Two articles from a New York Times Investigation

A. China's Expanding Surveillance State

June 21, 2022

B. 'An Invisible Cage': How China Is Policing the Future

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China's Expanding Surveillance State

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Times reporters spent over a year combing through government bidding documents that reveal the country's technological road map to ensure the longevity of its authoritarian rule.

A Times investigation analyzing over 100,000 government bidding documents found that China's ambition to collect digital and biological data from its citizens is far more expansive and invasive than previously known.

0. Introduction

China is collecting a staggering amount of personal data from everyday citizens at a previously-unknown scale, a Times investigation has found. Phone-tracking devices are now everywhere. The police are creating some of the largest DNA databases in the world. And the authorities are building upon facial recognition technology to collect voice prints from the general public.

The Times's Visual Investigations team and reporters in Asia spent over a year analyzing more than a hundred thousand government

bidding documents. They call for companies to bid on the contracts to provide surveillance technology, and include product requirements and budget size, and sometimes describe at length the strategic thinking behind the purchases. Chinese laws stipulate that agencies must keep records of bids and make them public, but in reality the documents are scattered across hard-to-search web pages that are often taken down quickly without notice. ChinaFile, a digital magazine published by the Asia Society, collected the bids and shared them exclusively with The Times.

This unprecedented access allowed The Times to study China's surveillance capabilities. The

Chinese government's goal is clear: designing a system to maximize what the state can find out about a person's identity, activities and social connections, which could ultimately help the government maintain its authoritarian rule.

Here are the investigation's major revelations.

1. Chinese police analyze human behaviors to ensure facial recognition cameras capture as much activity as possible.

Analysts estimate that more than half of the world's nearly one billion surveillance cameras are in China, but it had been difficult to gauge how they were being used, what they captured and how much data they generated. The Times analysis found that the police strategically chose locations to maximize the amount of data their facial recognition cameras could collect.

In a number of the bidding documents, the police said that

they wanted to place cameras where people go to fulfill their common needs — like eating, traveling, shopping and entertainment. The police also wanted to install facial recognition cameras inside private spaces, like residential buildings, karaoke lounges and hotels. In one instance, the investigation found that the police in the city of Fuzhou in the southeast province of Fujian wanted to install a camera inside the lobby of a franchise location of the American hotel brand Days Inn. The hotel's front desk manager told The Times that the camera did not have facial recognition capabilities and was not feeding videos into the police network.

The Chinese government bidding documents analyzed by The Times outline the authorities' Surveillance ambitions.CreditCredit...The New York Times. This figure is based on an animation in the original post

Primrose, a spokeswoman for the hotel's parent company, Marriott International, said that in 2019 the local government requested surveillance footage, and that the company adheres to local regulations, including those that govern cooperation with law enforcement.

These cameras also feed data to powerful analytical software that can tell someone's race, gender and whether they are wearing glasses or masks. All of this data is aggregated and stored on government servers. One bidding document from Fujian Province gives an idea of the sheer size: The police estimated that there were 2.5 billion facial images stored at any given time. In the police's own

words, the strategy to upgrade their video surveillance system was to achieve the ultimate goal of "controlling and managing people."

2. Authorities are using phone trackers to link people's digital lives to their physical movements.

Devices known as WiFi sniffers and IMSI catchers can glean information from phones in their vicinity, which allow the police to track a target's movements. It's a powerful tool to connect one's digital footprint, real-life identity and physical whereabouts.

The phone trackers can sometimes take advantage of weak security practices to extract private information. In a 2017 bidding document from Beijing, the police wrote that they wanted the trackers to collect phone owners'

usernames on popular Chinese social media apps. In one case, the bidding documents revealed that the police from a county in Guangdong bought phone trackers with the hope of detecting a Uyghur-to-Chinese dictionary app on phones. This information would indicate that the phone most likely belonged to someone who is a part of the heavily surveilled and oppressed Uyghur ethnic minority. The Times found a dramatic expansion of this technology by Chinese authorities over the past seven years. As of today, all 31 of mainland China's provinces and regions use phone trackers.

3. DNA, iris scan samples and voice prints are being collected indiscriminately from people with no connection to crime.

The police in China are starting to collect voice prints using sound recorders attached to their facial recognition cameras. In the southeast city of Zhongshan, the police wrote in a bidding document that they wanted devices that could record audio from at least a 300-foot radius around cameras. Software would then analyze the voice prints and add them to a database. Police boasted that when combined with facial

analysis, they could help pinpoint suspects faster.

