus to the audience. The two characters

then use the apparatus for the duration of the act. More lights begin to appear on the apparatus stemming from the original two lights as the two characters continue to have meaningful interactions. In the end, the apparatus will be filled with illuminated lights to symbolize the memories the two friends shared together.

Expected Results

The expected result of this research will be the creation of the “The Net” apparatus. In addition, an act will be performed to showcase the use of the apparatus and feedback from the audience will be collected in the form of a Q&A discussion after the performance and by electronic surveys. Questions from the audience will focus on how effective the technology was used to enhance the artistic performance and storytelling of the act.

In the future, the act using “The Net” is set to be further developed and used in a full length circus production called TIME. This circus production will explore the different conceptualizations of time from the human experiences and from scientific evidence.

Conclusion

Using engineering and technology in the circus arts industry is a way that circus arts be challenged and pushed to a new, modern level. I propose the creation of the “The Net” apparatus can accomplish this goal. A circus act will be developed around the apparatus and feedback from the audience will be collected to see how well the technology of the apparatus was used to aid the artistic performance and storytelling of the act.

Creating interdisciplinary circus acts and shows will allow for more growth in the industry. Circus arts is unique from other artistic disciplines such as dance and theater because it combines so many different art forms and industries together. “Circus Science” is still a very new

field and there are many possibilities to explore within it. Everyone today has the potential to contribute to the circus arts industry because of its reach in so many different disciplines. With more technological development in circus arts, we can begin to shape the future of this emerging art form.

References

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Budget**Apparatus Design**

Designer	\$	500
	\$	500

Materials and Labor

1-inch thick ropes	\$	1,700
LED Lights	\$	1,380
Computer Software	\$	250
	\$	3,330

Circus Act Development

Rehearsal Space Rental (\$100/hr, 9 hours over 3 days)	\$	900
Performers (\$30/day stipend for 3 days, 2 performers)	\$	180
Costumes	\$	50
Music	\$	20
	\$	1,150

Grand Total: \$ 4,980