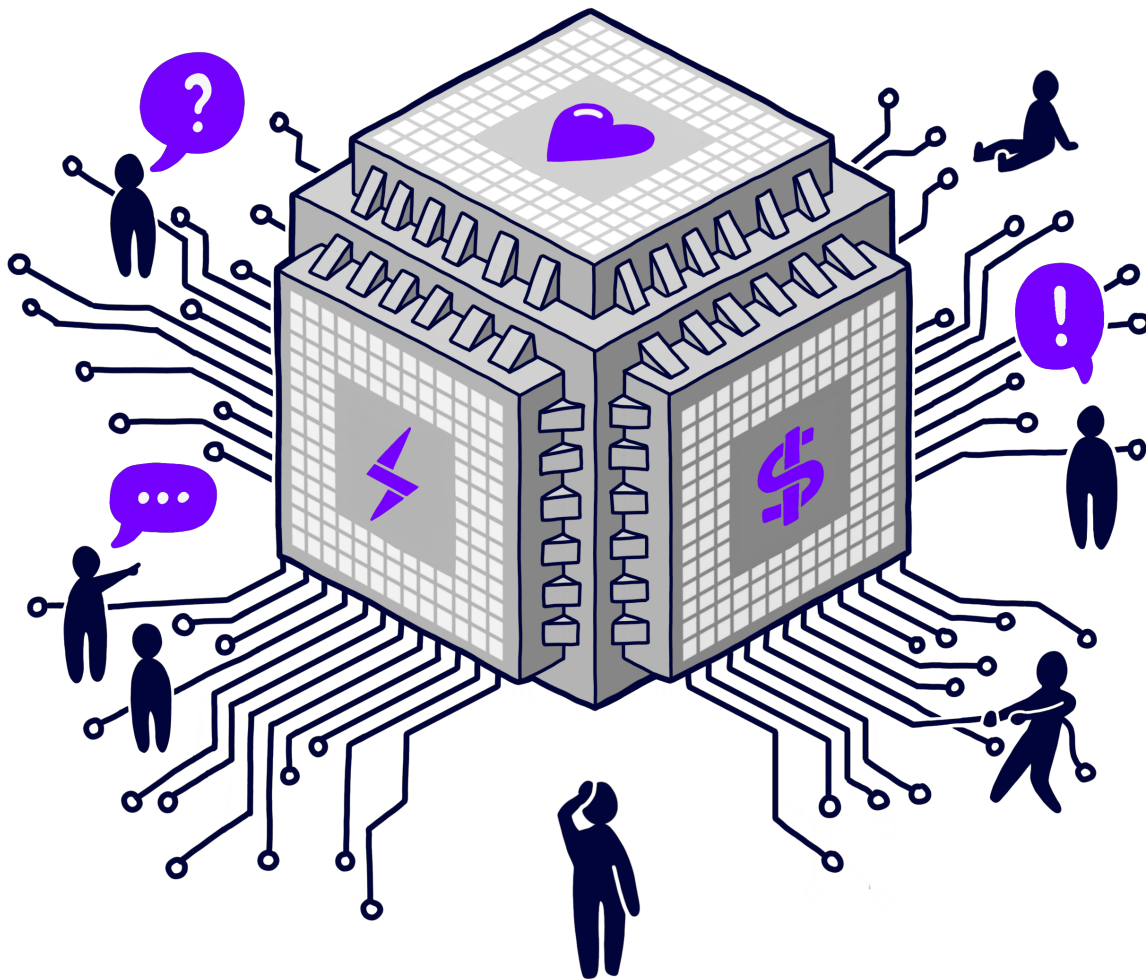


With Great Tech Comes Great Responsibility



A student guide for navigating
ethical issues in the tech industry

// Essential History for Students Building Our Tech

Tech has made many promises. Silicon Valley constantly seeks to improve our lives, releasing devices and services that seek to optimize our work and heighten our play. It has pledged to solve global challenges, with an almost fanatical belief in the power of code to solve the thorniest issues of our time, from the political to the economic to the environmental. It is, to a small but very powerful segment of society, the force most responsible for the transformation of our society.

The reality is that though technology has provided us with many new tools, the industry has also been minimally transparent on how it recognizes, addresses, and takes responsibility for myriad ethical issues that have arisen from the widespread adoption of its products and services.

