THE AMERICAN ANTIFASCIST'S
GUIDE TO THE CLOUD

June 2024

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About the book

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Tech, and the world we live in

Over the past two decades, the tech industry has dramatically changed how the world works. Tech has changed the way people communicate with each other, created new business models, and invented new kinds of jobs. It has shifted power and money between people, companies, and governments.

You can see these effects in news headlines. Tech stories make up some of the most important and controversial news stories of our era. In the first half of 2024, we saw the continued rise of AI, an attempted TikTok ban over fears of growing Chinese influence, additional worker protections legislated for gig workers and workplace organizers, and protests denouncing Big Tech's role in perpetuating war and genocide in Palestine. (Among many, many other stories, and these are just the stories in the US!)

Behind all of these news stories is something called *the cloud*. The cloud is a piece of physical and digital infrastructure without which the modern internet cannot exist, for better or for worse. However, despite how critical the cloud is to the world, few people can clearly explain what it actually is.

This is a shame, but it is also a fixable problem. In order to build a better world — a world free from war, genocide, and imperialism, where workers hold power, where we do not reinvent the pitfalls of our existing society — we need to understand the good and bad of the world we already live in. This book tries to help close this literacy gap for the cloud, and more broadly, tech itself.

This book is for organizers, journalists, protestors, activists, and advocates. It is written for anti-fascists of all kinds. The goal of this book is to help you understand what the cloud's continued existence means for our world.

The cloud

What is the cloud?

If you've used the internet in the last ten years, you might already have a basic understanding of the cloud as a place where your personal data is stored. For example, you might have photos "saved in the cloud" on Instagram or iCloud, "synced" across devices you own (e.g. phones, laptops, etc). You also probably have a search history on Google or Amazon, used to determine what kinds of ads you are shown on the internet. However, the cloud's reach goes much further than storing your personal data or internet usage habits. To illustrate what the cloud actually is, we'll need a short history lesson.

In the late 1990s, a company called Amazon was founded as an online bookstore. Amazon quickly grew to be more than just a bookstore: less than ten years after it was founded, it became the largest online retailer in the world. Amazon's earliest employees solved lots of physical logistics problems (i.e. needing warehouses and workers to store and ship goods), in addition to technical problems. Amazon's software engineers needed to write the code that made the online store work. They also needed computers to run that code, physical space with uninterrupted electric power to put those computers in, people to repair and replace computers when they broke, and contracts with internet service providers to connect computers to the internet.

Early on at Amazon, the company's leadership realized that in order for the company to smoothly grow from tens to hundreds to thousands of workers, they had to restructure the company. Leadership wanted their workers to reduce their scope of work— in other words, to focus on smaller pieces of the puzzle. They split up the company, and created a system where teams had smaller, more well defined responsibilities. After the restructuring, rather than having individual workers who understood how the whole of Amazon worked, they had instead:

- a team of engineers keeping servers running smoothly, and repairing servers as they broke
- a team writing the code for the Amazon website
- a team writing the code to redirect Amazon customers trying to access "unhealthy" (i.e. slow or broken) servers to "healthy" (i.e. working) servers
- a team writing the code for the database that the website's data was stored in
- a team making sure that when a new version of the website's code was released, customers could access the website with minimal downtime

Technical terms

Code and *software* are two words that basically mean the same thing. When an engineer writes code or software, they are writing down a series of instructions that a computer can "run" (i.e. work on). *Hardware* is different from software because while software is *just* code, hardware refers to the computer chips that make up computers in the physical world.

There are simpler pieces of code (e.g. "add 1+1 and tell me the answer") and more complicated pieces of code (e.g. "download an image file from the internet and crop out the bottom half, then save it to the computer's memory"). Everything that a computer does is made up of many, many lines of code chained together.

A *server* is a special kind of computer that physically lives inside a data center. Data centers are warehouses specially built to store computers. Data centers vary in size; a small data center might store ten computers, whereas a large data center might store millions.

