**Engineering through Art**

For the first semester being at Texas A&M, I went to Zachery Engineering building at least three times per week, but I didn’t pay me attention to the artworks here. However, after the lecture of Art and Engineering, I have spent my time to have a look, learned, and thought about it.

The first, and also the biggest, art piece that you see at Zachery building, is the sphere that stands tall on the E-quad, the grassplot in front of the building. This is the artwork by a German artist, Olafur Eliasson, for Texas A&M University. One special thing about this artwork that not many people know is that this artwork actually is consisted of two parts: the first part is a “small” human-sized cube with one of its corners is removed, and the other part is the “giant” sphere that is made from sixty identical cubes that are alike to the first part. The message behind this art, according to Mr. Eliasson, is to represent that we can do things that are impossible, just as the sphere is made by the cubes. And yet to achieve this, the artist had to organize those cubes correctly, created some pavilion between the cubes so that it can be fit by programming, and made it appealing by art application.

However, from my perspective, I see more message in that artwork. First is the material that made the art, steel, is a very sustainable and strong material. It is the material of the industry and constructing revolution, and continue to have a great impact on our life nowadays, just like engineering. And the fact that the second piece of the artwork is placed above the ground and be so noticeable, gives the feeling of engineering is thriving in this century. It also conveys the idea that together, we can change the world. As the small cube standing alone is unnoticeable and trivial meanwhile the big sphere which is made by many small cubes stand high and remarkable. Similarity, in the modern world, engineers, not only from one field but can be from different fields, work and collaborate together to find the solution and come up with new innovation.

Furthermore, surrounding the artwork there is also many artworks on the E-Quad, they are the formulas of engineering, from the most basic one that forms the trigonometry aspect, A2+B2=C2, to the most complicated formula in engineering, are all carved on the walk of the E-Quad.

The art inspires me about how engineers turn impossible to possible and how unite can solve the problems. As Olaf said, “You can change things, you can do things, you can actually have an impact on what you set your mind on to doing.” (1)

The second artwork that I found interesting in the Zachery building is by Danial Rozin. This artwork is placed on the wall of the hall inside Zachery, right next to the Starbucks coffee. The art is made of 1024 motors and is divided into 4 boards of different materials that are wood, brass, stainless steel, and printed circuits to create a pixilated image if there is movement in front of the artwork. Mr. Rozin not only designs the appearance of his art but also design the function of his art, which is controlled by software included algorithm based on simple math and science.

This art actually the first artwork that I pay my attention when I first came to Zachery. As I remember it was a morning after my first ENGR 102 class and I came out to the hall, then I heard something moving as I was moving in the hall. At first, I thought this art is noise-sensitive because every time I walk, my shoe tap hit loudly and also when I clap my hand, the art start moving. It is not until today that I found out that the art is actually movement-sensitive.

The number of motors that is needed to create the art is also an amazing number. 1024, means 210, is one of the most important numbers in computer science field, because the prefix kilo, normally means 1000 or 103, is actually 1024 or 210. The reason is every data in the computer is represented by binary numbers, 0 and 1, hence 1 kilobyte = 1024 byte.

The different materials that create this art are wood, brass, stainless steel, and printed circuits and they represent the change in human history when we start to thrive. First by using a simple material, wood. Back to the dawn of civilization people started to build up houses, then towns, cities and even make those first machine such as weaving machine, although these machines are human-powered. Then we started to use machine made by brass, which is a huge development in history. Then steel was born, as well as the invention of the steam machine, which both brought engineering to a new scale where human-power is less required and productivity is enhanced. Steel then was used for building and quickly replace wood, which material cannot stand high temperature or fire, and is quickly decay. Later, when human technology was advanced enough, printed circuits were invented and was used in computers or digital devices, bring a new era of engineering when the 4.0 revolution happen.

The art is run by a program to analyze input data and create movement. As a future computer coder, I found this is very interesting and cool. Seeing the pattern of the movement spreading between the four boards just like when you drop a droplet on the surface of the water, I feel very satisfied and enjoy the art.

This art really does inspire me, the most important reason is that this art consists of a lot of computer related elements in it, such as the number of motors 1024, the material of circuit board, the math and the algorithm. With my goal to be working in computer field, the art gives me an example that art and engineering are close to each other, different from the popular opinion that art and engineering have nothing to do with the other, which is also what my mind think before I have this lecture.

Note:

(1) Olafur Eliasson: https://zachry.tamu.edu/art/olafur-eliasson/

(2) Daniel Rozin: https://zachry.tamu.edu/art/daniel-rozin/