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ARTICLE

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Outside in: exile at home. An algorithmic discrimination system

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Recommended citation

Abstract

Outside-in is an installation that utilises machine learning to reflect on systematic discrimination by focusing on the indefinite detention of Mexicans with Japanese heritage concentrated in Morelos during WWII. This algorithmic discrimination system tears apart four classic fiction films continuously within a projection room. The fragments are displaced and classified using machine learning algorithms. The system selects, separates and reassembles the fragments into new orders. It evokes the condition of being robbed of your right to be in the place to which you belong. The citizens detained during WWII were removed from their residence, their belongings were confiscated and they were placed in seclusion solely for having Japanese ancestry. Similarly, at present, data retrieving companies configure low resolution representations of ourselves from the snatched digital debris of our daily life. These pieces are reconfigured into archetypes and meaning is attached to them for massive decision making. We don't have the right or means to know what these representations look like or what meaning has been attached to such shapes. It is a privilege reserved to the designers of algorithmic processes: they own this right and we the citizens own the consequences. The present article is a case study presenting the creation of *Outside in: exile at home* as an installation that utilises machine learning and reflects on this kind of systematic discrimination.

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Keywords

machine learning, decision systems, algorithmic video editing, Mexican citizenship during WWII, identity, territory

Outside in: exile at home. Un sistema de discriminación algorítmica

Resumen

Outside in es una instalación que utiliza el aprendizaje automático para reflexionar sobre la discriminación sistemática al centrarse en la detención indiscriminada de mexicanos con herencia japonesa concentrada en Morelos durante la Segunda Guerra Mundial. Este sistema de discriminación algorítmica "despedaza" continuamente cuatro películas clásicas de ficción en una sala de proyección. Los fragmentos se desplazan y clasifican utilizando algoritmos de aprendizaje automático. El sistema selecciona, separa y vuelve a montar los fragmentos en un nuevo orden. Quiere reflejar la sensación de ser despojados de nuestro derecho a estar en el lugar que nos pertenece. Los ciudadanos detenidos durante la Segunda Guerra Mundial fueron sacados de sus casas, sus pertenencias fueron confiscadas y se les recluyó únicamente por tener ascendencia japonesa. Y ahora, un poco de la misma manera, las empresas de recuperación de datos realizan representaciones en baja resolución de nosotros mismos partiendo de los escombros digitales que se nos arrebata de nuestra vida cotidiana. Estas piezas se reconfiguran en arquetipos y se les asigna un significado para la toma de decisiones masivas. No tenemos el derecho o los medios para saber cómo son estas representaciones o qué significado se ha asignado a tales formas. Es un privilegio reservado a los diseñadores de procesos algorítmicos: ellos son dueños de este derecho y nosotros, los ciudadanos, somos dueños de las consecuencias. El presente artículo es un estudio de caso que presenta la creación de Outside in: exile at home *como una instalación que utiliza el aprendizaje automático y reflexiona sobre este tipo de discriminación sistemática.*

Palabras clave

aprendizaje automático, sistemas de decisión, edición de video algorítmica, ciudadanía mexicana durante la Segunda Guerra Mundial, identidad, territorio

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Introduction

> You lied when you said you didn't mind my face.
> Mr. Okuyama in the 1966 film *The Face of Another*

Outside-in is an installation that utilises machine learning to reflect on systematic discrimination by focusing on the indefinite detention of Mexican citizens with Japanese heritage during WWII. It was premiered in 2018 at the Jardín Borda Cultural Center in the capital of Morelos[1], the same state where the Hacienda de Temixco former internment camp was located. Visitors enter a dark room that hosts an algorithmic discrimination system which forces four classic films into the space and time usually assigned to one. The system tears these films apart, displaces the fragments and recombines them. It discards the centre of the images projecting only the outskirts, all of them layered on a single wall. It displaces the subtitles of all to a perpendicular wall making it impossible to read them as you watch the images. On a third wall the system channels the soundtracks through headphones, switching among films. In this new disposition the elements of a single film share the same dark room, but they no
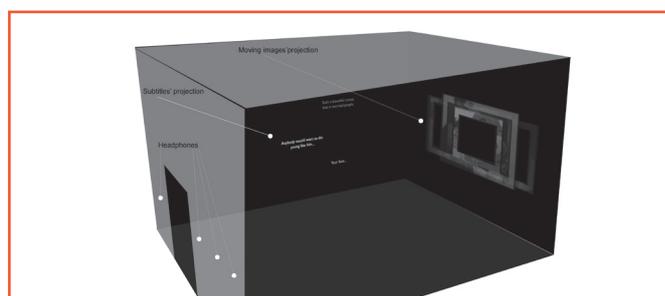
Installation diagram.