When two computers talk to each other over the internet, we call the computer asking the questions "the client" and we call the computer answering the questions "the server". For example, whenever you open Instagram, your phone (the client) asks one of Instagram's servers for photos to display. In this book, we mostly refer to computers as servers. This is because, in the examples we give, most of the computers *are* servers.

This new company structure changed the relationships teams had with each other. Each team was now responsible for just their own part of the system (called a *service*), not any other team's part. Teams began to sell their services as full-on products to other teams, as if they were their own mini-companies within the company. Customer teams no longer had to know anything about the internals of the services they were buying to make them work. In turn, this allowed customer teams to focus on writing the code for just one part (i.e. their part) of the company.

For example, one team at Amazon offered a service called Simple Storage Service, or S3 for short. S3 let customers save any file they owned to permanent storage (like saving a file to a database). All a customer team had to do to use S3 was write one line of code: the code would select a file, and it would then be uploaded to one of the S3 team's servers. From there on out, the customer would never have to reason about which server their file ended up on, or how often the file was backed up. The file would simply always exist, *somewhere*. If the customer ever needed the file again, they could re-download the file from S3 from any server they had access to, with just one additional line of code.

Naturally, teams began to negotiate and compete with each other for better and easier-to-use products. The number of teams at Amazon grew quickly, and so did the list of services they offered. By the early 2000s, this system was a runaway hit. It was such a well-liked idea in the tech industry that Amazon started selling their services to other companies, under a new subsidiary called Amazon Web Services (AWS). Soon after, other companies like Google and Microsoft followed suit with their own competing suites of services.

The value these services offered was especially clear to new startup tech companies. By buying services from Amazon, new companies could immediately take advantage of the benefits the services provided, off-the-shelf. They wouldn't need to hire hundreds of new engineers to build out their own data centers and recreate Amazon's services from scratch. Instead, new companies could simply buy Amazon's capabilities directly from them.

This system of buying and selling services is what we now refer to as "the cloud".

A few examples

Depending on how "the cloud" is used in a sentence, it can mean a few different things:

- It can mean the millions of servers, sitting in hundreds of data centers, that allow this system of interconnected cloud services to work. For example, "Amazon has lots of cloud servers around the world."
- It can refer to the phenomenon where the majority of data in the world today is stored on cloud servers, rather than on consumer tech devices (e.g. smartphones or laptops). For example, "I don't back up my photos onto a hard drive, because they're already backed up in the cloud."
- It can refer to the business model and the sales tactics used to sell these cloud services to other companies. For example, "Most companies, tech or not, are paying for the cloud in some way or another."
- It can refer to companies that purchase cloud services from companies like AWS, that in turn sell software to other companies. For example, "Even though Adobe and Slack are not owned by AWS, they are still sometimes considered *cloud service providers*."

How big is the cloud?

While Amazon in the early 2000s is a good example of the most basic version of the cloud, the cloud of twenty years ago is only a fraction of the size of the cloud today. Virtually every new company, app, and website created today is built on top of the cloud. Cloud service providers sell services for smartphones, AI, "Big Data" processing, finance, marketing, security, video games, and hundreds of other industries. The only practical limit on how big a company can grow using the cloud is how much money they are willing to spend.

Global spending on the cloud is estimated to exceed $1 trillion before 2030. The largest players in cloud are Amazon, Google, and Microsoft. Collectively, they control about 60% of the market. Cloud is a high margin business, so companies that sell cloud services make more profit off of the cloud than other parts of their business. While revenue from AWS made up only 17% of Amazon's $143 billion total revenue in the first fiscal quarter of 2024, 62% of Amazon's operating income came from AWS. In other words, most of the money Amazon can actually spend comes from their cloud subsidiary.

Technically advanced companies use cloud services to optimize app attention spans to fractions of a second, and payment profit margins to fractions of a cent. Even "mom-and-pop" small businesses use the cloud for a lot of things, directly or indirectly: to order new product, pay suppliers, bank, sell goods and services, and advertise. Whether you're calling an Uber or buying a sandwich at your local deli, it's likely some small amount of the money you pay is going to Amazon (or one of Amazon's competitors).

