

THE IMPACT OF PROPTech AND THE DATAFICATION OF REAL ESTATE ON THE HUMAN RIGHT TO HOUSING

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Abstract

Proptech is undermining the human right to housing. Proptech is a term of art for the digital transformation of the real estate industry. It includes a range of real estate businesses engaged in development, financing, construction, management, and more. Proptech's boosters promise frictionless and efficient housing markets. However, Proptech appears to be reinforcing existing power imbalances in real estate markets that are masked by the supposed objectivity and opacity of computer-generated processes. Meanwhile, countries across the globe face a profound housing crisis, with a lack of affordable and safe housing, high rates of homelessness, and rampant housing discrimination and segregation. Proptech's impact may violate the human right to housing, which recognizes housing as the basis of stability and security for individuals and families. This Article examines five forms of Proptech through a human rights lens: (1) tenant screening algorithms; (2) digital mortgage financing; (3) online, platform-based advertising for real estate; (4) home surveillance technology, including facial recognition technology; and (5) short-term rental platforms. For each form of Proptech, the Article describes how the human right to housing is violated and explains the legal framework in the United States that governs these technologies. The Article also highlights human rights advocacy attempting to hold Proptech accountable. This advocacy includes repositioning big data as a counterweight to the dynamics of data capitalism and housing financialization, leveraging it instead to expand housing opportunities.

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INTRODUCTION

The world is facing a global housing crisis. In 2020, the United Nations Special Rapporteur on Housing reported that 1.8 billion people worldwide lack adequate housing, while 150 million people are homeless.¹ The crisis extends to wealthy nations, despite their resources. For instance, in the United States, the rising costs of housing are outstripping income growth and, as a result, millions of residents, particularly low-income people, are rent-burdened.² Seventy percent of extremely low-income American renters spend more than half of their incomes on rent—and often much more—leaving little income left over to meet basic needs.³ Meanwhile, government-subsidized housing fails to meet demand and has been decreasing over time.⁴ Only one-quarter of eligible low-income households receive government-subsidized housing support. Homelessness is estimated to afflict over 580,000 people.⁵ Housing segregation and discrimination on the basis of race, ethnicity, and socio-economic status remain a stubborn reality in the U.S. and

¹ Leilani Farha (Special Rapporteur on Adequate Housing as a Component of the Right to an Adequate Standard of Living, and on the Right to Non-Discrimination in this Context), *Guidelines for the Implementation of the Right to Adequate Housing*, ¶ 2, U.N. Doc. A/HRC/43/43 (Dec. 26, 2019), <https://docs.un.org/en/A/HRC/43/43> [<https://perma.cc/29CD-86NP>].

² See ANDREW AURAND, DAN EMMANUEL, DANIEL THREET, IKRA RAFI & DIANE YENTEL, NAT'L LOW-INCOME HOUS. COAL., THE GAP: A SHORTAGE OF AFFORDABLE HOMES 2 (2021), https://reports.nlihc.org/sites/default/files/gap/Gap-Report_2021.pdf [<https://perma.cc/JL68-BJ42>] (noting in the U.S., 70% of extremely low-income renters, defined as having income at or below the Poverty Guideline and which account for 25% of all renter households, spend more than half their income on rent and utilities); cf. OECD, HC1.2. HOUSING COSTS OVER INCOME 4 (2024), https://webfs.oecd.org/Els-com/Affordable_Housing_Database/HC1-2-Housing-costs-over-income.pdf [<https://perma.cc/49X2-K4LY>] (noting in the EU, the poorest tenant households shoulder median housing costs between 20 to 40% of disposable income).

³ AURAND, EMMANUEL, THREET, RAFI & YENTEL, *supra* note 2, at 2.

⁴ Cf. HOUS. EUR., THE STATE OF HOUSING IN EUROPE 2021 20 (2021), https://www.housingeurope.eu/wp_content/uploads/2024/11/The_State_of_Housing_in_the_EU_2021_digital.pdf [<https://perma.cc/CZX3-MHCD>].

⁵ U.S. DEP'T OF HOUS. & URB. DEV., THE 2020 ANNUAL HOMELESS ASSESSMENT REPORT (AHAR) TO CONGRESS: PART 1: POINT-IN-TIME ESTIMATES OF HOMELESSNESS 6 (2021), <https://www.huduser.gov/portal/sites/default/files/pdf/2020-ahar-part-1.pdf> [<https://perma.cc/RUT3-G2NU>] (measuring homelessness on a single night).

across the globe; segregated communities suffer from poor levels of health, education, and job opportunity, with high rates of crime and poverty.⁶ Clearly, nations are not fulfilling the human right to adequate housing, which guarantees a “right to live somewhere in security, peace and dignity.”⁷ Does technology hold promise for advancing the human right to housing?

On the one hand, emerging technologies in the PropTech industry can make it cheaper to build new homes, expand access to capital, improve risk prediction models for lending, and help people search online for available housing.⁸ On the other hand, PropTech risks cementing the “large-scale financialization of housing and land and unsustainable housing systems that treat housing as a commodity,”⁹ a key trend fueling the global housing crisis.

⁶ Balakrishnan Rajagopal (Special Rapporteur on the Right to Adequate Housing), *Spatial Segregation and the Right to Adequate Housing*, U.N. Doc. A/HRC/43/43 (Mar. 4, 2022), <https://www.ohchr.org/sites/default/files/2022-04/Segregation-in-the-right-to-adequate-housing-User-Friendly.pdf> [https://perma.cc/5LRJ-QKSQ]. In the U.S., housing segregation falls along racial lines, while in the EU it is related to recent immigration and is growing along socio-economic lines. See JOHN ICELAND, TRANSATLANTIC COUNCIL ON MIGRATION, RESIDENTIAL SEGREGATION: A TRANSATLANTIC ANALYSIS 2–3 (2014), https://www.migrationpolicy.org/sites/default/files/publications/TCM_Cities_Residential-SegregationFINALWEB.pdf [https://perma.cc/4C3S-7GDV]; Sako Musterd, Szymon Marcińczak, Maarten van Ham & Tiit Tammaru, *Socioeconomic Segregation in European Capital Cities: Increasing Separation Between Poor and Rich*, 38 URB. GEO. 1062, 1076–77 (2017), <https://doi.org/10.1080/02723638.2016.1228371>.