In the name of tracking criminals — which are often loosely defined by Chinese authorities and can include political dissidents — the Chinese police are purchasing equipment to build large-scale iris-scan and DNA databases.

The first regionwide iris database — which has the capacity to hold iris samples of up to 30 million people — was built around 2017 in Xinjiang, home to the Uyghur ethnic minority. Online news reports show that the same contractor later won other government contracts to build large databases across the country. The company did not

respond to The Times's request for comment.

The Chinese police are also widely collecting DNA samples from men. Because the Y chromosome is passed down with few mutations, when the police have the y-DNA profile of one man, they also have that of a few generations along the paternal lines in his family. Experts said that while many other countries use this trait to aid criminal investigations, China's approach stands out with its singular focus on collecting as many samples as possible.

We traced the earliest effort to build large male DNA databases to Henan Province in 2014. By 2022, bidding documents analyzed by The Times showed that at least 25

out of 31 provinces and regions had built such databases.

4. The government wants to connect all of these data points to build comprehensive profiles for citizens — which are accessible throughout the government.

The Chinese authorities are realistic about their technological limitations. According to one bidding document, the Ministry of Public Security, China's top police agency, believed the country's video surveillance systems still lacked analytical capabilities. One of the biggest problems they identified was that the data had not been centralized.

The bidding documents reveal that the government actively seeks

products and services to improve consolidation. The Times obtained an internal product presentation from Megvii, one of the largest surveillance contractors in China. The presentation shows software that takes various pieces of data collected about a person and displays their movements, clothing, vehicles, mobile device information and social connections.

In a statement to The Times, Megvii said it was concerned about making communities safer and "not about monitoring any particular group or individual." But the Times investigation found that this product was already being used by Chinese police. It creates the type of personal

dossier authorities could generate for anyone, that could be made accessible to officials across the country.

China's Ministry of Public Security did not respond to faxed requests for comment sent to its headquarters in Beijing, nor did five local police departments or a local government office named in the investigation.

