

Algorithmic Palestine: A Partial Path to Liberation

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“How can we return the occupied territories?
There is nobody to return them to.”

Golda Meir

“Liberation as an intellectual mission, born in
the resistance and opposition to the
confinements and ravages of imperialism.”

Edward W. Said

“For every security measure, there is a counter
measure that breeds further insecurity.”

Sari Nusseibeh

“You have something in this world, so stand
for it.”

Ghassan Kanafani

Algorithmic technology rarely serves Palestine, but it can, if Palestinians have sovereignty over their data, language, models, land, and lives. For the last 75 years, since the creation of the State of Israel and the *Nakba*, Palestine has lacked sovereignty over all its basic living conditions. Currently, most algorithmic technology serves Israel’s occupation and surveillance of every sphere of Palestinian existence. Our paper first describes the current algorithmic conditions imposed on Palestine, showing how Silicon Valley Big Tech firms collude with the occupation even as they develop programs for Palestinians claim technology itself can lead to liberation. Rejecting such tech solutionism, we show the promising work Palestinians currently produce and delineate next steps for a free and thriving Palestine that include an intentional use of technology

on terms Palestinians set themselves. We believe education and technology are essential to this end, and with a clear understanding of the many potential harms of algorithms, we propose that Palestinians design and maintain their own to serve their communities. Will algorithms free Palestine? No. But they can help build a free Palestine, which could include the right of return and/or full sovereignty over our contiguous lands, free of Israel's divisions, surveillance, and administration.

Technological Colonization Continues Status Quo

The arrival of Big Tech in Palestine threatens to maintain the colonial status quo which began in the nineteenth century. Before digital technologies, Western powers divided up the globe amongst themselves, British controlled Palestine until 1948, and the Palestinians longed for decolonization.¹ Meanwhile, European Jewry, having faced pogroms for centuries, began immigrating Palestine in the late nineteenth century. After World War II and the Holocaust, many Jews appealed for a state of their own as a bulwark against antisemitism. On November 29 1947, the UN General Assembly proposed a partition plan that divided Palestine into Jewish Israel and Arab Palestine, making Jerusalem a neutral zone.² Arguing that the partition violated the principles of national self-determination in the UN Charter, the Arab League rejected plan.³ Instead, they upheld the independence for Palestine with an Arab majority and minority rights for the Jews.⁴ UN adoption of the partition ultimately answered Jewish calls for reparations, offering them a homeland in historic Palestine, while displacing 750, 000 Palestinians

¹ Edward W. Said. *The Question of Palestine*. Vintage, 1992.

² Myra Immell, ed. *The Creation of the State of Israel*. Greenhaven Publishing LLC, 2009, 13

³ Sami Hadawi. *Bitter Harvest: A Modern History of Palestine*. Interlink Publishing Group Incorporated, 1991, 26-8.

⁴ Benny Morris. *1948: A History of the first Arab-Israeli War*. Yale University Press, 2008, 67.

and initiating today's ongoing genocide.⁵ Palestinians have waited 75 years for justice and reparations from this decision to which they never consented. As depicted by Figure 1, only 15% of historic Palestine remains in possession of Palestine. Examining the colonization of Palestine from a historical perspective establishes that the creation and maintenance of Israel is only possible because of settler colonial violence against the Palestinians.⁶



Figure 1

In an essay that rejects claims of tech solutionism and offers a vision of liberation with the help of technologies Palestinians shape themselves, it must be understood that technology remains *secondary* to all the basic existential and infrastructural needs of the

⁵ Elia Zureik. *Israel's Colonial project in Palestine: Brutal Pursuit*. Routledge, 2015

⁶ Omar Jabary Salamanca, et al. "Past is present: Settler colonialism in Palestine." *Settler Colonial Studies* 2.1 (2012): 1-8.