⁷ U.N. Off. of the High Comm’r for Human Rts., *The Human Right to Adequate Housing: Fact Sheet No. 21/Rev. 1*, U.N. Doc. E/1992/23 (Nov. 2009), https://unhabitat.org/sites/default/files/documents/2019-05/fact_sheet_21_adequate_housing_final_2010.pdf [https://perma.cc/9BUK-TW4R] [hereinafter U.N. Fact Sheet].

⁸ See Sarita Williams & Sheryl Pardo, *Four Ways Technology is Addressing the Housing Affordability Crisis*, URB. INST. (Nov. 14, 2019), <https://www.urban.org/urban-wire/four-ways-technology-addressing-housing-affordability-crisis> [https://perma.cc/9JHY-CTX7]. *Contra* Emily Badger, *Why Technology Hasn’t Fixed the Housing Crisis*, N.Y. TIMES (Jan. 29, 2019), <https://www.nytimes.com/2019/01/29/upshot/can-technology-help-fix-the-housing-market.html> [https://perma.cc/ZHK8-99AC] (arguing that technology cannot remove cost barriers to affordable housing).

⁹ Farha, *supra* note 1, at 1.

PropTech is an umbrella term of art for the digital transformation of the real estate industry.¹⁰ PropTech brings digital tools to the real estate industry, adding scope, speed, and scale to tasks previously accomplished in more localized, analog, and less interconnected ways.¹¹ While there is not a single definition of PropTech, the term generally refers to the optimization of “the traditional value chains of real estate . . . to obtain more efficiency and effectiveness.”¹² It involves a range of hardware and software tools, including artificial intelligence, internet connected devices, user dashboards, sensors, virtual reality, cloud computing, and data aggregators.¹³ PropTech businesses include those engaged in real estate development, management, sales and transactions, financial services, construction, and facilities management.¹⁴

PropTech boosters highlight its innovation and efficiency, promising “frictionless” modes of conducting business for property developers and owners. Data is key to PropTech. “At every step of the PropTech pipeline, data are either generated or processed to create value for users or owners of real estate.”¹⁵ PropTech is thus entwined with surveillance capitalism, in which individuals’ data is monetized for corporate profit,¹⁶ typically without transparency

¹⁰ See Nikolai Siniak, Tom Kauko, Sergey Shavrov & Ninoslav Marina, *The Impact of PropTech on Real Estate Industry Growth*, 869 IOP CONF. SERIES: MATERIALS SCI. & ENG’G (2020), at 2–5, <https://doi.org/10.1088/1757-899X/869/6/062041>.

¹¹ See generally Desiree Fields & Dallas Rogers, *Towards a Critical Housing Studies Research Agenda on Platform Real Estate*, 38 HOUS. THEORY & SOC’Y 72 (2021), <https://doi.org/10.1080/14036096.2019.1670724>.

¹² Chiara Tagliaro, Stefano Bellintani & Gianandrea Ciaramella, *R.E. Property Meets Technology: Cross-Country Comparison and General Framework*, 39 J. PROP. INV. & FIN. 125, 127 (2021), <https://doi.org/10.1108/JPIF-09-2019-0126> (citation omitted).

¹³ See Erin McElroy, *Disruption at the Doorstep*, URB. OMNIBUS (Nov. 6, 2019) <https://urbanomnibus.net/2019/11/disruption-at-the-doorstep> [<https://perma.cc/5PRJ-VUDA>]; SAID BUS. SCH., UNIV. OF OXFORD, PROPTECH 2020: THE FUTURE OF REAL ESTATE 27–39 (2020), <https://www.sbs.ox.ac.uk/sites/default/files/2020-02/proptech2020.pdf> [<https://perma.cc/8XGY-5ZR5>] [hereinafter OXFORD].

¹⁴ Tagliaro, Bellintani & Ciaramella, *supra* note 12, at 127; OXFORD, *supra* note 13, at 5–6.

¹⁵ Fabian Braesemann & Andrew Baum, *PropTech: Turning Real Estate into a Data-Driven Market? 2* (Oxford Future of Real Est. Initiative, Working Paper Vers. 1.3, 2020), <http://dx.doi.org/10.2139/ssrn.3607238>; see also Fields & Rogers, *supra* note 11.

¹⁶ See SHOSHANA ZUBOFF, THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER 1

about its usage or methodologies and without legal or political accountability for fully or partially automated decision-making outcomes. In addition, algorithmic systems are often infected with bias against minority groups, in part due to historic patterns of discrimination that are embedded in the data that feeds algorithmic outcomes.¹⁷ Thus, Proptech raises troubling concerns for low-income and minority renters and homeowners, who face displacement, rising housing costs, discrimination, and homelessness as a result of certain Proptech systems.¹⁸ Proptech appears to reinforce existing power imbalances in real estate markets that are masked by the supposed objectivity and opacity of computer-generated processes. It is magnifying existing disparities and discrimination in housing.

This Article surveys several Proptech tools that potentially impinge on the human right to housing for renters and homeowners, particularly those from low-income and minority groups. It begins by explaining the contours of the human right to housing. It then examines the following forms of Proptech: (1) tenant screening algorithms; (2) digital mortgage financing; (3) online, platform-based advertising for real estate; (4) home surveillance technology, including facial recognition technology; and (5) short-term rental platforms.¹⁹ For each form of Proptech, the Article describes how the

(2019) (providing the definition of “Surveillance Capitalism” in a preface to the book). *See also* Fields & Rogers, *supra* note 11.

