

Music Under New York: An Interactive Musical Installation of Busking in the NY Subway

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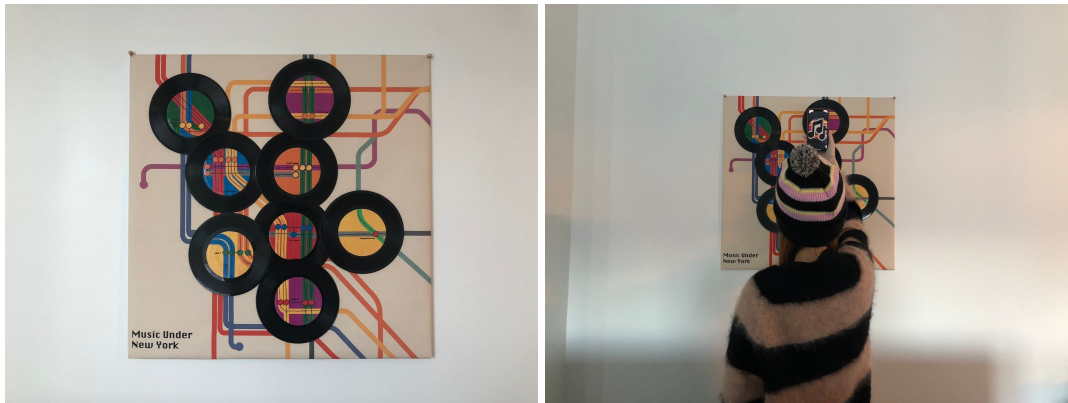


Fig.1

ABSTRACT

This paper describes an interactive musical installation called Music Under New York. It explains its concept, implications and technical execution as well as how a data visualization project transforms from digital to a physical object.

DOMAIN

Music; New York Subway; Busking; Musical Notation; Visual Symbols; Augmented Reality; Installation;

INTRODUCTION

Music Under New York, as shown in figure 1., is an interactive musical installation that showcases the music which lives under New York. It's an engaging experience for audiences from anywhere to enjoy the visualization of the New York Subway and have a chance to listen to its busking music. It's a dialogue among image, music and people: audiences use a customer-made iPhone, scanning and decoding the graphics on the installation, in order to gain the sound data and hear the music.

SIZE & MATERIALS

The installation is a square digital print attached to 25'' by 25'' white foam with eight used 7'' vinyl records on top of the print. The digital pattern on the top of the vinyl record is printed on 8'' x 11'' glossy paper and is cut into a 4'' circular shape.

INSPIRATION

After I moved to New York City from Los Angeles, I traveled everywhere by subway instead of driving my car. Although the subway station is old and unclean, I always felt pleased when I heard the busking music. However, I found out that the New Yorker are in a rush every day and ignore these voices in the subway and a majority of them are unaware of the complexity and power of the New York subway system because they take it from granted and never think about it. Hence, this project aims to remind the New Yorker of the music that lives under New York, and to provide people who have no access to New York subway with a simulation of experiencing New York subway's music.

New York Subway Busking

Opened in 1904, the New York subway is one of the oldest, with the most used and the most stations in the world. [1] Connecting all parts of New York, the subway system is so powerful, and it seems like an underground city. In this city, in addition to people in a hurry and noisy sounds, there is also a distinctive feature-busking- which lets people stop by and enjoy melodies in the rowdy environment. Some of the performances are arranged by a program called Music Under New York; some of the buskers, for money or rapid exposure, perform spontaneously. All in all, the subway station becomes full of musical atmosphere because of these buskers.

Subway Station & Music Genre

In the underground, there are different genres and cultures of busking music. And these different kinds of music are also relevant to the communities on the ground. For example, Chinese buskers always play Chinese folk in Canal Street station, as it is in Chinatown. Various traditional Chinese music with Pipa, Guzheng, Flute, Dulcimer and Monochord, even Cantonese opera are all performed in this station. In Union Square station, due to the large floating population, lots of artist choose to busk in here. Jazz and others niche music are performed in Brooklyn, such as Metropolitan Ave station.

UNDERTAKING

The followings are the steps to make the Music Under New York installation

- Graphic Design
- Materials Prepare, data collect and execute
- Code writing (C# and Unity Vuforia)

Graphic Design

The theme of the installation is Vintage. Hence, I add a grain effect on to the graphics and use vinyl records to represent music.



Fig.2[2]

Service	Color Code	Lines
IND Eighth Ave Line	#1E66AE(Blue)	A, C, E
IND Sixth Ave Line	#EE852E (Orange)	B, D, F, M
IND Crosstown Line	#5BBA40 (Lime Green)	G
BMT Canarsie Line	#858585 (Grey)	L
BMJ Broadway Line	#F6BD42 (Yellow)	N, Q, R, W
IRT Broadway- Seven Ave Line	#EB3D21(Red)	1, 2, 3
IRT Lexington Ave Line	#015902 (Green)	4, 5, 6
IRT Flushing Line	#BF41AB (Pink)	7

Fig.3

Map: The map on the background continues the style of 1972 New York Subway Guide designed by Italian designer Massimo Vignelli. [3] Each line is assigned a color, which is the same as the actual color designed by Michael Hertz and the Metropolitan Transportation Authority (MTA). [4] Figure 3. shows the color code that represents to subway line services. Each line, stops and turns of the map follow the newest subway map provided by MTA, which shown in Figure 4.