The ethical issues facing the tech industry are abundant — military contracts, invasive data mining, biased algorithms, inhumane warehouse conditions, racist facial recognition software, and more. Addressing ethical issues in tech can be overwhelming for students interested in working in tech. But change in the industry is not impossible. And it is, increasingly, necessary.

The first step is recognizing that those who build tech have always faced ethical challenges and that all tech workers, from warehouse workers to software developers, have always been at the forefront of organizing for change. By learning from the history of tech worker organizing and understanding the tactics used by tech workers today, students entering the tech industry can be empowered to improve the future of tech and the future of society.



// Timeline

The history of tech worker organizing is long. This timeline is not exhaustive, but highlights key challenges and tactics that are reflected in our present time.

"There's nothing new under the sun, but there are new suns."
-Octavia Butler

1969

A group called **Computer People for Peace** formed in New York City and petitions the Association for Computing Machinery to adopt principles opposed to the Vietnam War, foreign wars, discrimination in tech, and software that violates user privacy. The group was involved in various organizing over the years, including the production of a newsletter called *Interrupt*, the distribution of anti-war pamphlets, and a campaign for the release of the Black Panther and computer programmer Clark Squire.¹

We oppose the war in Vietnam, U.S. military presence throughout the world, and economic and political subversion of other nations. We oppose discrimination as practiced in the computer field. We oppose the establishment of mass data banks which pose a threat to our privacy.
— Computer People for Peace

"We oppose the establishment of mass data banks"

That same year, a collection of professors, students, technology workers, and others formed **Science for the People** to protest the involvement of the scientific community in the military and the use of science in military endeavors.²

1990

The **Silicon Valley Toxics Coalition** (SVTC) was founded after manufacturing leaks at IBM and Fairchild Electronics caused widespread birth defects and health issues for communities in Silicon Valley.³ Members of the community, tech workers, law enforcement, emergency workers, and environmental activists banded together in response to the crisis, forming SVTC. Since its founding, SVTC has led multiple education campaigns on proper disposal methods for hazardous materials in the tech industry and conducted research on the effects of such materials on workers and the community.⁴

¹ "Mainframe, Interrupted: Joan Greenbaum on the Early Days of Tech Worker Organizing." *Logic*. January 1, 2019. <https://logicmag.io/play/joan-greenbaum-on-the-early-days-of-tech-worker-organizing/>

² About SftP. Accessed January 6, 2020. <https://scienceforthepeople.org/about-sftp/>

³ Paul Rogers. "Ten Years after Toxic Plume, Morgan Hill and Surrounding Communities Work to Find Normalcy." *The Mercury News*. January 25, 2013. <https://bayareane.ws/37Jm6hk>

⁴ Daniel A. Cornford. *Working People of California*. Berkeley: University of California Press, 1995.

1990

An organizing drive among largely-immigrant janitors at Shine Maintenance, an Apple contractor, saw over 130 people join the Service Employees International Union (SEIU) Local 1877. Once the company became aware of the union drive, it began requiring residency documentation; almost none could provide the required verification and were fired.⁵ The campaign kicked off a series of janitorial union drives, resulting in a contract with Apple janitors in 1992, another contract at Hewlett-Packard, and hundreds of new members for SEIU.

One of the key tactics used in the union campaign was a publicity attack against Apple, as explained by Mike Garcia, president of SEIU Local 1877: "Apple spends a lot of money on its image and our strategy attacked it. We helped people to understand that the company was exploiting immigrant janitors and we forced Apple to take responsibility – we told Apple 'it's your system – you control the contractors; you're causing the exploitation.'"

"We helped people to understand that the company was exploiting immigrant janitors and we forced Apple to take responsibility"

1992

Workers at a Versatronex factory in Sunnydale, California, struck. The strike was the first in Silicon Valley for years, described as a possible "harbinger of increased organizing activity in this bastion of the non-union shop."⁶ The workers, mainly Latinx circuit board manufacturers, complained of poor training handling hazardous materials and dangerous conditions; the workers eventually won recognition of a union, one of many similar fights in Silicon Valley at the time.