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longer belong together. It is almost impossible to know which film they are a part of; they have lost their original purpose: conveying a specific meaning.

The work evokes the process of indefinite detention; it focuses on the case of the Hacienda de Temixco, a concentration camp for Mexicans with Japanese heritage between 1942 and 1945. One of the four classic films that constitute the source material of the installation is Mexican and the other three are Japanese productions. The Mexican one is shot in rural Oaxaca starring Toshiro Mifune. He plays the role of an indigenous man striving to be the patron of a religious festivity. The remaining three productions are about a man's relation to his disfigured face, a doctor (played by Mifune) who contracted syphilis in WWII and a femme fatale infatuated by the son of her lover, played by famous drag queen singer Akihiro Miwa (Maruyama). These films contain reflections on belonging, identity and social exclusion. The discrimination system that constitutes the installation uses machine learning to classify and fragment the films that are presented in new sequences, displaced as previously described.

The historical and geographical context of the artwork will be presented first, followed by an examination of the system that structures the work and its use of machine learning.

Historical and Geographical context

> Goodbye, then. I won't take you home.
> Dr. Kyoji Fujisaki in the 1949 film *The Quiet Duel*

Facial resignification

I decided to exhibit the installation at Jardín Borda Cultural Center because it is located in the capital of Morelos, a block away from the main cathedral. It is a central location in the state that hosted the internment camp for citizens with Japanese heritage, the focus of the artwork. Morelos' territory has housed the vacation getaway properties of the ruling classes of the Mexica, Spaniards and several Mexican presidents. Jardín Borda is well known for having been a home for former Emperor Maximilian and Carlota. They were the first rulers of Mexico that massively propagated their image thanks to photography. It was during their rule that the exploitation of photography in Mexico as propaganda media began. When the couple disembarked in Veracruz in May 1864, their faces were already popular all over the country because their images had previously been commercialised (Aguilar 1996, 16). Meaning had been carefully assigned to their faces through the elite innovative technologies of that time. During the next century, propaganda campaigns were also used to resignify faces as is the case with Japanese heritage citizens after Pearl Harbor. This time not to empower, as with Emperor Maximilian, but to render as vulnerable as possible. "To achieve complete hemispheric solidarity and defense the United States conducted a sweeping propaganda campaign that reached all levels of Mexican society, while simultaneously pushing

negative images of Japan and Japanese residing in Mexico as possible saboteurs, sleeper agents, or simply not trustworthy based on their ethnicity."(García 2014, 189) "…the Mexican government demonized Japanese Mexicans and suspended the civil rights of all citizens, claiming a state of emergency."(Chew 2015, 176).

Indefinite detention

In a news conference on December 15, 1941, Frank Knox (then secretary of the Navy) put the blame related to the Pearl Harbor attack on Japanese Americans living in Hawaii. He provided no evidence for his claim, then or ever (Barbash 2016). This false assumption helped to fuel a mass media fabrication of meaning embedded in the faces of citizens with Japanese heritage all over the American continent. Upon pressure from its northern neighbour, in December, the Mexican government froze the bank accounts of the Japanese heritage people and in the following January removed them from the borderlands by ordering them to concentrate within the cities of Guadalajara and Mexico City, the centre of our territory. The Japanese heritage people already living in these cities could not lodge all the displaced people who could not afford a place of their own; therefore, they formed the Committee of Mutual Help (CMH) and rented an old large house for this purpose. By June the government created a department to confiscate and administer the possessions of all Japanese heritage people. The old house was already insufficient so the CMH, with government authorisation, bought the Hacienda of Temixco in Morelos, a state adjacent to Mexico City. The first transferred families arrived at the hacienda in August. Two government soldiers guarded the entrance point permanently until 1945 when the indefinite detention ceased (Hernández 2011, 146). Upon false assumptions it was determined that one single data point (ancestry) was enough to label a citizen as a potential threat for the country. Regarding citizens within the US and its neighbouring countries, if the citizen had Japanese ancestry, we can say the below procedure was followed:

1. Classify the citizen as a potential danger to the USA.
2. Freeze the citizen's bank account.
3. Confiscate her/his belongings.
4. Displace the citizen to a designated zone or facility where she/he will live under specific restrictions and under surveillance for an indefinite number of years.

