

Surveillance Algorithms

Brazil as a Laboratory for Facial Recognition

The clock read 11:15 p.m. when a red alert began flashing on the giant screen at the Integrated Command and Control Center (CICC). That same evening, on November 7, 2023, in another part of Copacabana, [Gildeane Taislane Santos](#), a young Afro-Brazilian woman, went out with friends to celebrate *Pré-Caju*, one of the largest popular and musical festivals in northeastern Brazil, held annually in the city of Aracaju.



Integrated Command and Control Center (Copyright: Gil Leonardi)

Santos was finishing her cocktail at a beachfront venue when she was suddenly surrounded by Military Police officers, who arrived with sirens blaring to take her to the interrogation room at the police station.

“I was humiliated: they took my phone, smashed my glass on the floor, and put me in the police car,” the victim said after her release. During the police interrogation she did not have the identification with her. “I tried to explain that they were mistaken, but at that point, all I could do was cry.”

When her parents arrived at the police station with the ID she had left at home, a quick verification confirmed the mistake, but it could not undo the humiliation. Gildeane Taislane Santos had been mistaken for another person wanted through a facial recognition system.

In a country where more than 90% of arrests carried out on the basis of facial recognition involve Black people, according to data from the [Public Security Observatory Network](#), computer scientist and researcher Nina da Hora issued a warning: “In Brazil, the risks of facial recognition

technology are heightened by the lack of regulation, historical racial inequality, and the opaque use of these systems by law enforcement agencies.”

Nina da Hora is the founder and director of the [Instituto da Hora](#) for digital rights. She collaborated with [Conectas](#) (a Brazilian non-governmental organisation for human rights) on the publication of the report [“Eyes on the watchers: challenging the rise of police facial recognition”](#), a study written to expose the impact of algorithmic racism and the dangers of surveillance without democratic controls.

“Facial recognition technology has already been used to monitor supporters’ groups, protests, and even street Carnival parades. This creates a chilling effect on the freedom to protest in a country with a strong tradition of social mobilization which is also marked by violent repressions - observes the activist. Data shows that young Black people and those living in peripheral regions are the main targets of police interventions. As facial recognition has a higher error rate for Black faces, it reinforces an already violent situation”.

False positives, in fact, increase the risk of arbitrary arrests and even police lethality. Moreover, in the context of recent political crises, facial recognition could become a tool for mass surveillance of opponents, journalists, and social movements and - continues Da Hora - “the risks increase in a country with a long history of using surveillance tools for authoritarian means, from the military dictatorship to recent operations at protests”.

From Rio De Janeiro to São Paulo, [facial recognition already operates in 21 of Brazil's 27 states](#) and while authorities justify the surveillance on security grounds, rights groups say the regulatory vacuum allows different security agencies to adopt systems with no standardization or oversight.

Surveillance, Violence, and Distrust in Brazil’s Marginalized Communities

Brazil records very high levels of violence: in 2024, the country saw around 38,000 violent deaths and a homicide rate of roughly 18–19 per 100,000 inhabitants, one of the highest in the world in absolute numbers. This rate is about three to four times higher than that of the United States, which in 2023 stood at around 5.7–5.9 homicides per 100,000 people. In several Brazilian regions, such as the Amazônia Legal, violence is even more intense, with rates exceeding 30 homicides per 100,000. Although Brazil does not reach the extreme levels of countries like Jamaica, which exceeds 50 homicides per 100,000 inhabitants, it nonetheless falls within the group of countries with the most severe problems of lethal violence.

“There is no denying that there is a problem of insecurity in the cities,” says Dario Da Sousa, adjunct professor at the State University of Rio de Janeiro, who mainly studies poverty, urban sociology, youth, vulnerability, and violence. “But be careful: in Brazil, Police are very violent in the peripheries and often do not respect the law. That is why trust in security policies is not the same across the country, marginalized communities tend to view these surveillance technologies with suspicion, because for them the message is not: you are protected from danger, but rather: you are the danger.”