2015

The **Tech Workers Coalition** was founded after full-time tech employees began meeting with and organizing alongside subcontracted workers, including cafeteria workers, security guards, and janitors. These initial meetings helped tech workers learn from each other and allowed tech workers to identify ways they could support subcontracted service workers struggling for unionization and greater economic protections. These forums helped workers across fields recognize their shared interests and needs within the tech industry. Since its founding, TWC has supported various unionization efforts for subcontracted service workers and supported the efforts of tech workers fighting for ethical and political causes within their companies.⁷

⁵ David Bacon. "Organizing Silicon Valley's High Tech Workers." <http://dbacon.igc.org/Unions/04hitec5.htm>

⁶ Reese Erlich. "Rare Employee Strike At Silicon Valley Plant." *The Christian Science Monitor*. November 24, 1992. <https://www.csmonitor.com/1992/1124/24081.html>

⁷ April Glaser and Will Oremus. "'A Collective Aghastness.'" *Slate*, June 28, 2018. <https://slate.com/technology/2018/06/the-tech-workers-coalition-explains-how-silicon-valley-employees-are-forcing-companies-to-stop-doing-business-with-trump.html>

2018

More than 3,100 Google employees signed a petition, demanding that the company end Project Maven — a Pentagon contract that would have seen Google develop artificial intelligence to improve drone targeting by analyzing video imagery.⁸ The petition followed many heated staff meetings and difficult debates internally and even prompted some Google employees to resign publicly as a form of protest.⁹ Following the petition, Google was hesitant to end the contract, and it took an additional two months of worker organizing before the company publicly announced that it would not renew Project Maven.

2019

In August 2019, **Mijente** released a report detailing the ways in which tech companies like Palantir and Amazon were profiting from ICE's growing digital infrastructure. As part of the #NoTechforICE campaign, college students, tech workers, and the public began petitioning companies to end their contracts with ICE. College students pledged to not work at companies with ICE contracts and organized an international day of action demanding Palantir cancel its contract with ICE.¹⁰ Tech workers protested their companies' contracts with ICE by publicly quitting or deleting code they had written.¹¹

**"College students
pledged to not
work at companies
with contracts
with ICE"**

2019

In September, over 1,500 Amazon employees walked out of work to protest the company's negative environmental impact. The walk out was historic, the largest corporate walkout in the tech sector in recent memory, following months of organizing internally at Amazon. In advance of the walk out, workers submitted shareholder proposals, organized petitions, and composed a letter demanding the company take greater action in response to climate change. Organizers were inspired by watching similar walkouts at other tech companies, pledging to push the company to reconcile its ethical stances with its actual environmental impacts.

⁸ Daisuke Wakabayashi and Scott Shane. "Google Will Not Renew Pentagon Contract That Upset Employees." *The New York Times*. June 1, 2018. <https://www.nytimes.com/2018/06/01/technology/google-pentagon-project-maven.html>

⁹ Scott Shane, Cade Metz, and Daisuke Wakabayashi. "How a Pentagon Contract Became an Identity Crisis for Google." *The New York Times*, May 30, 2018. <https://www.nytimes.com/2018/05/30/technology/google-project-maven-pentagon.html>

¹⁰ Ben Kessler and David Ingram. "Campus Activists Find a Target at the Intersection of Immigration and Technology: Palantir." *NBC News*. December 2, 2019. <https://www.nbcnews.com/tech/tech-news/campus-activists-find-target-intersection-immigration-technology-palantir-n1093136>.

¹¹ Klint Finley. "A Developer Deletes His Code to Protest Its Use by ICE." *Wired*. October 28, 2019.

// Insights from Tech Workers Today

Speaking with those in the industry today can be an invaluable way to prepare for a job in tech. Compiled here are insights from tech workers, academics, entrepreneurs, and former tech workers. Reflecting on their careers and the ethical questions with which they have wrestled, they shared a range of insights helpful to students hoping to create more human-focused tech. Responses below are based on each individual's experience, but collectively can provide further context for ethical tensions throughout the tech industry.

A former big tech worker who founded a nonprofit focused on tech ethics had a lot to share. Looking back on his post-grad recruiting experience, he wants to encourage students to look beyond corporate jobs. "All companies care about is maximizing profits," he shared. "If more technical students worked for nonprofits or in the public sector, civil society would be stronger and we'd have more of a counterbalance to corporations." He also wanted to share with students that the venture capital model incentivizes negative behavior and growth-at-all-costs behavior. Students should consider that for-profit business models that don't take VC funding may be healthier than VC-backed startups.¹² Similarly, in his experience, companies who are listed on public markets are typically more accountable than private companies. There are also a number of nonprofit or government actors researching AI and building products that are worth exploring as students begin their careers in tech.