Governments are strongly invested in cloud service providers, and vice versa. Amazon, Microsoft, Google, and Oracle have contracts with the NSA, CIA, Pentagon, and various other US federal, state, and local branches, that are collectively worth tens of billions of dollars. A company's choice of which cloud service provider to purchase services from is highly dependent on where the company is based. Companies doing business in China or Russia may choose (or be forced to use) a domestic provider like Yandex or Alibaba because of sanctions or other geopolitical reasons.

Cloud data centers are located around the world, on every continent besides Antarctica. However, US-based cloud service providers have more political influence in some regions than others, and they have built more data centers in regions where they are more influential. In regions aligned with the US, the cloud has more tolerance to failures and outages. For example, in Europe, code that interacts with a failing data center can often easily switch to use another

European data center. In Africa, a similar kind of failure may take longer to fix. This is true for routine failures, as well as more unexpected emergencies. Cloud service providers account for things like war, terrorism, and ecological disaster when choosing locations to build new data centers.

Palestine

On May 6, 2021, widespread protests broke out in occupied East Jerusalem over the eviction of six Palestinian families in Sheikh Jarrah, a neighborhood in the city. The city of East Jerusalem is recognized by international law as part of the Palestinian territories, but it has been annexed by Israel since 1967. In response to the protests, the Israeli police escalated the conflict by storming the al-Aqsa mosque en masse. Armed conflict followed in both the West Bank and Gaza, including Israeli bombings of Gaza. Protests abroad and other international political actions followed in the days after.

One small but significant political action abroad was taken in tech. A group of Google workers called *Jewish Diaspora in Tech* had concerns about the cultural environment in their workplace and sent an internal letter to Google executives. The letter asked Google leadership to heed the requests of suffering Palestinian coworkers, fund relief for Palestinians affected by the conflict, address suffering done to Palestine in writing, reject rhetoric conflating anti-Zionism and antisemitism, and review business relationships with institutions that may have violated Palestinian human rights.

Fighting in Palestine did not cease for another two weeks, by which time several hundred Palestinian civilians had been killed, a few tens of Israeli civilians had been killed, and tens of thousands of Palestinians had been displaced. It was a crisis that would foreshadow, both politically and technologically, the ongoing Israel-Palestine war.

Though it would not be reported widely for another two years after the 2021 crisis, Israel's bombing of Gaza would also foreshadow the ongoing war in another way. The crisis was the first time the Israeli Defense Forces used AI tools to identify bombing targets. During the crisis, a technical system the IDF dubbed *The Gospel* was used to identify building targets to bomb with superhuman speed. "To put it in perspective," former IDF Chief of Staff Aviv Kochavi told Israeli news outlet Ynet, "in the past, we would produce 50 targets in Gaza in a year. Now, this machine created 100 targets in a single day, with 50% of them being attacked."

Shortly after the crisis had ended, the state of Israel publicly announced Project Nimbus, a 4 billion ILS (≈ $1 billion USD) deal with Google and Amazon to "... provide the government, the defense establishment, and others with an all-encompassing cloud solution". The announcement outlined a plan to build and open data centers in Israel, which would allow the Israeli government to move into the cloud. It would also provide Israel protection against international boycott movements like Boycott, Divestment, and Sanctions (BDS), because the

actual data centers powering Israel's cloud would live within its borders. Even if Israel's contract with Google or Amazon were ever to fall into jeopardy, Israel would always "own" its own data.

Another provision of the Nimbus contracts blocked Google and Amazon from shutting down services for individual Israeli government entities, such as entities developing software for war or the expansion of illegal West Bank settlements. Both Google's and Amazon's announcements of the partnership downplayed this provision. Instead, they focused instead on the cloud's potential in more popular market segments like the public sector, finance, healthcare, and tech startups.