Because organized crime groups often dominate poor neighborhoods known as favelas, police are reluctant to enter them and when they do they conduct militarized raids like those of an invading army.



Brazilian Military Police officers guard men arrested during an operation in the favelas (Source: RSI.ch)

Meanwhile, in the absence of an effective state presence, criminal organizations such as Comando Vermelho (CV) and Terceiro Comando Puro (TCP) control critical areas, managing drug trafficking, extortion, illegal gambling, and other illicit activities, fueling armed conflicts and high-risk police operations.

On October 29, more than 2,500 police officers and special forces stormed the area around the *Alemão* and *Penha* favelas - home to an estimated 300,000 people - in what authorities described as the headquarters of one of Brazil’s most powerful crime groups.

Gunmen from the Comando Vermelho (CV) opened fire, set up barricades and used weaponised drones to drop explosives on advancing police teams.

Rio's right-wing governor, Cláudio Castro, declared the city "at war," calling it the largest police operation ever carried out against "narco-terrorism." Police said 113 suspects were arrested and 118 firearms seized.

But the images that emerged the next day told a very different story. Residents carried the bodies of those killed into a square in Penha, laying them side by side in a long line. More than 130 people were dead. Relatives of the victims alleged summary executions, pointing to bound limbs, knife wounds and gunshots to the face and neck.

Until October 29th, Rio's deadliest police operation had been [a 2021 raid](#) on another Red Command stronghold, Jacarezinho, when 28 people were killed. The intervention, carried out by the Civil Police of Rio de Janeiro, involved an incursion into the favela using helicopters and armored vehicles to dismantle the drug trafficking network linked to Comando Vermelho.

In response to such massacres, [the Rio Police have argued for the implementation of new policing technologies in the Jacarezinho favela](#), particularly video monitoring. This meant an expansion of the facial recognition policing project launched in 2019, with the implementation of 22 cameras that, in the words of the police, should have "contain and avoid actions against the lives of state agents and other citizens."

The Expansion of Facial Recognition: Huge Investments, Little Impact



Facial recognition technology in public spaces: tracking and analyzing individuals in real time

In 2019 the Brazilian former president Jair Bolsonaro signed a pair of decrees to create a centralized database collating the personal and biometric information of Brazil's population of more than 200 million.

Thereafter, Rio de Janeiro's former governor Wilson Witzel, through the State Secretariat of Military Police (SEPM), had implemented a pilot project for video surveillance with facial recognition in Rio de Janeiro: dozens of cameras were deployed in Copacabana, the palace chosen for the initial test, since it's central in the global imagination and symbolism of Rio.

According to CESeC, an institute that studies crime and violence in Brazil, “these facial recognition projects in Rio appear to serve as a pretext for technological experimentation, with no direct impact on the real public safety problems.”

On June 5, 2025, the [United Nations Committee on the Rights of the Child](#) (CRC) published its conclusions on Brazil, expressing concern about systematic violence driven by structural racial discrimination.

The rapporteurs highlighted widespread violence against Afro-Brazilians, particularly the high homicide rate among Afro-Brazilian youth; the frequent killings and disappearances of children during military and police operations in favelas and poor urban areas.

On that occasion, the Committee raised the issue of the right to privacy in the digital environment, considering that over the past ten years, in some of Brazil's largest urban centers, police forces have multiplied their control capabilities with the introduction of new facial recognition systems and automated reading of personal data, which are also used by private companies in the development of artificial intelligence systems.

Although Brazil's economy has grown remarkably over the past thirty years, it remains one of the most unequal in the world. In 2023, 59 million Brazilians—27.4% of the population—were living in poverty. As René Silva, a community activist and journalist from Complexo do Alemão, puts it, ‘what we're facing isn't a fight against crime; it's a fight against poverty.’ In this sense, surveillance becomes yet another form of hyper-policing directed at marginalized communities.