Does this citizen deserve all these consequences? That decision was made upon obtaining a single binary data point: does he/she have Japanese ancestry? If yes, follow the above listed procedure. This low-resolution decision method based on ancestry is still used to decide whether a US citizen qualifies as a suspect of being a threat to national safety.

Section 1021 of the 2012 National Defense Authorization Act (NDAA) gave a legal frame for indefinite detentions and is still in force in the 2020 NDAA. As Christopher Jenks mentions in his article *Civil Liberties and the Indefinite Detention of U.S. Citizens*: "Our grandparents' generation, which detained thousands of Japanese-Americans,

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and our parents' generation, which overreacted to fears of communist infiltration, show the dangers of waiting [to correct section 1021 of the NDAA]. America as a country and as a people should have learned from these mistakes. These generations, however, were largely good people who as a society made regrettable decisions out of fear. We are in the midst of making decisions, or not opposing decisions made in our name, which will have equally untoward outcomes. The components which yield this undesirable, undemocratic outcome are right in front of us. A federal statute which authorizes indefinite detention of we are not exactly sure who, or for exactly what conduct, juxtaposed against what even members of the judiciary label a functionally useless habeas corpus regime. The components are right in front of us. They will ultimately be brought into sharp focus in the aftermath of a domestic terrorism incident in which there is not overwhelming evidence of guilt such that a traditional prosecution is possible. There the government, our government, may take the next step, one provided for by section 1021, to indefinitely detain U.S. citizens captured in the United States for conduct that allegedly occurred in the United States." (Jenks 2014, 36-37)

The New York Times reports on January 5th, 2020: "Dozens of Iranians and Iranian-Americans were held for hours at Washington State's border with Canada over the weekend as the Department of Homeland Security ramped up security at border ports after Iran threatened to retaliate against the United States for the strike that killed its top military leader." (Kanno-Youngs et al. 2020). Again a binary decision based on ancestry dissolves citizenship, in this case for hours but the legal frame is there to make it last an indefinite amount of years.

The installation's structuring system and use of machine learning

> Damn! He has the same impish face.
> El Español in the 1961 film Ánimas Trujano *(The Important Man)*

Source material

The artwork's system dismantles four classic films within the exhibition room by tearing them into data units and reconfiguring their position in time and space. The source materials selected to inhabit the system are described below together with a brief sample of their subtitles:

Ánimas Trujano: The Important Man (1962, B&W), directed by Ismael Rodríguez based on a novel by Rogelio Barriga. Iconic Japanese actor Toshiro Mifune embodies Ánimas Trujano, an indigenous man in Oaxaca striving to be patron of a religious festivity.

Don't run, evil woman. Stay there! (00:14:37)
Are you spying on me? (00:41:22)
What does that mean, Mr. Justice? (00:44:57)

Funny you should forget the most important thing. (00:46:21)
So very white. (00:50:00)

The Quiet Duel (1949, B&W), directed by Akira Kurosawa, based on the play *The Abortion Doctor* by Kazuo Kikuta. Mifune here plays the role of Dr. Kyoji Fujisaki, a doctor that contracted syphilis during World War II while performing surgery on a patient infected with this disease.

I don't go to your place anymore. (00:24:36)
I don't understand, the politics of the country. (00:37:25)
It's a terrible story. My colleague was inspecting cars… (00:47:57)
my body became dirty, without knowing any pleasure. (01:15:45)
You have to walk proudly, with your chin up high. (01:31:50)

The Face of Another (1966, B&W), directed by Hiroshi Teshigahara, based on the novel by Kōbō Abe. Here the main character, an engineer, has a severely disfigured face due to an acid-related accident in his laboratory and acquires a life-like mask he uses to seduce his wife incognito.