For the next two years, there was little additional public outcry about Nimbus. Here and there, a new internal document would be leaked, revealing additional details about a Nimbus contract. For example, one leak revealed that Google had pitched Israel on AI services in the cloud. For the most part, these leaks were not widely publicized in mainstream news media. Though conflict continued to brew and illegal settlements continued to expand, the ceasefire deal that ended the 2021 crisis helped keep a period of relative peace in Palestine. By the midpoint of 2023, both Google and Amazon had fully opened up cloud services in Israeli regions to the general public (in addition to the Israeli government).

On October 7, 2023, the ongoing Israel-Palestine war began with Hamas-led attacks on Israel, in the areas surrounding Gaza. This war is a continuation of wars dating back to the 1948 Palestine war, whereafter the British withdrew from Palestine and 700,000 Palestinians were forcefully expelled from their country to create the modern state of Israel. The Israeli response to the October 7 attacks would become part of what we now understand to be genocide in Gaza.

Genocide mobilized additional worker organizing within Google. In early March 2024, Google engineer Eddie Hatfield attended a New York City tech conference called MeetTheTech. In the middle of a Google Israel speech at the conference, Hatfield interrupted, "I am a Google Cloud software engineer, and I refuse to build technology that powers genocide, apartheid, or surveillance!" Hatfield was fired a few days later, but video of his protest went viral and revealed the existence of Nimbus to new audiences.

In early April 2024, leaks revealed the existence of *Lavender*, an AI-powered system that the IDF uses to carry out assassinations of Palestinian militants, similar to the 2021 crisis's The Gospel. However, while The Gospel was used to identify building targets to bomb, Lavender is used to target individual humans. Several of the leakers criticized Lavender's accuracy, claiming Lavender had a 10% false positive rate, that non-militants were part of the dataset used to train

Lavender, and that Lavender's ensuing bombings happened without human verification. In other words, Lavender removed culpability for civilian deaths from humans. Without Lavender, responsibility would have fallen on soldiers, or commanding officers. Lavender enabled humans to dodge responsibility by placing blame on the technical system itself. As one source told Israeli news outlet +972, "The machine did it coldly. And that made it easier." The leaks did not contain information on which cloud Lavender was built on top of.

Artificial Intelligence

AI technologies and trends change quickly. As a result, sometimes the term "AI" is even more difficult to understand than "the cloud". When software engineers refer to AI today, they usually mean a field of study called machine learning. In machine learning, engineers write statistical algorithms to categorize and match data. The output of these algorithms is referred to as a model. Training a model requires lots of computing resources, so models are often trained on cloud servers.

Within machine learning is a newer subfield called *deep learning*, where AI is modeled after neural networks (like the ones in animal brains). Deep learning models can "find" some structure from their inputs, rather than needing an engineer to pre-define what structure exists. One popular example of deep learning today is the large language model (LLM), the type of model that powers OpenAI's ChatGPT.

It is unlikely that Israel's The Gospel or Lavender AI systems are powered by LLM: rather, they are likely powered by more "traditional" kinds of machine learning.

On April 17, 2024, a group of nine Google workers (the *Nimbus Nine*, led by a group called No Tech For Apartheid) staged sit-ins in Google's Sunnyvale and New York City offices, as part of a larger protest accusing the company of genocide profiteering. Bosses at Google had the Nimbus Nine arrested, and in the coming days Google would come to fire over 50 workers they claimed were part of the protests. The workers, including one worker who was fired for simply watching (i.e. not participating in) the protest, would later file an NLRB complaint against the company.

Neither Google nor Amazon has publicly indicated any changes to Nimbus in response to the sit-ins. However, political costs are rising. Following the sit-ins, Google circulated an internal memo threatening employees with termination for further disruptions. It is not yet clear what the future of Palestine and the cloud will hold. In the meantime, genocide in Gaza continues.