“Suppose to be constantly surveilled, whatever you do: going to work, the post office, or shopping” hypothesizes Daniel Edler Duarte, associate researcher at the State University of Rio de Janeiro and the Center for the Study of Violence at the University of São Paulo, “even if the the system were able to guarantee 95 percent accuracy, as its supporters claim, we would still have thousands of errors. Now imagine being a Black mother who knows facial recognition software can make a mistake and target her teenage son: obviously, she will be afraid.”

In Salvador, in the state of Bahia - an epicenter of facial recognition use for public security in Brazil - although the project is considered a success by the local government, “not only have crime rates not improved, but police lethality has increased in recent years, ”, explained Thallita Lima, research coordinator at O Panóptico, a platform of the Center for the Study of Security and Citizenship (CESeC) monitoring new public security technologies in Brazil.

Facial recognition is part of the largest current contract with the Bahia State Security Secretariat: each camera point costs an average of \$12,600, plus the infrastructure specified in the contract. Total expenditure amounts to \$126.35 million through July 2026 for implementation and operation in 78 of Bahia’s 417 municipalities.

According to [O Panóptico](#), the funds invested in equipment and software could instead finance 1,500 mobile ICU ambulances, 300 emergency care units (UPA), or a hospital for 32 years. Despite the massive investment, violence in Bahia has increased. In 2022, nearly 7,000 homicides were recorded, according to the latest [Brazilian Public Security Forum report](#). Among the 50 cities with the highest homicide rates, 12 are in Bahia.

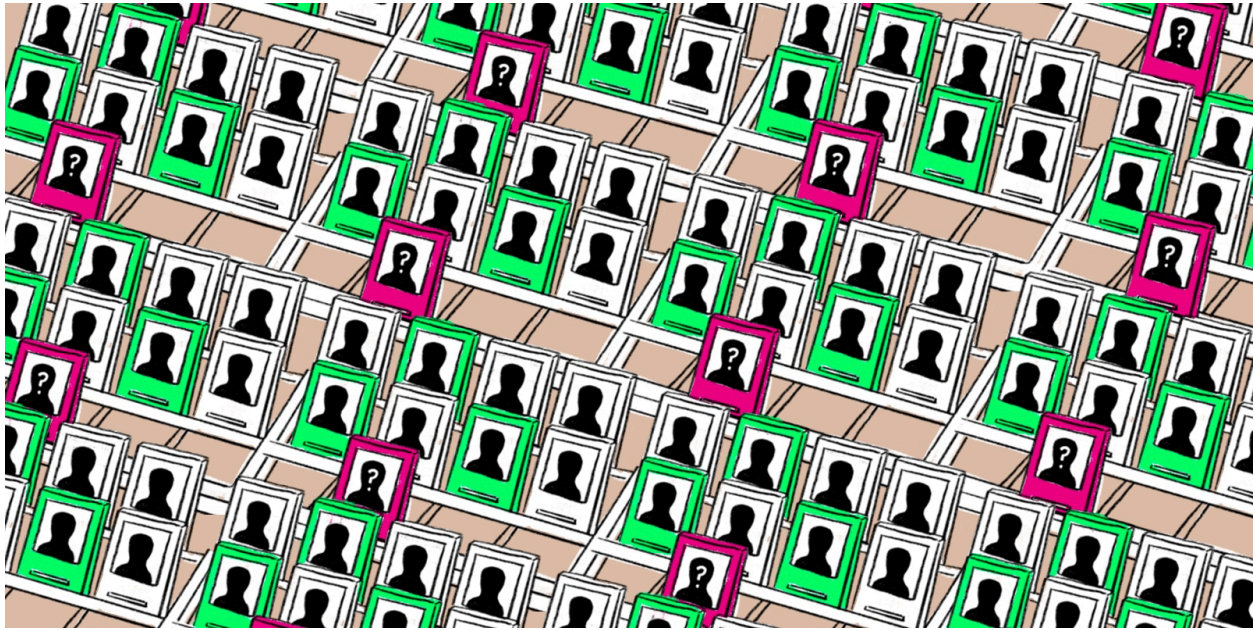
A [recent report](#) produced by the Center for Security and Citizenship Studies (CESeC) and the Public Policy and Internet Laboratory (Lapin), to measure the effectiveness of biometric recognition technologies, underlines that, between the few States which provided data, Bahia stood out with the highest number of arrests using the technology, more than half of these arrests were related to minor crimes.