Palestinians. In Gaza, Israel indirectly controls all aspects of life. The military administer all seven land crossings to air and maritime space and can enter Gaza at will. Israel owns all the utilities including water, electricity, and telecommunications. Palestinians can be cut off from their clean and safe water supply and must request a permit to construct any water installation.⁷ Water conditions in Palestine are so critical that areas like Gaza where 90-95% of their drinking water is contaminated and unfit for consumption. The contaminated water contributes to the average Palestinian using about 73 liters a day, while in some areas in the West Bank average falls at about 20 liters per person daily.⁸ Conditions in the West Bank also remain precarious. Split into 165 Palestinian enclaves under partial Palestinian National Authority (PNA) civil rule, Palestinian communities remain divided by 230 Israeli settlements. More than 762,000 Palestinians live under encroaching settlers, ongoing occupation of Israeli armed forces, and shootings, riots, curfews, lockdowns, and perpetual unrest.⁹ Considering this history and these daily conditions, it is long past time for Palestinian reparations, and history has made clear that Western powers, governmental and corporate fail to serve our communities.

⁷ Erika Weinthal and Jeannie Sowers. "Targeting infrastructure and livelihoods in the West Bank and Gaza." *International Affairs* 95.2 (2019): 319-340.

⁸ Samer Abuzerr, et al. "Microbiological quality of drinking water and prevalence of waterborne diseases in the Gaza strip, Palestine: a narrative review." *Journal of Geoscience and Environment Protection* 7.04 (2019): 122.

⁹ Marco Allegra, and Erez Maggor. "The metropolitanization of Israel's settlement policy: The colonization of the West Bank as a strategy of spatial restructuring." *Political Geography* 92 (2022): 102513.

Tech Solutionism is an Old Story

A decade ago, Professor Helga Tawil-Souri warned that technology alone could not liberate Palestine. Along with Miriyam Aouragh, she considered how the much-touted Palestine community online had achieved great solidarity and activism, but none of this virtual unity could change the everyday fact that Palestinians live divided from each other by heavily armed Israeli walls and guards. Power relations on the ground continue to impede Palestinian existence even as a virtual space, hindering Palestinian ability to educate themselves, grow their economies, and thrive as a people.¹⁰ While many have hoped technology and online communities could bring about an “Intifada 3.0,” Tawil-Souri and Aouragh remind audiences of Israel’s control of all telecommunications and refusal to acknowledge the existence of Palestine. In 2013, when Google changed “Palestinian Territories” to “Palestine” in its maps and search engine, Israeli deputy foreign minister Ze’ev Elkin swiftly protested to Google’s CEO. Ariel Sharon responded by declaring Palestine is “not a territorial or geopolitical entity.”¹¹ Figure 2 shows the public protest from 2014.

¹⁰ Helga Tawil-Souri, and Miriyam Aouragh. "Intifada 3.0? Cyber Colonialism and Palestinian Resistance." *The Arab Studies Journal* 22.1 (2014): 102-133.

¹¹ Ibid. 102.



Figure 2 [Getty]

Even in 2023, Palestinians use the Israeli telecommunication infrastructure either directly or through the Palestinian Paltel company, which allocates numbers reserved for it by the Israeli Ministry of Communications. Though long denied a local phone prefix, now Palestinians have a number, 970, which is no longer used by Israelis and allows for contact from Arab countries that block Israel's 972 code. However, service remains better on the 972 prefix. In a completely Israeli-administered technological society, it is clear any new technologies must also negotiate the geopolitical situation so that any public or corporate promises of investment in Palestine can be made for and shaped by Palestinians.

Currently, Palestinians have very little say as Big Tech corporations present themselves as neutral parties while investing in Israel and promising a better life for Palestinians. In fact, Tech giants cater to Israel because of its massive military-industrial complex which leads the world on the very same "security" technologies it uses to oppress Palestinians. Because of Israel's great military power, in particular their powerful intelligence units, Big Tech looks to Israel for tech innovation, especially in surveillance