**"All
companies
care
about is
maximizing
profits"**

These days, there's a lot of talk about the "ethical use of AI." One expert suggested that instead of thinking about ethics, workers and companies need to spend more time developing operational discipline and accountability systems when developing products and for product-use. This former tech worker who now works in academia recommends tech companies need to look beyond internal stakeholders and bring in independent, external parties to look critically at product operations and oversight. For example, if you are about to launch a product, what's the process in which that product launches? How do you test its relationship to existing unethical systems? How does identity link into the product you are building? Also, how we characterize identity given it is fluctuating and complex?

¹² Erin Griffith. "The Ugly Unethical Underside of Silicon Valley." Fortune. June 27, 2019. <https://fortune.com/longform/silicon-valley-startups-fraud-venture-capital/>

In addition to these questions, it is important to note that sometimes conversations around ethics can be limited in scope. Thus, encouraging companies to listen to a range of stakeholders can push companies to go beyond infusing work with ethical guidelines. It can place a focus on allowing individuals impacted by the technology to be involved in how tech is developed, launched, and utilized. Those who will be most impacted have the greatest stake in the technology and thus must be provided the space and power to push back. There may not be a perfect system to avoid ethical challenges, but involving multiple perspectives is a key way to ensure folks have the opportunity to address a problem as soon as they see it.

“Those who will be most impacted have the greatest stake in the technology and thus must be provided the space and power to push back”

“What protections are in place for workers who may have a different opinion from management about a new tool?”

Students applying to or starting jobs in large tech companies should educate themselves on governance inside the company. Are coworkers sharing information with one another, or is information being kept by one team alone? What’s the difference between the public and private rationale for sharing information? Is there information flow across the company outside of management? What are the internal mechanics for pursuing an idea? Does the internal bureaucracy work to support that or prevent tracking the flow of ideas? Can workers seek clarification from management and coworkers about the products the company is working on and how those products are being used? What protections are in place for workers who may have a different opinion from management about a new tool?

If these answers are difficult to track down, it’s possible to do your own information gathering across internal company resources. You can also ask management what safeguards, if any, are in place to make sure no harm is caused by the product you’re developing. It’s important to realize that the information you have access to inside the company is information that the general public might never see, so gathering information and sharing it with your coworkers can be crucial. Doing so can start a necessary dialogue among workers about some of the ethical challenges of developing a particular product. Only these types of conversations can help workers decide if and how the company should continue to be involved in the development of a product.

At startups, questions about ethical contracts are likely to have a more direct impact on the bottom line than at large companies. While you will have more direct access to decision makers to discuss concerns, smaller companies are more likely to be in a financial crunch and possibly resistant to making decisions for ethical reasons.

Business leaders also need to understand the long-term impacts of doing unethical work. Writing in *The New York Times*, Kevin Roose pointed to an example of how Dow Chemical's \$4 million research and development contract to help the military develop napalm during the Vietnam War cost the company many times that amount in long term brand reputation.¹³ Open dialogue and ethical choices early on can help companies avoid these pitfalls and their associated economic costs down the road.

Tech companies, despite their public stances to the contrary, are far from apolitical actors. Google, for example, sought to forbid political discussion¹⁴ at work until the National Labor Relations Board forced them to allow such discussions.¹⁵ Earlier this year, Wayfair staff walked out in protest of the company's contract to sell furniture to immigrant detention centers and, in response, its CEO, said he'd like staff that join the company to be "non-political."¹⁶

Additionally, algorithms and databases are inherently political. As policymakers continue to rely on AI to make decisions, the human biases coded into these new technologies have real world political ramifications. For example, an algorithm designed by Northpointe was used by parole authorities in the United States to predict a criminal defendant's likelihood of recidivism. The algorithm was incorrectly judging Black defendants as having a higher risk of recidivism than white defendants.¹⁷ Human biases that are programmed into the software deepened systemic discrimination.

"Google sought to forbid political discussion at work until the National Labor Relations Board prohibited it"

It's critical for students, and society at large, to identify and recognize the importance of transparency and oversight when developing and implementing AI technologies to ensure social harms are not compounded and legitimized under the guise of technological efficiency.