“The entire state of Bahia - observes Lima- has been flooded with cameras”; however, in the lack of transparency, knowing if these systems actually work is not possible.

What is known, as Lima explains, is that to train the algorithm to recognize a human face, one must start with an image database. In Brazil, the database used is that of people with outstanding warrants from the National Justice Council. The system captures faces and identifies similarities, working with probabilities rather than certainties: if the reference database contains many people of color, the system will recognize more individuals of that specific type.

“Since Brazil’s prison population is predominantly Black,” Lima clarifies, “this system is fed accordingly, and if an error translates into police action, it can result in arbitrary arrests or violent interventions. This is what we call ‘algorithmic racism’: the machine is not neutral and makes more mistakes with Black people, even more with Black women, and even more with non-binary individuals.”

A Dangerous Legal Void and Civil Society's Response



“Manual del Pequeñx Vigiladx” (Access Now)

The situation described by O Panóptico’s coordinator represents a complex problem, worsened by the lack of clear regulation, because in Brazil, there is still no national law specifically regulating the complete use of facial or biometric recognition.

Currently, the framework is fragmented, relying mainly on the Lei Geral de Proteção de Dados Pessoais (LGPD – Law no. 13.709/2018), the Federal Constitution, and local regulations adopted by individual states or municipalities.

The LGPD considers biometric data as “sensitive” and imposes principles of purpose, necessity, and transparency: information must be collected only for legitimate purposes, minimally, and with guarantees of security and accuracy.

However, Article 4, section III, of the same law excludes its application to data processing for purposes of public security, national defense, or investigative activities, creating a significant legal vacuum. Paragraph 1 of the same article stipulates that these cases should be regulated by a specific law, which has not yet been approved.

Consequently, each state or city can independently introduce facial recognition systems, often without unified guidelines, time limits, or clear control or transparency mechanisms. The Autoridade Nacional de Proteção de Dados (ANPD), the federal body overseeing LGPD enforcement, has no direct authority over biometric recognition projects adopted for security purposes.

Some bills are under discussion - for example, PL 2.144/2021, aiming to regulate the use of these technologies with transparency and audit criteria, and PL 3.495/2019, proposing a temporary moratorium - but none have been approved.

Meanwhile, in this situation of legal vacuum and insecurity, the only response comes from civil society organizations and research centers, which denounce the lack of solid legal foundations and call for a law that imposes limits, ensures transparency, and protects citizens' fundamental rights.

On September 3, 2024, Access Now, an international NGO defending and promoting digital rights, published the [Manual del Pequeño Vigilado](#).

The guide, developed in collaboration with Argentina's Coordinadora contra la Represión Policial e Institucional (CORREPI) and the Brazilian coalition Tira Meu Rosto Da Sua Mira, was created to provide people, particularly those at risk of being wrongly identified or arrested due to biometric surveillance systems, with tools to navigate the legal system. It includes instructions for proper identification, incident recording, requesting legal assistance, and seeking reparations.

The guidelines are clear and aim to prevent cases like Gildeane Taislane Santos from happening again: "Ask why you are being arrested; when you realize they are confusing you with someone else, identify yourself to the authorities who arrested you. Ask pedestrians and others present to record the situation, or do it yourself if it does not pose greater risk. Finally, inform someone that you have also been arrested by mistake."