¹⁷ *See* NICOL TURNER LEE, PAUL RESNICK & GENIE BARTON, THE BROOKINGS INST., ALGORITHMIC BIAS DETECTION AND MITIGATION: BEST PRACTICES AND POLICIES TO REDUCE CONSUMER HARMS (2019), <https://www.brookings.edu/research/algorithmic-bias-detection-and-mitigation-best-practices-and-policies-to-reduce-consumer-harms> [<https://perma.cc/SRM3-QRYYY>].

¹⁸ McElroy, *supra* note 13.

¹⁹ There are many other Proptech tools that pose a risk to the human right to housing. *See, e.g.*, LANDLORD TECH WATCH, ANTI-EVICTION MAPPING PROJECT, <https://antievictionmappingproject.github.io/landlordtech> [<https://perma.cc/3BDP-B52E>] (describing an array of surveillance and speculation technologies that impact tenant housing); Desiree Fields, *Automated Landlord: Digital Landlords and Post-Crisis Financial Accumulation*, 54 ENV. & PLAN. A: ECON. & SPACE 160, 162, 169–74 (2022), <https://doi.org/10.1177/0308518X19846514> (describing automated landlord functions that allow institutional investors to purchase single family homes so they can rent them); Nadiyah J. Humber, *Corporate-tech Landlordism: The New Era*, STAN. TECH. L. REV. (forthcoming 2025) (manuscript at 13, 21–26), <http://dx.doi.org/10.2139/ssrn.4942614> (describing “corporate-tech landlordism” as the process by which corporate landlords use Proptech to acquire and rent single-family homes); Heather

human right to housing is violated and explains the legal framework in the U.S. governing these technologies. The Article focuses primarily on the U.S., which leads the world in PropTech investments and influences global technology development as the home of a majority of the world's Big Tech companies.²⁰ Nevertheless, PropTech has global reach. There are PropTech start-ups, often funded by U.S. capital, all over the world.²¹ Thus, the U.S. experience is applicable beyond its borders, especially to other high-income countries.²² Although PropTech can adversely impact the human right to housing, the Article also highlights ways in which civil rights and human rights advocates are pushing to hold real estate entities accountable through various acts of resistance, from protests to litigation to using big data analytics to expand housing opportunities and to serve as a counterweight against the dynamics of data capitalism and housing financialization.

I. THE HUMAN RIGHT TO ADEQUATE HOUSING

Housing is a core human right. Housing not only protects people from the elements and external threats, but, as Jessie Hohmann states, the right also “is based on an appreciation of the importance of housing to privacy, autonomy and freedom; its function in facilitating participation and inclusion in society; and its role in providing the material goods that make all of these things meaningful and possible.”²³ The human right to adequate housing is protected in multiple international instruments. It was first set forth in the Universal Declaration of Human Rights in 1948: “[e]veryone has the right to a standard of living adequate for the health and well-being of himself and his family, including food, clothing, housing and medical care and necessary social services...”²⁴

Vogell, *Justice Department Sues Six of the Nation's Largest Landlords in Effort to Stop Alleged Price-Fixing in Rental Markets*, PROPUBLICA (Jan. 9, 2025), <https://www.propublica.org/article/justice-department-sues-landlords-alleged-price-fixing-realpage-rent> [https://perma.cc/A3D8-FJU3] (describing a Department of Justice lawsuit against a property management software-maker for engaging in illegal price-fixing to reduce competition among landlords in order to increase profits).

²⁰ Tagliaro, Bellintani & Ciaramella, *supra* note 12, at 126; OXFORD, *supra* note 13, at 21.

²¹ One study found more than 3,200 companies active in the PropTech sector in Europe. Tagliaro, Bellintani & Ciaramella, *supra* note 12, at 128.

²² See Braesemann & Baum, *supra* note 15, at 2, 10, 13.

²³ Jessie Hohmann, *The Right to Housing*, in A RESEARCH AGENDA ON HOUSING 15, 15 (Markus Moos ed., 2019).

²⁴ G.A. Res. 217 (III) A, Universal Declaration of Human Rights art. 25 ¶ 1 (Dec. 10, 1948).

The human right to housing was further reinforced in 1976 in the International Covenant on Economic, Social and Cultural Rights (ICESCR), which obligates its signatory nations to take “appropriate steps” to ensure the realization of the right to housing.²⁵ The Committee on Economic, Social and Cultural Rights, charged with interpreting the ICESCR, clarified that the right involves more than “a roof over one’s head”; indeed, it more broadly encompasses “the right to live somewhere in security, peace, and dignity.”²⁶ The committee articulated seven core components of the right to housing:

1. legal security of tenure (protection against forced evictions and harassment),
2. availability (access to safe drinking water, adequate sanitation, and energy),
3. affordability (housing costs that do not threaten occupants’ enjoyment of other human rights),
4. habitability (guarantee of physical safety, adequate space, and protection against the elements),
5. accessibility (meeting the specific needs of disadvantaged and marginalized groups),
6. location (accessible to employment, health care, education, and not polluted or dangerous), and
7. cultural adequacy (respecting the expression of cultural identity).²⁷

Other international instruments bar “arbitrary or unlawful interference” with housing²⁸ and protect the rights of certain groups, such as children²⁹ and women,³⁰ with regard to housing. In addition,

²⁵ International Covenant on Economic, Social and Cultural Rights art. 11, ¶ 1, *opened for signature* Dec. 16, 1966, 999 U.N.T.S. 3 (signed by the U.S. Oct. 5, 1977).

²⁶ U.N. Comm. on Econ., Soc. and Cultural Rts. [CESCR], *General Comment No. 4: The Right to Adequate Housing* ¶ 7, U.N. Doc. E/1992/23 (Dec. 13, 1991).

²⁷ *Id.* at ¶ 8.

²⁸ International Covenant on Civil and Political Rights art. 17, ¶ 1, *opened for signature* Dec. 19, 1966, T.I.A.S. No. 92-908, 999 U.N.T.S. 171 (entered into force in the U.S. Sept. 8, 1992).

²⁹ Convention on the Rights of the Child art. 27, ¶ 3, *opened for signature* Nov. 20, 1989, 1577 U.N.T.S. 3 (signed by the U.S. Feb. 16, 1995).