‘An Invisible Cage’: How China Is Policing the Future

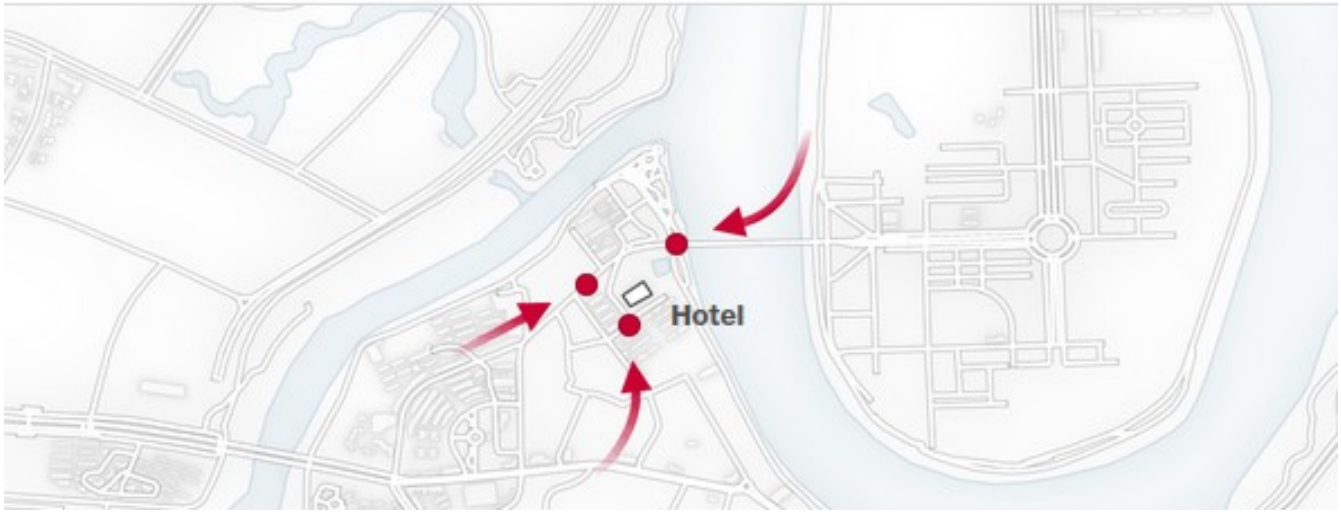
June 25, 2022

Paul Mozur, Muyi Xiao and John Liu

https://www.nytimes.com/2022/06/25/technology/china-surveillance-police.html

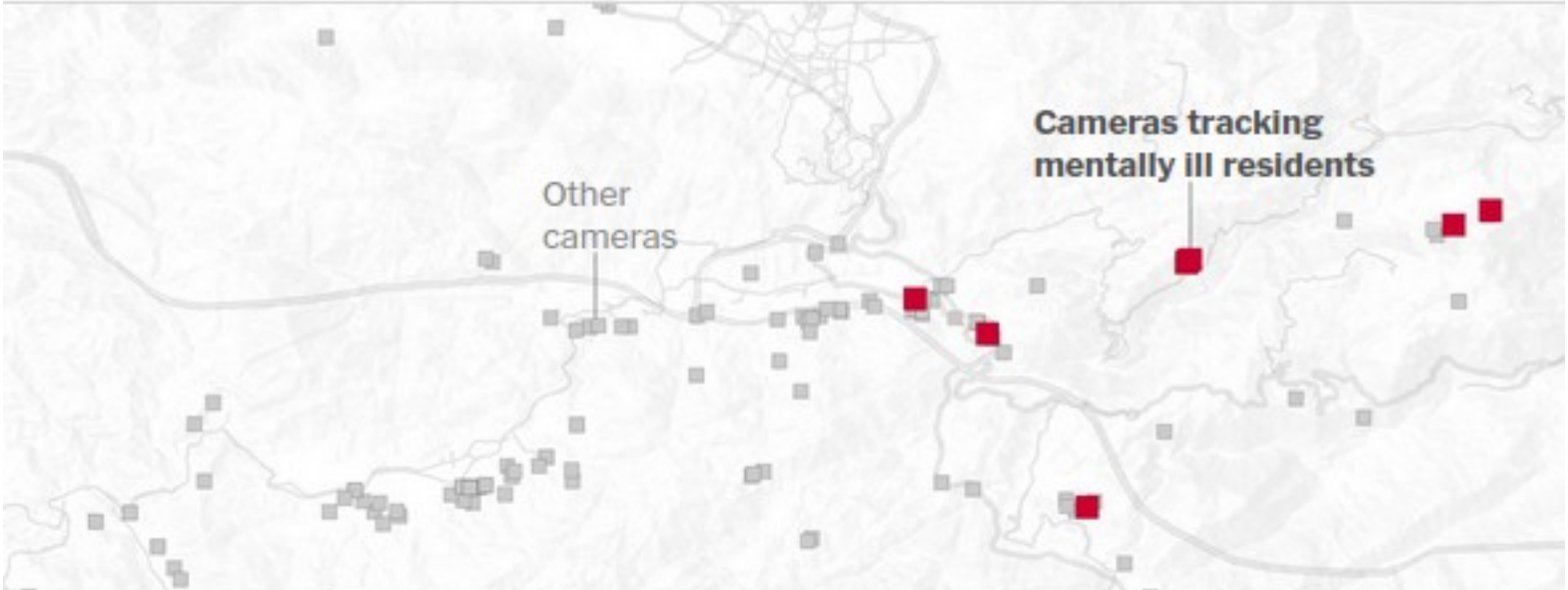
Across China, the police are buying technology that harnesses vast surveillance data to predict crime and protest before they happen. The systems and software are targeting people whose behavior or characteristics are suspicious in the eyes of an algorithm and the Chinese authorities, even if they've done nothing wrong.

Three people with a criminal record check into the same hotel in southeast China. An automated system is designed to alert the police.



A man with a history of political protest **buys a train ticket to Beijing**. The system could flag the activity as suspicious and tell the police to investigate.

A woman with mental illness in Fujian leaves her home. **A camera installed by her house** records her movements so the police can track her.



1. Overview

The more than 1.4 billion people living in China are constantly watched. They are recorded by police cameras that are everywhere, on street corners and subway ceilings, in hotel lobbies and apartment buildings. Their phones are tracked, their purchases are monitored, and their online chats are censored. Now, even their future is under surveillance.
The latest generation of technology digs through the vast amounts of data collected on their daily activities to find patterns and aberrations, promising to predict crimes or protests before

they happen. They target potential troublemakers in the eyes of the Chinese government — not only those with a criminal past but also vulnerable groups, including ethnic minorities, migrant workers and those with a history of mental illness.