Conflict minerals, Congo, and China

The data centers that make up the cloud contain millions of servers, and every one of those servers is made up of computer chips. Making computer chips is not easy: no one country has the capability to produce computer chips alone. Making computer chips requires raw materials sourced from around the world, as well as specialized materials processing, chip fabrication, and testing plants, which are also spread across the world.

A very small percentage of the world population has the knowledge necessary to produce chips. There are only about 2 million semiconductor (chip) engineers in the world, compared to about 26 million software engineers. And for the most part, these engineers only deeply understand individual parts of the chip production process. It is not expected that those in the chip engineering profession understand how chips are made farm-to-table, from the mining and processing of raw materials to the fabrication and testing of chips.

Some of the raw materials necessary to create computer chips are *conflict minerals*, which are minerals sold to fund armed conflict or mined with forced labor. Government legislators around the world have passed regulations around a core set of conflict minerals used to build electronics, including chips. This set of minerals is called *3TG*. 3TG refers to conflict minerals (coltan, casserite, wolframite, and gold) commonly mined in the Democratic Republic of the Congo (DRC). There are also sometimes other minerals that fit this description, such as cobalt, that are not included in 3TG. Conflict and corruption in Congo make regulations on conflict minerals difficult to enforce.

Congo should be an extremely wealthy country in terms of the value of the raw materials within its borders. However, by most development indexes, it is one of the least developed countries in the world. A long history of extractive colonialism and armed conflict have made it difficult for the country to develop.

Congo was a colony of Belgium from 1876 to 1960. In 1960, Belgium ceded control of the country. Patrice Lumumba, leader of the pan-Africanist party Congolese National Movement, was elected Congo's first prime minister. However, Lumumba's seat as Prime Minister was short-lived. The US and Belgium saw him as a political threat, and feared he would align Congo with the Soviet Union. Lumumba was assassinated less than one year later in a coup covertly backed by the two countries. Replacing him was the US-aligned Mobutu Sese Seko, who would lead the country until 1997.

Cobalt

Though cobalt is used in the manufacturing of some kinds of computer chips, it is most commonly talked about in reference to batteries. Cobalt is a critical mineral in the production of lithium-ion batteries. Lithium-ion batteries are the kind of rechargeable battery used in electric vehicles and smartphones, making them key to the world's "green revolution". Congo holds the largest cobalt reserves in the world.

Cobalt is sometimes mined with *artisanal mining* practices, where the mineral is mined by human workers by hand, with little to no industrial automation. Artisanal mining is often associated with health, safety, and environmental issues, as well as illegal labor practices like forced labor and child labor. The practice is largely illegal in Congo. Artisanal cobalt mining is a declining practice in Congo, but nevertheless still accounts for a significant portion of cobalt mined in the country.

Today, Congo is still in conflict, and the control of land used to mine conflict minerals is a big reason why. The Armed Forces of the Democratic Republic of the Congo (FARDC) are clashing with a variety of armed rebel groups with different political agendas. The largest of these rebel groups is the March 23rd Movement (M23), who are backed by the government of neighboring Rwanda.

Though mining is also an important part of Rwanda's economy, the country exports more than it mines. Conflict minerals are smuggled across the Congo-Rwanda border and laundered internationally before they are used in manufacturing. Fighting between FARDC and M23 has occurred mostly in the eastern region of Congo, where Congo borders Rwanda and Uganda, including in the large regional capital Goma. It has caused the displacement of hundreds of thousands of Congolese.

The parent companies of cloud service providers release conflict minerals reports to comply with laws that try to stop conflict minerals from entering the supply chain. However, smuggling persists nonetheless. It is widely understood that a portion of conflict minerals mined in Congo are not "DRC conflict free" even if on paper, everything looks legal. In February 2024, the EU entered into an agreement to secure minerals from Rwanda for "green and clean energy objectives". In response to the agreement, the government of Congo sent a letter to Apple accusing the company of allowing minerals funded by conflict to enter its supply chain.