and military technologies. Keen to learn what Israeli Defense Forces (IDF) specialized “Unit 8200” has developed, tech corps seek out unit alums who have become security entrepreneurs. In their glowing, widely read book on Israel’s tech economy, *Start-up Nation: The Story of Israel's Economic Miracle*, Dan Senor and Saul Singer ask a seemingly apolitical organizational question: What makes Israel such a successful tech economy? They answer it in similar terms: “the tight proximity of great universities, large companies, startups and the ecosystem that connects them – including everything from suppliers, an engineering talent pool and venture capital.”¹² Marveling at the teamwork and community mindset of “everyone knows everyone,” Senor and Singer describe in fact the advantages of an economy based on its security surveillance state. Numerous examples abound. For instance, Microsoft, which builds facial recognition technology through its Azure cloud computing platform, The Face API, asserts Microsoft “would never sell facial recognition for surveillance purposes,” but the company funded an Israeli facial recognition startup, AnyVision, whose technology was widely used in the West Bank. Only recently, after public outcry and other Israeli surveillance scandals, has Microsoft divested from AnyVision.¹³ Israel’s Pegasus spyware scandal offers another example of the far reach of Israel military-backed surveillance technologies that have massive geopolitical impact in Palestine and around the world. Developed in 2011, the Israeli spyware was discovered in 2016 when Emirati human-rights writer, Ahmed Mansoor Al Shehhi received a suspicious phishing link that would have infected his phone with the Pegasus virus.¹⁴ As of 2023, there seem to be few consequences from the

¹² Dan Senor and Saul Singer. *Start-up nation: The story of Israel's economic miracle*. Random House Digital, Inc., 2011.

¹³ Nick Statt. “Microsoft to end investments in facial recognition firms after AnyVision Controversy, The Verge, Mar 27, 2020.

¹⁴ Massive data leak reveals Israeli NSO Group's spyware used to target activists, journalists, and political leaders globally”. Amnesty International. July 18, 2021

scandal which erupted.¹⁵ Though currently blacklisted for infecting government communications across the globe, Pegasus has invested heavily in top lobbyists and law firms in an effort to lift restrictions on doing business, especially in America.¹⁶

Israel's surveillance technologies not only permeate every private and public sphere of Palestinian life, but they also endeavor to reduce the quality of social life to such an extreme, Palestinians are encouraged to abandon their land to settlers. Nowhere is this social intervention more prevalent than in East Jerusalem and Hebron, which Israeli officials claim to have transformed into "smart cities," a tech industry euphemism for surveillance state. A surveillance initiative called "Blue Wolf" collects photos of Palestinians faces for a military security phone app that flashes in red to instruct soldiers to detain a person, yellow for arrest, or green to allow the person to go. To build a comprehensive facial recognition database with real-time monitoring, which it describes as "Facebook for Palestinians," Israeli military units created prize incentives for soldiers to photograph Palestinians, including children and the elderly. One Israeli soldier whistleblower told *The Washington Post* that no Israeli would tolerate such a "total violation of privacy of an entire people."¹⁷ One Hebron resident, Yaser Abu Markhyah, describes how such surveillance is killing communal life among Palestinians. "We no longer feel comfortable socializing because cameras are always filming us." Issa Amro, a neighbor and activist who runs the group Friends of Hebron, asserts "They want to make our lives so hard so that we will just leave on our own, so more settlers can move in." Meanwhile, Jewish settlers use a separate smartphone app, White Wolf to check

¹⁵ Oxford Analytica. "Pegasus scandal is unlikely to alter Israel policy." Emerald Expert Briefings oxan-es (2021).

¹⁶ Uri Blau, "Pegasus Spyware Maker NSO Is Conducting a Lobbying Campaign to Get Off U.S. Blacklist," ProPublica, July 12, 2022.

¹⁷ Elizabeth Dwoskin, Israel escalates surveillance of Palestinians with facial recognition program in West Bank, *The Washington Post*, November 8, 2021.

Palestinian identities as people enter their settlements. Israeli Apartheid exists not merely in separate and unequal rights, living spaces, and roads, but in algorithms as well.