They can warn the police if a victim of a fraud tries to travel to Beijing to petition the government for payment or a drug user makes too many calls to the same number. They can signal officers each time a person with a history of mental illness gets near a school.

It takes extensive evasive maneuvers to avoid the digital tripwires. In the past, Zhang Yuqiao, a 74-year-old man who

has been petitioning the government for most of his adult life, could simply stay off the main highways to dodge the authorities and make his way to Beijing to fight for compensation over the torture of his parents during the Cultural Revolution. Now, he turns off his phones, pays in cash and buys multiple train tickets to false destinations.

While largely unproven, the new Chinese technologies, detailed in procurement and other documents reviewed by The New York Times, further extend the boundaries of social and political controls and integrate them ever deeper into people's lives. At their most basic, they justify suffocating surveillance and violate privacy,

while in the extreme they risk automating systemic discrimination and political repression.

Surveillance cameras set up in April at a residential compound in Mudanjiang, Heilongjiang Province.Credit...China Daily/Via Reuters

For the government, social stability is paramount and any threat to it must be eliminated. During his decade as China's top leader, Xi Jinping has hardened and centralized the security state, unleashing techno-authoritarian policies to quell ethnic unrest in the western region of Xinjiang and enforce some of the world's most severe coronavirus lockdowns. The space for dissent, always limited, is rapidly disappearing.

"Big data should be used as an engine to power the innovative development of public security work and a new growth point for nurturing combat capabilities," Mr. Xi said in 2019 at a national public security work meeting.

The algorithms, which would prove controversial in other countries, are often trumpeted as triumphs.

In 2020, the authorities in southern China denied a woman's request to move to Hong Kong to be with her husband after software alerted them that the marriage was suspicious, the local police reported. An ensuing investigation revealed that the two were not often in the same place at the same time and had not spent the Spring Festival holiday together. The police concluded that the marriage had been faked to obtain a migration permit.

The same year in northern China, an automated alert about a man's frequent entry into a residential

compound with different companions prompted the police to investigate. They discovered that he was a part of a pyramid scheme, according to state media.
The details of these emerging security technologies are described in police research papers, surveillance contractor patents and presentations, as well as hundreds of public procurement documents reviewed and confirmed by The Times. Many of the procurement documents were shared by ChinaFile, an online magazine published by the Asia Society, which has systematically gathered years of records on government websites. Another set, describing software bought by the authorities in the port city of

Tianjin to stop petitioners from going to neighboring Beijing, was provided by IPVM, a surveillance industry publication.

China's Ministry of Public Security did not respond to requests for comment faxed to its headquarters in Beijing and six local departments across the country.

The new approach to surveillance is partly based on data-driven policing software from the United States and Europe, technology that rights groups say has encoded racism into decisions like which neighborhoods are most heavily policed and which prisoners get parole. China takes it to the extreme, tapping nationwide reservoirs of data that allow the

police to operate with opacity and impunity.
[The article has a video here: How China Is Policing the Future - The New York Times.mp4]
Often people don't know they're being watched. The police face little outside scrutiny of the effectiveness of the technology or the actions they prompt. The Chinese authorities require no warrants to collect personal information.
At the most bleeding edge, the systems raise perennial science-fiction conundrums: How is it possible to know the future has been accurately predicted if the police intervene before it happens? Even when the software fails to deduce human behavior, it can be

considered successful since the surveillance itself inhibits unrest and crime, experts say.

“This is an invisible cage of technology imposed on society,” said Maya Wang, a senior China researcher with Human Rights Watch, “the disproportionate brunt of it being felt by groups of people that are already severely discriminated against in Chinese society.”

Products from Megvii, an artificial intelligence start-up, on display at a tech industry exhibition center in Beijing.Credit...Florence Lo/Reuters

2. ‘Nowhere to Hide’

In 2017, one of China’s best-known entrepreneurs had a bold vision for the future: a computer system that could predict crimes.
The entrepreneur, Yin Qi, who founded Megvii, an artificial intelligence start-up, told Chinese state media that the surveillance system could give the police a search engine for crime, analyzing huge amounts of video footage to intuit patterns and warn the authorities about suspicious behavior. He explained that if cameras detected a person spending too much time at a train station, the system could flag a possible pickpocket.