Neighboring Rwanda

Conflict in eastern Congo today is fought largely over conflict minerals, but the conflict has roots in ethnic tensions, like the ones that caused the Rwandan genocide. Rwanda and eastern Congo share a border, and the two countries were both formerly colonies of Belgium.

In 1994, political tensions in Rwanda between the ruling majority Hutu ethnic group and the minority Tutsi culminated in the Rwandan genocide. The genocide resulted in 500,000 - 1 million mass murders of Tutsi. During Belgian colonial rule, the government administered the country in a way that sharpened ethnic tensions. Race science was a popular idea among the ruling class, and it was used to "prove" that the Tutsi were racially superior to the Hutu. This was one contributor, among many, to the tensions that caused the genocide.

The genocide officially ended with the Tutsi-aligned Rwandan Patriotic Front's capture of the capital city of Kigali, followed by the rest of the country, about 100 days from the start of the genocide. The Rwandan Patriotic Front is still the ruling political party of Rwanda today.

Also implicated in this conflict is Congo's future potential for development. Congo does not process its own minerals: rather, they are sold and shipped abroad for processing. In addition, the ownership of Congolese mining rights often falls in foreign hands. Different governments around the world have competing interests in Congo.

The most deeply invested foreign player in Congo today is China. Over the past two decades, China has taken control of the vast majority of Congo's cobalt mines, in exchange for billions of dollars of Chinese investment in Congo's public infrastructure. In competition with the US, China continues to deepen investments in Congo. China's role as a development partner to Congo is often undercut by accusations of corruption, but similar accusations have been leveled against the US as well.

Both the US and China are investing billions of dollars to lessen their dependence on each other in computer chips. The two countries have effectively been at economic war since 2018, with expanded export controls targeting chips added in 2023. Behind the scenes, the US is attempting to become a major player in chip production, so they can cut off China from the most advanced computer chips. AI has greatly accelerated demand for chips (to use in the cloud), and the US wants to corner the AI market internationally. Today, American companies (e.g. AMD and Nvidia) carry out chip research in the US, but their chips are actually fabricated in places like Taiwan and South Korea.

In December 2023, the US brokered a three-day ceasefire deal between Congo and Rwanda in advance of elections in Congo, to compete for favor with the Congolese government. Elections passed with relatively little violence, with the existing incumbent president Felix Tshisekedi winning re-election in a landslide victory. Like previous recent elections in the country, the election was loudly contested after the fact. In May 2024, the government of Congo declared that it had thwarted a coup attempt from the United Congolese Party, a small party-in-exile based in the US, which was not present on the December ballot. On May 29, the government announced a new cabinet of ministers, ending a months-long impasse that started with Tshisekedi's re-election.

Demand for computer chips, batteries, and other electronics has thrust Congo between international powers competing for its natural resources. Sometimes this competition happens through diplomacy, and other times, through violent or covert means. Under peace, Congo would have more leverage to negotiate with these states, but armed conflict has created a crisis in the country, with a risk of spillover conflict into other neighboring regions. Conflict in Congo continues to escalate.

Planting seeds

Over the last two decades, the spread of new and "innovative" tech has contributed to new problems in society: housing crises in large American cities, inadequate worker protections for gig workers, the expansion of surveillance tech, and now environmental and ethical problems introduced by the newest generation of AI. These issues, directly or indirectly, are all linked to the cloud, and there are so many of them that they could make up their own book. But in Congo and in Palestine, we see the most extreme consequences of how the cloud is used in the real world. The cloud has costs that are paid not in dollars, but in human life.

In Congo, war is fought over (and funded by) the materials that are used to make the cloud itself. These materials are in high global demand; they are needed to help develop the rest of the world, while Congo remains war-torn and underdeveloped. In Palestine, the cloud is used to murder. It is used to host and facilitate an automated killing machine, where the murders of innocent Palestinians by Israeli forces can be blamed on the machine itself, rather than on the humans who carried out or ordered the murders.

The cloud isn't a person. It didn't make any of the decisions that led up to this. Those decisions were made by governments, organizations, and people. However, the cloud's very existence has contributed to (and in many cases, accelerated) this ongoing death.