Defenders of Israel's surveillance state argue that all this security is necessary because Palestinians refuse to acknowledge the State of Israel, and Palestinian political institutions, along with Arab nations since 1948 have pledged to "drive the Jews into the sea."¹⁸ Critics of Palestinian liberation also claim that the terrible living conditions in Gaza result from the genocidal intentions of Gaza leadership, Hamas, the Islamist political party which gained control of Gaza in 2005 and split politically from the Palestinian Authority Palestinian government into the Fatah government in the West Bank. They argue that Hamas refuses to build its own infrastructure and instead uses all assistance money to build tunnels to attack Israel.¹⁹ The tunnels exist, and some sources corroborate Israel's claims to fear for its people and sovereignty,²⁰ while others say this fear that all Palestinians seek destroy Israel exists only in the heads of Israelis.²¹ Our paper endeavors not to address Israeli fears about Palestine, but rather to demonstrate the continued injustice of Israeli demands for "security" provide justification for much of the Israeli violence inflicted on Palestinians that have also prevented Palestinians from building technologies that could serve their communities.

Workers in Big Tech corporations that contract with Israel have clearly identified the violence of these projects and are organizing protests. Yet, tech company activism has produced ambivalent success, largely because these companies notoriously retaliate against worker activism and their shareholders tend to side with corporate interests.

¹⁸ Michael B. Shavelson, "New twist on Israeli history is just that," BU Bridge: Boston University Newspaper, March 31, 2000.

¹⁹ Big Hamas win in Gaza's election, BBC News, 28 January 2005.

²⁰ Adam Taylor, "Gaza tunnels: Hamas Metro," *The Washington Post*, May 14, 2021

²¹ Raef Zreik, "The Israeli Fear of the Palestinian Flag," *Haaretz*, May 28, 2022

Project Nimbus, a corporate contract to integrate all of Israel's government operations, including the military, into one cloud-based system, offers an example of the difficulty of protesting against tech corporations.²² Workers at Google and Amazon Web Services published a letter calling for termination of Project Nimbus, asserting it would "...make the systematic discrimination and displacement carried out by the Israeli military and government even crueller and deadlier for Palestinians."²³ When Israel announced this deal during the siege of Gaza, a group of 250 Jewish employees at Google, organized by the group Jewish Diaspora in Tech, sent a letter to their CEO in protest. Organizers of the "No Tech for Apartheid" campaign also gained support from MPower Change, Jewish Voice for Peace, The BDS Movement, Adalah Justice Project, American Muslims for Palestine, and more. Israel, anticipating public protest, included clauses in the deal that prevent corps from backing out. Amazon endeavored to present the project as one of inclusive access around the globe: "making the benefits of our world-leading cloud technology available to all our customers, wherever they are located."²⁴ More recently, organized efforts to end Project Nimbus have stalled, as Google stockholders voted against a BDS proposal.²⁵

Given such events, Palestinians have responded cautiously to Google's latest offer a three-year digital education and employment program announced in Jerusalem organized by Jest, the Jerusalem Entrepreneurs Association for Technology and Community Services.²⁶ While such investments appear promising, the truth is Palestine's

²² "Google 'retaliates' against worker protesting Israel contract," *Daily Sabah*, March 15, 2022.

²³ "Amazon, Google employees urge their companies to cut contracts with Israel," *The New Arab*, 12 October, 2021

²⁴ Eliyahu Kamisher Jewish Googlers opposed Israel contract, *Intermountain Jewish News*, Nov 11, 2021

²⁵ Michael Starr, "Google stockholders vote against BDS proposal on Israeli Nimbus Project," *The Jerusalem Post*, June 15, 2022.

²⁶ Mohammed Najib. "Palestine business community praises Google's \$10m tech initiative," *Arab News*, February 24, 2022.

universities already produce about 3,500 high-tech engineering graduates every year, but many of them go on to work in Israel or elsewhere. There are few opportunities that allow Palestinians to build for themselves at home on their own land. Many of Palestine's young engineers remain keenly aware of the tech opportunities that await them at the price of leaving Palestine or building for companies that work against Palestine. Such initiatives may sound philanthropic, but they fail to loosen Israeli control of technology. A highly publicized Google project often continues to exclude Palestinians from even gaining basic access. Palestinian programmer Akram Abunahla understands this reality, "I am a computer geek and to me, software and the latest gadgets are my whole world. But none of Google's paid services are available in Palestine."²⁷