³⁰ Convention on the Elimination of All Forms of Discrimination Against Women art. 14, ¶ 2(h), *opened for signature* Dec. 18, 1979, 1249 U.N.T.S. 13 (obliging state parties to eliminate discrimination against women in rural areas to ensure that such women enjoy adequate living conditions, particularly in relation to housing).

international human rights laws guarantee nondiscrimination in housing on the grounds of race, color, national or ethnic origin, disability, and other identities.³¹ Further, the UN Special Rapporteur on the right to adequate housing has recognized that poverty and economic marginalization can lead to discrimination and housing segregation.³²

Under international human rights law, “every right creates a corresponding duty on the part of the government to respect, protect, and fulfill the right.”³³ Still, states have no affirmative obligation to provide free housing for all who need it.³⁴ Rather, they have an immediate obligation, within their available resources, to progressively “realize the right to adequate housing and ... take steps in that direction without delay.”³⁵ Those steps can include legislation and judicial remedies that give “due priority” to marginalized groups such that policies do not “benefit already advantaged social groups at the expense of others.”³⁶ States have the discretion to fulfill their obligations by using “whatever mix of public and private sector measures [are] considered appropriate.”³⁷ The obligation on states is “to demonstrate that, in aggregate, the measures being taken are sufficient to realize the right for every individual in the shortest possible time in accordance with the maximum of available resources.”³⁸ And, regardless of their resources, states must immediately guarantee “the right to adequate housing in an equal and non-discriminatory manner, to develop specific legislation and plans of action, to prevent forced evictions [and] to guarantee a certain degree of security of tenure to all.”³⁹

In the U.S., the human right to housing is more aspirational than legally binding. Although the U.S. signed the UDHR, the document is non-binding on member states. The U.S. also signed the ICESCR (1966); however, the treaty is not legally enforceable in the U.S.

³¹ International Convention on the Elimination of All Forms of Racial Discrimination art. 5(e)(iii), *opened for signature* Mar. 7, 1966, T.I.A.S. No. 94-1120, 660 U.N.T.S. 195 (entered into force in the U.S. Nov. 20, 1994).

³² U.N. Fact Sheet, *supra* note 7, at 10.

³³ Eric Tars, *Housing as a Human Right*, in *ADVOCATES’ GUIDE ’21*, at 1-12, 1-13 (Nat’l Low Income Hous. Coal ed., 2021), https://nlihc.org/sites/default/files/AG-2021/2021_Advocates-Guide.pdf [<https://perma.cc/WZ4Z-UYM6>].

³⁴ U.N. Fact Sheet, *supra* note 7, at 6.

³⁵ *Id.* at 7.

³⁶ CDESCR, *supra* note 26, at ¶ 11.

³⁷ *Id.* at ¶ 14.

³⁸ *Id.*

³⁹ U.N. Fact sheet, *supra* note 7, at 7.

because the U.S. has not ratified it.⁴⁰ By contrast, the U.S. is bound by international protections against discrimination in housing. At the national level, the U.S. Constitution does not provide a right to housing. As part of the New Deal in the 1930s, Congress established federal housing programs with the objective of a “decent home and a suitable living environment for every American family,” but funding has never met the need, and there are no enforcement mechanisms to ensure this aspirational goal.⁴¹ The Fair Housing Act, enacted in 1968, prohibits discrimination in housing on the basis of race, color, national origin, religion, sex, familial status, and disability.⁴² The Act also requires the Department of Housing and Urban Development (HUD) and any recipients of federal funding, such as local communities, to take affirmative steps to remedy fair housing deprivations, including racially segregated neighborhoods and unequal access to housing opportunities.⁴³ For decades, this “affirmatively furthering fair housing” requirement has been ignored by local jurisdictions and underenforced by HUD.⁴⁴

Despite—or perhaps because of—the lack of substantive rights to housing in the U.S., advocates are using a human rights framework to advance fair housing goals. Human rights norms encompass social and economic rights, which tend to fall outside the American emphasis on civil and political rights.⁴⁵ As a result, “human rights law can help conceptualize and articulate in legal terms the assaults on human rights, dignity, and social inclusion that constituents who are affected experience; human rights law also can help give legal

⁴⁰ International Covenant on Economic, Social and Cultural Rights, *opened for signature* Dec. 16, 1966, 993 U.N.T.S. 3 (entered into force Jan. 3, 1976). The U.S. is also a non-signatory to the treaties protecting the rights of children and women, which include housing protections. By contrast, the U.S. signed and ratified the Convention on the Elimination of All Forms of Racial Discrimination in 1994 and the International Covenant for Civil and Political Rights in 1992, with its ban on “arbitrary or unlawful interference” with a person’s home.

⁴¹ See Maria Foscarinis, *Advocating for the Human Right to Housing: Notes from the United States*, 30 N.Y.U. REV. L. & SOC. CHANGE 447, 465–66 (2006) (quoting Housing Act of 1949, 42 U.S.C. § 1441 (2000)).

⁴² 42 U.S.C. § 3604(b).

⁴³ 42 U.S.C. § 3608(e)(5) (the HUD Secretary must “administer the programs and activities relating to housing and urban development in a manner affirmatively to further” the policies of the FHA).

⁴⁴ Heather R. Abraham, *Fair Housing’s Third Act: American Tragedy or Triumph?*, 39 YALE L. & POL’Y REV. 1, 23–24 (2020). The second Trump Administration repealed a regulation designed to effectuate the “affirmatively furthering fair housing” requirement. Dept. of Housing & Urb. Dev., *Affirmatively Furthering Fair Housing Revisions*, 90 Fed. Reg. 11020 (Mar. 3, 2025).