“It would be scary if there were actually people watching behind the camera, but behind it is a system,” Mr. Yin said. “It’s like the search engine we use every day to surf the internet — it’s very neutral. It’s supposed to be a benevolent thing.”

He added that with such surveillance, “the bad guys have nowhere to hide.”

Five years later, his vision is slowly becoming reality. Internal Megvii presentations reviewed by The Times show how the start-up’s products assemble full digital dossiers for the police.

“Build a multidimensional database that stores faces, photos, cars, cases and incident records,” reads a description of one product,

called “intelligent search.” The software analyzes the data to “dig out ordinary people who seem innocent” to “stifle illegal acts in the cradle.”

A Megvii spokesman said in an emailed statement that the company was committed to the responsible development of artificial intelligence, and that it was concerned about making life more safe and convenient and “not about monitoring any particular group or individual.”

An internal presentation slide for Megvii’s “intelligent search” product. Bar charts sort groups of monitored people by category.

Products from Megvii, an artificial intelligence start-up, on display at a tech industry exhibition center in Beijing.Credit...Florence Lo/Reuters. The website has an animation.

Similar technologies are already being put into use. In 2022, the police in Tianjin bought software made by a Megvii competitor, Hikvision, that aims to predict protests. The system collects data on legions of Chinese petitioners, a general term in China that describes people who try to file

complaints about local officials with higher authorities.
It then scores petitioners on the likelihood that they will travel to Beijing. In the future, the data will be used to train machine-learning models, according to a procurement document.
Local officials want to prevent such trips to avoid political embarrassment or exposure of wrongdoing. And the central government doesn't want groups of disgruntled citizens gathering in the capital.
A Hikvision representative declined to comment on the system.
Under Mr. Xi, official efforts to control petitioners have grown increasingly invasive. Zekun

Wang, a 32-year-old member of a group that for years sought redress over a real estate fraud, said the authorities in 2017 had intercepted fellow petitioners in Shanghai before they could even buy tickets to Beijing. He suspected that the authorities were watching their communications on the social media app WeChat.

The Hikvision system in Tianjin, which is run in cooperation with the police in nearby Beijing and Hebei Province, is more sophisticated.

The platform analyzes individuals' likelihood to petition based on their social and family relationships, past trips and personal situations, according to

the procurement document. It helps the police create a profile of each, with fields for officers to describe the temperament of the protester, including “paranoid,” “meticulous” and “short tempered.” Many people who petition do so over government mishandling of a tragic accident or neglect in the case — all of which goes into the algorithm. “Increase a person’s early-warning risk level if they have low social status or went through a major tragedy,” reads the procurement document.

A police patrol in Xichang, Sichuan Province. Software allows Chinese authorities to target individuals according to preconceived ideas about their traits.Credit...Costfoto/Future Publishing via Getty Images

3. Automating Prejudice

When the police in Zhouning, a rural county in Fujian Province, bought a new set of 439 cameras in 2018, they listed coordinates where each would go. Some hung above intersections and others near schools, according to a procurement document.
Nine were installed outside the homes of people with something in common: mental illness.
While some software tries to use data to uncover new threats, a more common type is based on the preconceived notions of the police. In over a hundred procurement documents reviewed by The

Times, the surveillance targeted blacklists of “key persons.”
These people, according to some of the procurement documents, included those with mental illness, convicted criminals, fugitives, drug users, petitioners, suspected terrorists, political agitators and threats to social stability. Other systems targeted migrant workers, idle youths (teenagers without school or a job), ethnic minorities, foreigners and those infected with H.I.V.
The authorities decide who goes on the lists, and there is often no process to notify people when they do. Once individuals are in a database, they are rarely removed, said experts, who worried that the new technologies reinforce

disparities within China, imposing surveillance on the least fortunate parts of its population.

In many cases the software goes further than simply targeting a population, allowing the authorities to set up digital tripwires that indicate a possible threat. In one Megvii presentation detailing a rival product by Yitu, the system's interface allowed the police to devise their own early warnings.

With a simple fill-in-the-blank menu, the police can base alarms on specific parameters, including where a blacklisted person appears, when the person moves around, whether he or she meets with other blacklisted people and the frequency of certain activities.