No one even remembers it happened. (00:03:03)
Why do people feel the way they do about faces? (00:05:34)
The world outside seems, so terribly far away. (00:56:48)
Who's killing whom? (01:38:48)
Freedom's always, a lonely thing. (01:58:47)

Black Rose Mansion (1969, colour), directed by Kinji Fukasaku. This film stars famous drag queen singer Akihiro Miwa (Maruyama) who plays a femme fatale infatuated with the son of her lover. Miwa is also known as a peace advocate and survivor of the atomic bomb dropped in Nagasaki in 1945.

…when I stopped and stood still…that's when it happened. (00:00:49)
We don't know anything about, Ryuko Fujio, her past, or her present. (00:07:07)
… but such was my determination (00:42:44)
She's from outside our world. (01:23:29)
Did they find them? (01:27:21)

I chose these specific films because all of them are fiction. We could say characters in a way are a bundle of features that register an essential idea of something, like machine learning models. These films can be classified in ways where one of them is singled out (filmed or not in the '60s, Japan, B&W, based on known literary works). They contain reflections on belonging, identity and social exclusion which relate to the context of indefinite detention due to heritage. In the installation Mifune becomes a sort of repository for the historic event. As Ánimas Trujano he is a Mexican character among Japanese movies, a Mexican-looking Japanese citizen. As Dr. Kyoji Fujisaki he becomes the Japanese doctor of Temixco. In 1917, Mexico signed a bilateral agreement accepting Japanese medical doctors, dentists, pharmacists, obstetricians, and veterinarians to practice in Mexico (Chew 2015, 39). Several of them were later displaced and detained. Dr. Manuel Seichi Hiromoto spent several years in the Temixco con-

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centration camp. At the end of WWII, he became a revered medical practitioner in the town of Temixco (Chew 2015, 143), remembered as the Japanese doctor. Three of his sons still continue with the medical practice in the town.

Dismantle

Machine learning was used to analyse the data that constitutes the sources to classify it into distinct categories including the presence or absence of a female voice in the soundtracks, female faces in the moving images, and statements projecting positive or negative sentiment in the subtitles. The machine learning models used to classify the source material were developed using the open source toolset Turi Create.

The text classifier model used to analyse the sentiment of the subtitles uses two components: a bag-of-words and a logistic regression classifier. It was used to determine the probability of a subtitle for referring positively or negatively about a topic (for example about to die, Tadeo, a sunset).

To evaluate whether a face present in an image belongs to a female, an image similarity model was used. From fragments of films containing a female face I extracted image sequences to use as data references for a model. The model retrieves the images that are most similar to the reference from the installations source films' image sequences with a face.

A sound classifier model is used to assign sounds a category, such as: music, siren, dog barking, baby crying or a specific female voice. For this last class 40 five-second audio recordings were extracted from the film The Pearl (1947) by Emilio Fernández. The samples contain the voice of the actress María Elena Marqués, speaking in English, as Juana. The classifier determines which sounds from the four film sources should be considered Juana's voice.
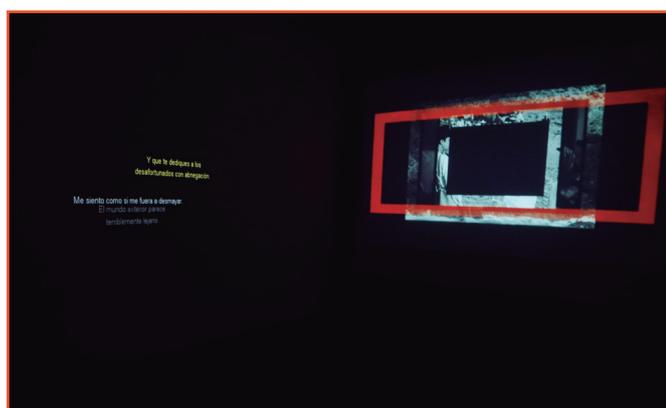
Outside in: exile at home, Jardín Borda Culture Center, 2018, Cuernavaca Installation view. Photo by Diego Aguirre Escorza

Displace and reassemble

As mentioned previously in the introduction, the system[2] discards the centre of the images projecting only the outskirts, all of them layered on a single wall. Subtitles are displaced to a perpendicular wall making it impossible to read them as you watch the images. This wall can be divided into four areas; each one displays subtitles belonging to a single movie. On a third wall the system channels the soundtracks through headphones, switching among films. The installation output is assembled in the visual programming language TouchDesigner. The programme written in this platform processes the source materials and splits them into the three output signals (image, subtitles and soundtrack). It outputs each signal interspersing between 2 modes.