The cloud is a piece of technological infrastructure. Like all technology, it is "neither good, nor bad; nor is it neutral" (*Kranzberg's First Law*). Like other technological infrastructure, like the factory or the freeway, the cloud is used for both ethically good and ethically bad purposes. And like the design of the factory and the freeway, the cloud's design reflects the biases, limitations in knowledge, and political beliefs of the humans that developed it.

The cloud was originally built to take a big system (i.e. everything needed for Amazon's website to work) and split it into smaller pieces that were easier to understand. Splitting up the puzzle, however, made it easier for engineers to ignore the bigger picture of what they were actually building.

As a software engineer working on cloud databases today, it might be easy to ignore that the databases you work on could be used by the IDF. After all, cloud databases are not built specifically with any one customer in mind. They can be used by innocent video streaming websites and genocidal military forces the same. The cloud, by design, allows engineers like

you to work on the backbone of the machine itself, without concern for how the machine is used in the real world. Despite this, the code you write could be used to kill nevertheless.

In the present day, the US is bustling with political resistance against various -isms: fascism, racism, capitalism, colonialism, and imperialism, among others. Every day, new seeds are planted in the pursuit of a better world. Over the past two decades we have seen revolt, protest, and other kinds of political mobilization take place in various forms: the Occupy movement, Ferguson uprising, Dakota Access Pipeline protests, George Floyd protests, and now Stop Cop City and pro-Palestine activism.

Mass demonstrations against Israel's occupation of Palestine have occurred in the US for decades, but we have seen an explosion of new demonstrations in the past nine months. At pro-Palestine protests in big American cities, it is common to see people waving flags of other countries, including the flag of Congo. Often this is a way to link the struggles of these countries with Palestine's: to say those countries have also been politically and economically disenfranchised by American interests.

Workers in tech, banded together in numbers, have also been a part of this pro-Palestine movement. As the Nimbus Nine demonstrated in their sit-ins, engineers can be political activists. Their demands can have teeth, and their activism can have real costs for the companies and governments they target.

Technology often contributes to war, genocide, and imperialism, but how or why it does is often unclear, especially to non-technical people. This book was written to connect some of the dots, using Palestine and Congo as examples, but it isn't an exhaustive guide. Like technology, the world changes quickly. It's on us to keep each other up to speed.

Whether we're building tech, or building movements, the world that we build is the one that we'll get.

Appendix

Dedications

This book is dedicated to the people of Gaza, who are facing a genocide supported by and funded by the United States. Over 37,000 Gazans have been killed by the state of Israel as of the publication of this book. Gaza once had twelve functional universities, but there are none remaining. All remaining public hospitals remain effectively crippled. Starvation is widespread. The rate of killing of journalists in Gaza is higher than in any country, ever. All press on the ground in Palestine, foreign and Israel-domestic, must comply with the Israeli military censor. Self-censorship is widespread.

Free Palestine.

This book is dedicated to the people of the world struggling against colonialism, imperialism, and exploitation at the hands of powerful governments like the United States, like those of Congo and Palestine. In Congo alone, hundreds of thousands have been displaced by fighting since the beginning of this year.

This book was inspired by activists in America working to bring an end to genocide in Palestine. Sometimes activists have had different (or opposing) political beliefs, but they have fought side-by-side nonetheless. We chose the word “anti-fascist” in the book’s title because we thought it was the one thing that might group them all together.

This book was also inspired by *Blockchain Chicken Farm* (2020), a book by Xiaowei Wang. Thank you Xiaowei, for showing us that good technical writing can be understood and internalized even by non-technical people.

Credits

My name is Randall Ma. I am a software engineer. I wrote this book with help from friends and colleagues in Big Tech, small-er tech, media, political organizing, academia, and other backgrounds.

The photo used in the front cover’s design was taken at the March on Washington for Gaza in January 2024. It is provided courtesy of Jonah Buchanan.