The police could set the system to send a warning each time two people with a history of drug use check into the same hotel or when four people with a history of protest enter the same park. Yitu did not respond to emailed requests for comment.

An interface from a Yitu product that lets the police set parameters to receive alerts on suspicious behavior.CreditCredit...The New York Time. Capture of an animation available on the original source..

In 2020 in the city of Nanning, the police bought software that could look for “more than three key people checking into the same or nearby hotels” and “a drug user calling a new out-of-town number frequently,” according to a bidding document. In Yangshuo, a tourist town famous for its otherworldly karst mountains, the authorities bought a system to alert them if a foreigner without a work permit spent too much time hanging around foreign-language schools or bars, an apparent effort to catch people overstaying their visas or working illegally.

In Shanghai, one party-run publication described how the authorities used software to identify those who exceeded

normal water and electricity use. The system would send a “digital whistle” to the police when it found suspicious consumption patterns.

The tactic was likely designed to detect migrant workers, who often live together in close quarters to save money. In some places, the police consider them an elusive, and often impoverished, group who can bring crime into communities.

The automated alerts don’t result in the same level of police response. Often, the police give priority to warnings that point to political problems, like protests or other threats to social stability, said Suzanne E. Scoggins, a

professor at Clark University who studies China's policing.

At times, the police have stated outright the need to profile people. "Through the application of big data, we paint a picture of people and give them labels with different attributes," Li Wei, a researcher at China's national police university, said in a 2016 speech. "For those who receive one or more types of labels, we infer their identities and behavior, and then carry out targeted pre-emptive security measures."

4. Toward Techno Totalitarianism

Mr. Zhang first started petitioning the government for compensation over the torture of his family during the Cultural Revolution. He has since petitioned over what he says is police targeting of his family.

As China has built out its techno-authoritarian tools, he has had to use spy movie tactics to circumvent surveillance that, he said, has become “high tech and Nazified.”

Surveillance cameras within 100 meters of Zhang Yuqiao’s home. There are no cameras in other

places in his village, he said.Credit...Zhang Yuqiao
When he traveled to Beijing in January from his village in Shandong Province, he turned off his phone and paid for transportation in cash to minimize his digital footprint. He bought train tickets to the wrong destination to foil police tracking. He hired private drivers to get around checkpoints where his identification card would set off an alarm.
The system in Tianjin has a special feature for people like him who have “a certain awareness of anti-reconnaissance” and regularly change vehicles to evade detection, according to the police procurement document.

Whether or not he triggered the system, Mr. Zhang has noticed a change. Whenever he turns off his phone, he said, officers show up at his house to check that he hasn't left on a new trip to Beijing.

Even if police systems cannot accurately predict behavior, the authorities may consider them successful because of the threat, said Noam Yuchtman, an economics professor at the London School of Economics who has studied the impact of surveillance in China.

"In a context where there isn't real political accountability," having a surveillance system that frequently sends police officers "can work pretty well" at discouraging unrest, he said.

Surveillance cameras within 100 meters of Zhang Yuqiao's home. There are no cameras in other places in his village, he said. Credit...Zhang Yuqiao

Once the metrics are set and the warnings are triggered, police officers have little flexibility, centralizing control. They are evaluated for their responsiveness to automated alarms and effectiveness at preventing

protests, according to experts and public police reports.

The technology has encoded power imbalances. Some bidding documents refer to a “red list” of people whom the surveillance system must ignore.

One national procurement document said the function was for “people who need privacy protection or V.I.P. protection.”

Another, from Guangdong Province, got more specific, stipulating that the red list was for government officials.

Mr. Zhang expressed frustration at the

The authorities “do whatever it takes to silence the people who raise the problems,” Mr. Zhang said.
Credit...Zhang Yuqiao

ways technology had cut off those in political power from regular people.

“The authorities do not seriously solve problems but do whatever it takes to silence the people who raise the problems,” he said. “This is a big step backward for society.”

Mr. Zhang said that he still believed in the power of technology to do good, but that in the wrong hands it could be a “scourge and a shackle.”

“In the past if you left your home and took to the countryside, all roads led to Beijing,” he said. “Now, the entire country is a net.”

Surveillance cameras on a lamppost in Beijing.Credit...Roman Pilipey/EPA, via Shutterstock

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