⁴⁵ See Foscarinis, *supra* note 41, at 447.

content to emerging advocacy goals.”⁴⁶ Housing advocates in the U.S. have strategized ways to frame domestic housing issues in the context of human rights.⁴⁷ This rhetorical framing can be educational for policymakers, the media, and citizens, as well as empowering for advocates and communities. Maria Foscarinis explains, “[a]t a time when many low-income Americans are subjected regularly to suspicion, humiliation, and deprivation, human rights law recognizes them as having rights simply because they are human.”⁴⁸ In light of this advocacy, several lawmakers at the federal and state levels have introduced legislation to recognize housing as a human right; U.S. federal government agencies have, at times, adopted human rights language against the criminalization of homelessness; and during the pandemic, Congress, certain states, and the Centers for Disease Control recognized the connection between housing stability and public health by issuing temporary moratoriums on evictions.⁴⁹ As this Article makes clear, human rights-based advocacy will need to continue, if not accelerate, across the globe as Proptech both destabilizes housing markets and concentrates them in the hands of corporate investors.

II. PROPTECH AND MARGINALIZED COMMUNITIES

This Section analyzes five Proptech uses in the U.S. that have adverse consequences on low-income people and minorities. It situates each form of Proptech within the governing legal context, highlighting legal limitations on remedies as well as innovative advocacy strategies. In each form discussed, Proptech lacks transparency, leaving people unaware that they are subject to algorithmic processing and without an explanation for its outcomes. Accountability is limited because the law has not kept up with these new forms of digital discrimination. As a result, many Proptech

⁴⁶ Maria Foscarinis, Brad Paul, Bruce Porter & Andrew Scherer, *The Human Right to Housing: Making the Case in U.S. Advocacy*, 38 CLEARINGHOUSE REV. 97, 97 (2004).

⁴⁷ Foscarinis, *supra* note 41, at 451.

⁴⁸ *Id.* at 474.

⁴⁹ Tars, *supra* note 33, at 1. For an overview of the various moratoria, see Emily Benfer Robert Koehler, Alyx Mark, Valerie Nazzaro, Anne Kat Alexander, Peter Hepburn, Danya E. Keene & Matthew Desmond, *COVID-19 Housing Policy: State and Federal Eviction Moratoria and Supportive Measures in the United States During the Pandemic*, 33 HOUS. POL’Y DEBATE 1390, 1391 (2023). A group of realtor and landlord associations challenged the CDC’s extension of the moratorium beyond the deadline set by Congress, and in 2021, the Supreme Court ruled the CDC had exceeded its authority. *See generally* Ala. Ass’n of Realtors v. HHS, 141 S. Ct. 2485 (2021) (per curiam).

systems have unfair outcomes, which impinge on the human right to housing and guarantees of nondiscrimination.

A. TENANT SCREENING

Renters likely encounter PropTech when seeking housing, although they are typically not aware that a prospective landlord is buying a digital dossier purporting to assess their tenant-worthiness. In selecting tenants, nine out of ten landlords purchase tenant screening reports from over 2,000 companies that algorithmically score potential tenants across a variety of attributes, such as residential history, civil and criminal case history, credit history, and ill-defined “life-style” criteria, such as marital history and pet ownership.⁵⁰ These companies obtain their data from sources such as data brokers, public records, and data scraped from websites.⁵¹ The reports typically award an applicant a tenant-worthiness score, similar to a credit score, or provide a landlord with a thumbs-up/thumbs-down recommendation.⁵²

This barebones reporting lacks context. For instance, in including eviction court records, the reports do not necessarily show if the tenant won the case, if the tenant raised meritorious defenses, or if the case was dismissed.⁵³ Because tenant screening reports rarely explain the underlying factors leading to a certain score, landlords can disclaim responsibility for a report’s errors or biases.

⁵⁰ Lauren Kirchner & Matthew Goldstein, *Access Denied: Faulty Automated Background Checks Freeze Out Renters*, THE MARKUP (May 28, 2020) <https://themarkup.org/locked-out/2020/05/28/access-denied-faulty-automated-background-checks-freeze-out-renters> [<https://perma.cc/D3L5-KYV5>]; Shivangi Bhatia, *To “Otherwise Make Unavailable”: Tenant Screening Companies’ Liability Under the Fair Housing Act’s Disparate Impact Theory*, 88 FORDHAM L. REV. 2551, 2553, 2560 (2020).

⁵¹ See ARIEL NELSON, NAT’L CONSUMER L. CTR., *BROKEN RECORDS REDUX: HOW ERRORS BY CRIMINAL BACKGROUND CHECK COMPANIES CONTINUE TO HARM CONSUMERS SEEKING JOBS AND HOUSING* 3 (2019), <https://www.nclc.org/images/pdf/criminal-justice/report-broken-records-redux.pdf> [<https://perma.cc/XNA7-X76D>].

⁵² See Kaveh Waddell, *How Tenant Screening Reports Make it Hard for People to Bounce Back from Tough Times*, CONSUMER REPS. (Mar. 11, 2021) <https://www.consumerreports.org/algorithmic-bias/tenant-screening-reports-make-it-hard-to-bounce-back-from-tough-times/> [<https://perma.cc/VAM8-SX6D>]; Matthew Harold Leiwant, *Locked Out: How Algorithmic Tenant Screening Exacerbates the Eviction Crisis in the United States*, 6 GEO. L. TECH. REV. 276, 281–82 (2022).

⁵³ See Kathryn A. Sabeth, *Erasing the “Scarlet E” of Eviction Records*, THE APPEAL, (Apr. 12, 2021), <https://theappeal.org/the-lab/report/erasing-the-scarlet-e-of-eviction-records/> [<https://perma.cc/DN48-QJT5>].