Vinyl Records: I purchased all the used records from a shop called Human Head Record in Brooklyn. Each record represents one station. In the installation, there are 8 records which stand for stations (for top to down): 59 Lexington Ave, 59 Street Columbia Circle, 42nd Street Grand Central, 42nd Street Times Square, 14 Street Union Square, West 4, Canal Street and Metropolitan Ave. These stations which can transit to other trains, are large, complicatedly structuralize and have lots of flowing population. And the buskers are more likely to busk in these stations. The graphic pattern works as a musical notation which are the images for the code to recognize. The lines, dots and color are the same style as the background design. The sketchy lines, dots and hand-writing station name is the supportive elements for setting up the Augmented Reality, which I detailly discuss on below.

Typography: The typography of the title “Music Under New York” is Krumgthep. I used this typography because it looks old school and I consider it as a consistent element for the theme: vintage.

Square Shape & Size: The shape is the same as the old record covers. When I first think of the size of the installation, I have to consider the size of the record and also the map of the New York subway. 25''by 25'' square is the perfect match.

SOUND DESIGN

Each record represents sounds of one busking on that station. When the customer-made phone scans the graphics insides the records, the tracks automatically play. The sound data are collected from YouTube. I choose 8 different genres music that plays with various instruments. Each track is less than one and half minutes, since it's no a good experience for audience to hold their phone to long to hear a track. All sounds are edited via After Effect. Excepting the sounds of the melodies, the human voices, trains announcement broadcast and other noise go with the busking music on purpose to give audience a full sound experience in the subway station.

The details of the 8 tracks list below:

59 Lexington Ave: The sounds was collected by Black Tanon in 2010. Drummers Larry Wright and Sonia Wright used five-gallon plastic buckets as drum kit to perform.

59 Street Columbia Circle: The music was collected by bluetulip18 in 2011 on Columbus Circle Station. An anonymous old man played a steel drum version of Under the Sea.

42nd Street Grand Central: The piano track was collected by Aurarisma in 2015. Jason Cordero played Them from Love Story composed by French composer Francis Lai. Jason played piano since he was 7. Now he is 18 and he still played underground. Most of the time he performed in 34 Street Station.

42nd Street Times Square: The sound was collected by EricCreed1990 in 2018. An unknown jazz player played Bruno Mars' That's What I Like with trumpet in Times Square station. People around him at the end sang with him and a homeless man danced based on the beat.

14 Street Union Square: The track collected by me on 2018 when I was waiting R train to get back home.

The Columbian musician Arwaka and his band performed Passenger's Hotel California with Japanese Flutes.

West 4: The sound was collected by JayWall in 2016. A 4-person acoustic sounds group Infinity's Song sang the song Hollow by Tori Kelly with guitar.

Canal Street: The music track was collected from YouTube by Alexander Polonsky on 2011. The Chinese musician Zhong Li Lu played P.I.Tchaikovsky's Dance of The Little Swans from the ballet The Swan Lake, which is performed on Chinese instrument Pipa.

Metropolitan Ave: The sounds was collected by Steve Kong in2 2013. In Metropolitan Ave Station, A banjo musician and a violist jam out on the subway platform.

AUGMENTED REALITY

The code, which is written with C#, works along with Unity and its augmented reality plugin Vuforia. The final platform is a customer-made iPhone. When people use the iPhone scan the image, the iPhone plays the music automatically.

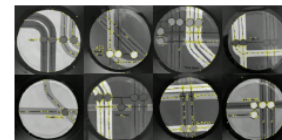


Fig.4

Vuforia has an augmentable rating which can range from 0 to 5 for any target image. The higher augmentability, the stronger the detection and tracking ability it contains. The augmentable rating does not depend on the color but whether a feature contains sharp, spiked, chiseled detail in the image. Shown in Figure 5., the image analyzer represents feature as yellow crosses. [6] In order to make the image have higher augmentable rating, I add the sketch line and big circle on the digital pattern and make grain effect on the sketch line. The lines and dots increase the detection and tracking ability, at the same time add more visual effect on to the installation.

DIGITAL or PHYSICAL?

My three domains of the final project are Data Visualization, Music and Interaction. Therefore, when I first had this idea, I wanted to make a website as the media to reveal the music, since this is the most common way to do data visualization. I built a data visualization website before. So, at this time, I wanted to challenge myself and created a Data art installation that let audience have a physical interaction with the data. Still, Shown in Figure 6., I built a website version of Music Under New York too. And I think both platforms have its pros and cons. Website are too abstract and every element-music and the subway locations- are a set of data that display in a 2D digital screen and it's not touchable. While an installation can concrete the data to a

physical object. I can use vinyl records to represent music, which the audience can touch and decode. However, website is easy to spread to everywhere, while the audience of the installations are area limited to those who go to the museum.

CONCLUSION

Music Under New York aims to showcase various genres and cultures busking music in New York Subway. It condenses the underground music world of New York to one foam, or a website. The project provides everyone with a visualization of New York subway system an interactive augmented reality experience of the New York subway busking culture. And it also explores the relationships among images, music and people.

PREFERENCE

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