¹³ Kevin Roose. "Why Napalm Is a Cautionary Tale for Tech Giants Pursuing Military Contracts." *The New York Times*. March 4, 2014. <https://www.nytimes.com/2019/03/04/technology/technology-military-contracts.html>

¹⁴ Annie Palmer. "Google Bans Political Discussion on Internal Mailing Lists." *CNBC*. August 23, 2019. <https://www.cnbc.com/2019/08/23/google-bans-political-discussion-on-internal-mailing-lists.html>

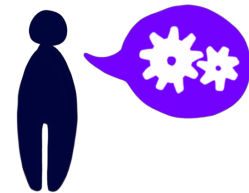
¹⁵ Annie Palmer. "Government Orders Google Not to Restrict Employees' Free Speech." *CNBC*. September 12, 2019. <https://www.cnbc.com/2019/09/12/nlrb-orders-google-to-allow-employees-to-discuss-politics-at-work.html>

¹⁶ Lucia Maffei. "Wayfair CEO Says He'd like Prospective Employees to Be 'Non-Political'" *Boston Business Journal*. September 19, 2019. <https://www.bizjournals.com/boston/news/2019/09/19/wayfair-ceo-says-hed-like-prospective-employees-to.html>

¹⁷ Jeff Larson, Julia Angwin, Lauren Kirchner, and Surya Mattu. "How We Analyzed the COMPAS Recidivism Algorithm." *ProPublica*. March 9, 2019. <https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm>

// Addressing Ethical Issues as a Tech Worker

After reflecting on the timeline of tech worker organizing and the insights provided by current tech workers, you've probably been able to identify key takeaways for the steps you can take as a tech worker to positively shape the future of the tech industry. Here are just a few suggestions to help you on your path:



Be Proactive

Workers can proactively address ethical issues before they ever come to fruition. First, develop a strong ethical framework. Incorporate multiple perspectives and develop accountability systems so that folks are given continuous opportunities to reflect on and discuss their work and flag potential issues. Additionally, consider all the ways in which a new tool could be abused. Are there safety measures that can be put in place? By thinking through the worst possible outcomes, tech workers can make the decisions necessary to protect the public from the negative impacts of misguided or abused technological tools.



Build Relationships

Building strong relationships is an essential organizing ingredient, especially when tackling ethical challenges. If you feel something is not right, other people in your company probably feel similarly. But, without strong relationships, folks may not trust that it is safe to speak out. Additionally, when planning actions, sending around petitions, or meeting with management, workers must trust that they have each other's backs in these often intimidating situations.



Talk Across Teams

The tech industry often perpetuates the mythology of the lone individual who has a breakthrough idea that changes the world. Yet the reality is that within tech, folks work in teams where each member is deeply reliant on each other. While this can be a fun, collaborative opportunity, it can be complicated to step forward with an ethical concern.

No one wants to disrupt the team or be seen as the black sheep. So, talking across teams can help workers discuss their concerns before bringing them up with the people they work with most closely. "Ethics lunches" can be a low-stakes way for folks to come together across teams and discuss the possible ethical ramifications for their individual projects. This dialogue is necessary to identify if a project is producing unethical outcomes, and if other workers feel emboldened to mobilize and demand change.



Work with Impacted Communities

Involving diverse communities in user testing can help companies proactively understand how their tool would impact the community. When attempting to draw attention to ethical concerns, it is important to identify and center the communities negatively impacted by the unethical practice. Tech spends a lot of time wowing us with what works. Not enough time is spent discovering who tech doesn't work for. Frontline communities who experience the negative impacts of unethical tech practices are already organizing against those technologies. By supporting those movements and providing technical insights, tech workers can support and build power for the movement work already being led by those most impacted.



Learn Organizing Strategies

There are so many organizing tools available to tech workers. From petitions, protests, media pieces, coalition building, there are a multitude of tools that organizers can use to draw attention to unethical practices and encourage their company to be accountable to the impact of their policies. By learning what tools are available and how they can be employed for change, future tech workers can be better prepared to demand positive change and ensure safer tech for all.



// Resources

Interested in learning more?
Check out these organizations
and connect with tech workers and
communities invested in change!

[AI Now Institute](#)

[Media Mobilizing Project](#)

[Center for Media Justice](#)

[Community Justice Exchange](#)

[Fight for the Future](#)

[Silicon Valley De-Bug](#)

[Tech Workers Coalition](#)

[Erase the Database](#)