Moreover, these reports often include inaccurate and misleading information, such as cross-matched data regarding people with similar names.⁵⁴

The industry-wide sloppiness in reporting and the degree to which it is tolerated has a disproportionate impact on marginalized people. In an investigation of the \$2 billion tenant screening industry, The Markup wrote about a woman named Samantha Johnson, whose tenant screening report included criminal court records from five other women with the same name, even where the women had different middle names, races, and dates of birth.⁵⁵ Ms. Johnson's report erroneously listed multiple convictions attached to these other women, including selling drugs, burglary, theft, domestic assault, disorderly conduct, and lying to a police officer.⁵⁶ None of the charges had anything to do with Ms. Johnson, but she was nevertheless repeatedly turned down for housing by landlords who relied upon the erroneous information. This is not an isolated occurrence; other lawsuits make similar claims.⁵⁷ Further, common names are particularly prevalent among minorities; indeed, the U.S. Census found that a quarter of Latinx people share only twenty-six surnames.⁵⁸ Despite such widespread inaccuracies, many landlords rely on tenant screening reports without question.⁵⁹

Even if tenant screening reports contained more accurate data, they would still have discriminatory outcomes for historically disadvantaged groups.⁶⁰ Tenant screening algorithms factor in prior

⁵⁴ See Kirchner & Goldstein, *supra* note 50.

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ See Cyrus Farivar, *Tenant Screening Software Faces National Reckoning*, NBC NEWS (Mar. 14, 2021) <https://www.nbcnews.com/tech/tech-news/tenant-screening-software-faces-national-reckoning-n1260975> [<https://perma.cc/B945-83BU>].

⁵⁸ See Kirchner & Goldstein, *supra* note 50.

⁵⁹ See Wonyoung So, *Which Information Matters? Measuring Landlord Assessment of Tenant Screening Reports*, 33 HOUS. POL'Y DEBATE 1484, 1502 (2022), <https://doi.org/10.1080/10511482.2022.2113815> (finding that landlords rely on automated system's judgment); Erin Smith & Heather Vogell, *How Your Shadow Credit Score Could Decide Whether You Get an Apartment*, PROPUBLICA (Mar. 29, 2022) <https://www.propublica.org/article/how-your-shadow-credit-score-could-decide-whether-you-get-an-apartment> [<https://perma.cc/4C2C-S43B>] (noting tenant screening reports are less regulated and offer fewer consumer protections compared to credit reporting).

⁶⁰ See Nadiyah J. Humber, *A Home for Digital Equity: Algorithmic Redlining and Property Technology*, 111 CALIF. L. REV. 1421, 1440–42 (2023); Leiwant, *supra* note 52, at 7–10.

eviction filings, which live forever in digital reports.⁶¹ Approximately 2.3 million low-income renters in America are evicted every year, largely due to nonpayment of rent,⁶² which in turn reflects rising rents and stagnant wages.⁶³ Sociologist Matthew Desmond explains that “[e]viction is a cause, not just a condition, of poverty.”⁶⁴ Tenant screening reports operate as tenant blacklists, constraining where, and whether, people are housed, with the harshest effects on low-income women of color.⁶⁵ Black and Latinx people are twice as likely as white households to be renters.⁶⁶ They are also more likely to be evicted because they are more rent burdened and have higher levels of income volatility than white households along with fewer resources to weather unexpected events.⁶⁷ Studies show discrimination on the part of landlords and property owners, who have higher thresholds for filing eviction cases against white renters.⁶⁸ The disparate impacts on the basis of gender likely result from two factors: nonwhite women are more likely to be the leaseholders for their families—due to high rates of unemployment and incarceration among minority males—and children are a risk factor of eviction.⁶⁹ These demographic patterns

⁶¹ Sabbeth, *supra* note 53.

⁶² David Brancaccio & Katie Long, *Millions of Americans are Evicted Every Year – and Not Just in Big Cities*, MARKETPLACE (Apr. 9, 2018), <https://www.marketplace.org/2018/04/09/eviction-desmond-princeton-housing-crisis-rent/> [<https://perma.cc/CW6M-J4UP>] (noting that the about one million evictions impact 2.3 million people, many of which are children); THE EVICTION LAB, NATIONAL ESTIMATES: EVICTION IN AMERICA (2018), <https://evictionlab.org/national-estimates/> [<https://perma.cc/B2C4-5ZRB>].

⁶³ Pamela Foohey & Sara S. Greene, *Credit Scoring Duality*, 85 L. & CONTEMP. PROBS. 101, 117 (2022).

⁶⁴ MATTHEW DESMOND, EVICTED: POVERTY AND PROFIT IN THE AMERICAN CITY 299 (2016).

⁶⁵ *Id.* at 297, 299.

⁶⁶ Anthony Cilluffo, *More U.S. Households Are Renting Than at Any Point in 50 Years*, PEW RSCH. CTR. (Jul. 19, 2017), <https://www.pewresearch.org/fact-tank/2017/07/19/more-u-s-households-are-renting-than-at-any-point-in-50-years/> [<https://perma.cc/VJ7L-Y444>]; JOINT CTR. FOR HOUS. STUD. OF HARV. UNIV., THE STATE OF THE NATION’S HOUSING 2020 29 (2020), https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_The_State_of_the_Nations_Housing_2020_Report_Revised_120720.pdf [<https://perma.cc/6L49-9ENM>].

⁶⁷ Peter Hepburn, Renee Louis & Matthew Desmond, *Racial and Gender Disparities Among Evicted Americans*, 7 SOCIO. SCI. 649, 657–58 (2020).

⁶⁸ *Id.* at 659.

⁶⁹ *Id.*

replicate themselves, as each eviction filing generates a data point that gets folded into a tenant screening report. This feedback loop adversely impacts a person's ability to secure housing in the future and creates a cycle of housing instability. The tenant screening industry thus undermines the human rights to housing with regard to availability, adequacy, nondiscrimination, and habitability. Tenants who bear this "Scarlet E"⁷⁰ are often limited to the dregs of the housing market.

Credit checks, which are folded into tenant screening reports, are problematic for the eleven percent of American adults who are credit invisible, meaning they have no credit history whatsoever,⁷¹ and the 8.3% who are considered credit unscorable because they lack sufficient credit histories to generate a credit score.⁷² These groups are concentrated in low-income neighborhoods and among Black and Latinx Americans.⁷³ Even with credit, people living in low-income neighborhoods are more likely to have low credit scores.⁷⁴ Credit scoring in the U.S. is notoriously rife with errors, particularly for people living in Black and Latinx neighborhoods.⁷⁵ Accordingly, the use of credit scores as data points in tenant screening reports disproportionately harms low-income people and minorities.