1- All sources in a same signal are synchronized. For example, subtitles are all at 00:07:06

Film 1: Anybody would want to die young like him…

Film 2: [no subtitles at this point in film 2, the space would be empty]

Film 3: I live in a much greater darkness.

Film 4: …accompanied by a young mulatto

2- A signal displays elements from the sources that belong to the same category. That is the category decided through the machine learning processes.

For example, subtitles classified as positive about a topic

Film 1: Anybody would want to die young like him…

Film 2: Poor people should die early for their own good.

Film 3: [no subtitles in film 3 in this category, the space would be empty]

Film 4: He lost sight of love… he was dead inside

Mode 1 allows visitors to follow a film through its subtitles, or soundtrack, or the camera movements in the images. Mode 2 doesn't, materials are totally disarticulated from their sequence. Each mode lasts for a variation of minutes; it is meant to contrast, to make evident the reassembling of data when it happens.

On systematic discrimination

We should resist all discourses presenting (and practicing) the state as a camp, and all forms of normalization of the exception, that appears always, somehow, to pertain to others-from-us"
(Minca 2015, 81)

The artwork exposes the audience to a familiar experience that has been disturbed: watching a classic film. It is evident most of the image is missing and that there is way too much information to follow and process. At times all of the content in the subtitles seems

2. The installation's system was designed in collaboration with Hugo Solís

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related, certain content is present much more frequently. These cues let the audience notice there is a system filtering and organizing what is presented to them. If the audience lives in Morelos, they have probably been to the privately run water park the Hacienda hosts at present, or, at least, seen pictures of it. The label on the wall mentioning the historic event will reshape how they perceive all the data elements of the installation. These elements belonging to the four films are now intertwined; they have lost their former context that triggered how you read them. At the same time, they are no longer subjugated by the movie's central purpose, but can still signify. From the sum of displaced elements: meaning emerges now quelled by a new context.

The installation system is structured to evoke the *spatial biopolitical technology* (Katz, et al. 2018, 4) that constitutes the normalisation of indefinite detention by disturbing the experience of watching a classic film. It evokes the specific case of the Hacienda of Temixco through the use of its film sources as explained previously. Machine learning is used to further transform our perception of the films' traces presented to us in the installation. The use of these processes also has a symbolic value since these tools are being used in massive decision-making processes. "Currently, decision-making systems that rely on machine learning are in many ways opaque, lacking adequate explainability in many instances"(Lohr 2019, 226). "Machine learning algorithms have the potential to discriminate more consistently and systematically and at a larger scale than traditional non-digital discriminatory practices"(Criado and Such 2019, 85). Aided by machine learning, data retrieving companies configure low-resolution representations of ourselves from the snatched digital debris of our daily life. These pieces are reconfigured into archetypes and meaning is attached to them for massive decision making. As in the case of Emperor Maximilian and Carlota, these images have been propagated massively and arrive before us to loan granters, insurance companies and legal systems among others. We don't have the right or means to know what these representations of ourselves look like or what meaning has been attached to such shapes. It is a privilege reserved to the designers of algorithmic processes: they own this right and we the citizens own the consequences of our by-product face, as in the case of the Mexicans with Japanese heritage interned at the Hacienda de Temixco in Morelos, Mexico.

What are the shapes of our invisible-to-us data representations? Portraiture and subjectivity in legal data sculpting are concepts I explore in my artwork aided by machine learning processes, which is currently in development.

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Annabel Castro is a digital media artist. The overlapping of geographic, virtual and mental spaces, landscape as trajectory, identity, are recurring subjects in her work. She has received the PBEE grant from the National Foundation for Arts and Culture of Mexico, the La Paz award from the International Art Biennial SIART in Bolivia, Object Art first prize from the Third National Biennale Puebla de los Ángeles in Mexico and the Open Territories Commission of mARTadero Culture Center in Bolivia. Her artwork has been shown among other venues at the Transmediale in Berlin and the Ethnography and Folklore Museum of Bolivia. She studied her PhD at the DXARTS department at University of Washington. She is currently professor of the Arts and Humanities department of Universidad Autónoma Metropolitana (Lerma campus).