Some critics adopt a firm isolationist position for the liberation in Palestine to ensure that their cause is not weakened. In Helga Tawil-Souri's "Media, Globalization, and the (Un)Making of the Palestinian Cause" she rejects any kind of tech solutionism and argues that the substance within Palestinian liberation has been diluted to fit the narratives of different ideologies.²⁸ Many critics of technology also argue that basic infrastructure and education remain more urgent than developing technology. We believe that both educating Palestinians and enabling them to build services that serve communities remain a single endeavor. Currently, educational disparities between Israeli and Palestinian youth remain enormous, with Palestinians suffering a dropout rate that is nearly twice that of their Israeli counterparts due to poverty, war, and lack of basic infrastructural services. While UN Humanitarian Director Jamie McGoldrick notes that "classrooms should be a sanctuary from conflict, where children can learn and develop

²⁷ Mitchell Plitnick, "A Palestine reckoning is coming to Big Tech. Just ask Google, Amazon and Facebook,"

²⁸ Helga Tawil-Souri. "Media, globalization, and the (un) making of the Palestinian cause." *Popular Communication* 13.2 (2015): 145-157.

into active citizens,” in fact Palestinian students live with “threats of demolition, clashes on the way to school between students and security forces, teachers stopped at checkpoints, and violent actions of Israeli forces and settlers on some occasions.” Amid these struggles, there have been some successes both funded by Big Tech and also independent. Google provided initial funding for Gaza Sky Geeks, a program of Mercy Corps established in 2011, is tech hub housing tech upskilling, coworking spaces and a startup accelerator. “Code for Palestine,” an independent Palestinian non-profit established in 2008, which have implemented programs in computer science and artificial intelligence. Indeed, their programs have yielded impressive results with nearly 90% of participants pursuing higher education in science and mathematics. Moreover, the programs have achieved a 71% referral to pass rate at Google.²⁹ With students performing at high levels enjoying resources and guidance, some organizations like Tech2Peace hope these initiatives might translate to peaceful interactions between Israelis and Palestinians. A deeper investment in Palestinian technology has produced advanced NLP projects that serve Palestinians while also contributing to cutting algorithmic technology. Curras, for example, is the first annotated corpus for the Palestinian Arabic dialect, consisting of 55,960 tokens annotated with rich morphological and semantic information. The project involved Palestinians at all levels of expertise from coders and data scientists to linguistics and dialect specialists, to everyday speakers of Palestinian dialect who helped with annotation. Such projects add to global knowledge about Palestinian and empower our own workforces.³⁰

²⁹ <https://www.codedotx.org/code-for-palestine>

³⁰ Mustafa Jarrar, et al. "Curras: an annotated corpus for the Palestinian Arabic dialect." *Language Resources and Evaluation* 51.3 (2017): 745-775.

We believe such projects that integrate Palestinians at all levels, not simply the elites in higher education, but workers and native language speakers of all backgrounds offer a model for advancement of Palestinians. With a clear-eyed understanding of the obstacles of technology, we proceed cautiously addressing each harm and situation, knowing there are political, infrastructural struggles from Israeli surveillance to Hamas's and the Palestinian Authority's control of internet use. As long as the Israeli military continues to confiscate computer equipment, destroy machinery and infrastructure, the challenge to provide educational and computing opportunities to Palestinians remain. For us, the way forward is to raise global awareness of Palestine and to commit greater efforts to educating Palestinians in Palestine, bringing hardware and educators providing consistent education through pandemics and eruptions of violence. By strengthening the organizations that deliver such education, and recruiting from college campuses around the globe, we can teach Palestinians how to build projects that serve their people. Such efforts enable Palestinians to join research and work around the world, but most importantly to also work in Palestine so that they can contribute to their local communities and bring money in. While many successful Palestinians must go abroad, but the goal remains to build at home—to refuse to abandon Hebron or Jerusalem for example, but rather to stay, return, and fill each Palestinian “smart city” with smart Palestinians who control their own algorithms. Algorithms will not set us free, but they will help us share our culture and workforce to a world that is better with the liberation of Palestine.