Criminal background checks, yet another data point in tenant screening reports, also disadvantage low-income tenants, particularly people of color. One in three Americans has a criminal record, yet most records are for arrests that never resulted in a conviction.⁷⁶ Criminal records directly reflect poverty and race given

⁷⁰ Sabbeth, *supra* note 53.

⁷¹ CONSUMER FIN. PROT. BUREAU, DATA POINT: CREDIT INVISIBLES 6 (2015), https://files.consumerfinance.gov/f/201505_cfpb_data-point-credit-invisibles.pdf [<https://perma.cc/EDN2-DBFL>].

⁷² *Id.*

⁷³ CONSUMER FIN. PROT. BUREAU, *supra* note 71, at 6. In low-income neighborhoods, almost 45% of adults are credit invisible or credit unscorable, as compared to 4% in high-income neighborhoods. *Id.* See also Foohey & Greene, *supra* note 63, at 103.

⁷⁴ Foohey & Greene, *supra* note 63, at 109.

⁷⁵ *Id.* at 108–09; CFPB Finds Credit Report Disputes Far More Common in Majority Black and Hispanic Neighborhoods, CONSUMER FIN. PROT. BUREAU (Nov. 2, 2021), <https://www.consumerfinance.gov/about-us/newsroom/cfpb-finds-credit-report-disputes-far-more-common-in-majority-black-and-hispanic-neighborhoods/> [<https://perma.cc/KMQ8-P4HH>].

⁷⁶ REBECCA VALLAS & SHARON DIETRICH, CTR. ON AM. PROGRESS, ONE STRIKE AND YOU'RE OUT: HOW WE CAN ELIMINATE BARRIERS TO ECONOMIC SECURITY AND MOBILITY FOR PEOPLE WITH CRIMINAL RECORDS 1, 5 (2014), <https://www.americanprogress.org/wp-content/uploads/sites/2/2014/12/VallasCriminalRecordsReport.pdf> [<https://perma.cc/8LBL-Z4DD>].

that poor people and Black Americans are disproportionately involved with the criminal legal system.⁷⁷ Poor adults are three times more likely to be arrested than adults above the poverty line.⁷⁸ Due to bias and structural racism in the American criminal legal system, Black Americans are arrested at rates twice as high as whites, and over sixty percent of incarcerated people are minorities.⁷⁹ In turn, criminal records perpetuate economic hardship and marginalization through their collateral consequences, which result in people being barred from housing, jobs, public benefits, voting, and other opportunities.⁸⁰ As Sarah Esther Lageson explains, using criminal records to assess a person's trustworthiness or value, "legitimizes police decision-making and entrenches the criminal justice system across unrelated institutions."⁸¹ Nevertheless, there is no evidence that criminal records are accurate predictors of a person's ability to retain housing or comply with a lease.⁸² Indeed, there is little empirical evidence regarding *any* of the data fed into tenant screening algorithms,⁸³ and yet the industry claims to predict tenant-

⁷⁷ See Erica J. Hashimoto, *Class Matters*, 101 J. CRIM. L. & CRIMINOLOGY 31, 55 (2011); Paul D. Butler, *Poor People Lose: Gideon and the Critique of Rights*, 122 YALE L.J. 2176, 2178 (2013).

⁷⁸ Hashimoto, *supra* note 77, at 61 ("[T]hose with incomes of less than 150% of the federal poverty guidelines have a risk of being charged with a felony about four times greater than the average person and about fifteen times greater than the risk for those above the 150% marker.").

⁷⁹ NELSON, *supra* note 51, at 8.

⁸⁰ See Michael Pinard, *Collateral Consequences of Criminal Convictions: Confronting Issues of Race and Dignity*, 85 N.Y.U. L. REV. 457, 491–97 (2010).

⁸¹ Sarah Lageson, *How Criminal Background Checks Lead to Discrimination Against Millions of Americans*, WASH. POST (July 10, 2020), <https://www.washingtonpost.com/opinions/2020/07/10/personal-data-industry-is-complicit-bad-policing-it-must-be-held-accountable/> [<https://archive.ph/VpFNj>].

⁸² Valerie Schneider, *Racism Knocking at the Door: The Use of Criminal Background Checks in Rental Housing*, 53 U. RICH. L. REV. 923, 933 (2019); Rebecca J. Walter, Jill Viglione & Marie Skubak Tillyer, *One Strike to Second Chances: Using Criminal Backgrounds in Admission Decisions for Assisted Housing*, 27 HOUS. POL'Y DEBATE 734, 739 (2017), <https://doi.org/10.1080/10511482.2017.1309557>.

⁸³ Walter, Viglione & Tillyer, *supra* note 82, at 740 ("Surprisingly, in the housing field, there is little research examining factors that predict a successful tenant . . . [N]othing suggests that a criminal background implies the individual will be a bad tenant."); see also Kimani Paul-Emile, *Reconsidering Criminal Background Checks: Race, Gender, and Redemption*, 25 S. CAL. INTERDISC. L.J. 395, 397 (2016) ("Studies have cast doubt on the assumption that the existence of a criminal record correctly

worthiness while landlords unquestioningly rely upon these reports.

In the U.S., government agencies, as well as tenants and their advocates, are using a variety of litigation and law reform strategies to counter the harms of tenant screening reports. This multi-pronged strategy is necessary to rein in PropTech abuses. The U.S. lacks a comprehensive data privacy law. The primary American data privacy regulator is the Federal Trade Commission (FTC), which has jurisdiction to protect consumers from “unfair and deceptive acts and practices.”⁸⁴ The FTC enforces the Fair Credit in Reporting Act (FCRA), which requires that consumer reporting agencies “follow reasonable procedures to assure maximum possible accuracy of the information concerning the individual about whom the report relates.”⁸⁵ Through its settlements with noncompliant companies and the resulting consent decrees, the FTC is creating a “common law” that companies pore over and rely upon in designing privacy policies.⁸⁶

Using its authority, the FTC has settled investigations of tenant screening companies. For instance, in 2020, the FTC entered a \$4.25 million settlement with a tenant screening company called AppFolio, alleging the company included stale data in its reports and failed to implement reasonable procedures to ensure that the criminal and eviction records it obtained from a third-party vendor were accurate.⁸⁷ One of the FTC Commissioners at the time, Rohit Chopra, dissented from the consent decree, arguing it did not go far enough because it failed to compensate victims or to refer the case to the U.S.

forecasts one's work behavior, and data show that individuals with criminal records who stay clean for a few years are no more likely than anyone else to have a future arrest.”) (citation omitted).

⁸⁴ 15 U.S.C. §45(a)(1).

⁸⁵ 15 U.S.C. §1681e(b).

⁸⁶ Daniel J. Solove & Woodrow Hartzog, *The FTC and the New Common Law of Privacy*, 114 COLUM. L. REV. 583, 586 (2014).

⁸⁷ Press Release, Fed. Trade Comm'n, Tenant Background Report Provider Settles FTC Allegations that It Failed to Follow Accuracy Requirements for Screening Reports (Dec. 8, 2020), <https://www.ftc.gov/news-events/press-releases/2020/12/tenant-background-report-provider-settles-ftc-allegations-it> [<https://perma.cc/527C-JAC9>]; see also Press Release, Fed. Trade Comm'n, FTC and CFPB Settlement to Require Trans Union to Pay \$15 Million over Charges It Failed to Ensure Accuracy of Tenant Screening Reports (Oct. 12, 2023), <https://www.ftc.gov/news-events/news/press-releases/2023/10/ftc-cfpb-settlement-require-trans-union-pay-15-million-over-charges-it-failed-ensure-accuracy-tenant> [<https://perma.cc/BBS6-QEXX>].

Department of Justice (DOJ) for a fair housing investigation.⁸⁸ Overall, the FTC's ability to police the industry is limited; it has only around fifty staff who focus on privacy.⁸⁹ Moreover, the FTC under the second Trump Administration has cut its staff and will likely change its enforcement priorities.⁹⁰

Tenants are also challenging the tenant screening industry through litigation, alleging the companies failed to comply with FCRA's requirement to ensure the "maximum possible accuracy" of personal data.⁹¹ In addition, tenants are using antidiscrimination laws designed to promote fair housing, although results are mixed.⁹² A closely watched case is *Connecticut Fair Housing Center v. Corelogic Rental Property Solutions LLC*.⁹³ In that case, Carmen Arroyo sought to have her disabled son, Mikhail Arroyo, added to her lease. The landlord denied the request based on a CoreLogic tenant screening report that stated Mikhail had a "disqualifying [criminal] record." In fact, the record related to a dismissed shoplifting arrest that pre-dated Mikhail's disability, although CoreLogic did not include that underlying information in the report. In her lawsuit, Ms. Arroyo, joined by a fair housing nonprofit organization, alleged that CoreLogic's practice of including criminal records in its tenant screening reports discriminated against Black and Latinx prospective tenants because the reports embedded the disproportionate policing and incarceration of minorities. After the trial, the court ruled that CoreLogic was not liable because its marketing materials and contracting terms disclaimed liability, thus

⁸⁸ See ROHIT CHOPRA, FED. TRADE COMM'N, DISSENTING STATEMENT OF COMMISSIONER ROHIT CHOPRA REGARDING APPFOLIO 2 (2020), https://www.ftc.gov/system/files/documents/public_statements/1584330/20201208_final_chopra_statement_on_appfolio_-_updated_0.pdf [https://perma.cc/2PLF-2FK9].

⁸⁹ In comparison, the U.K.'s Information Commissioner's Office (ICO) has over 700 employees and a £38 million budget for a mission focused entirely on privacy and data protection. Chris Jay Hoofnagle, Woodrow Hartzog & Daniel J. Solove, *The FTC Can Rise to the Privacy Challenge, but Not Without Help from Congress*, THE BROOKINGS INST. (Aug. 8, 2019), <https://www.brookings.edu/blog/techtank/2019/08/08/the-ftc-can-rise-to-the-privacy-challenge-but-not-without-help-from-congress/> [https://perma.cc/K7U9-SVVS].

⁹⁰ See Lauren Feiner, *FTC Workers are Getting Terminated, Including Consumer Protection and Antitrust Staff*, THE VERGE (Mar. 3, 2025), <https://www.theverge.com/news/623242/federal-trade-commission-terminations> [https://perma.cc/2NXN-RT2E].

⁹¹ See, e.g., Farivar, *supra* note 57; Kirchner & Goldstein, *supra* note 50.

⁹² See generally Bhatia, *supra* note 50; Humber, *supra* note 19.

⁹³ Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., LLC, No. 3:18-cv-705-VLB, 2023 WL 4669482 (D. Conn. July 20, 2023).

making the landlords the final and responsible decision-makers.⁹⁴ The case is on appeal, and the DOJ in the Biden Administration filed an amicus brief in support of the tenants.⁹⁵

Agency oversight is another restraint on unfair tenant screening practices. In 2016, HUD, the federal agency that oversees national policies and programs impacting housing and enforces fair housing laws, issued guidance stating that tenant selection policies that restrict admission to applicants with criminal records discriminate against people of color and that, accordingly, housing providers should not have blanket prohibitions on applicants with criminal records.⁹⁶ Rather, HUD advised that housing providers who employ criminal background checks should conduct “individualized assessments” of applicants and disregard arrests that did not result in convictions.⁹⁷ This guidance suggests that it is necessary to retain a human in the loop even when using automated systems as part of a tenant screening process.⁹⁸ Regardless, it is difficult to enforce this guidance because tenant screening companies hide “the exact process and underlying data inputs” of their algorithms.⁹⁹

⁹⁴ *Id.* at *20.

⁹⁵ See generally Brief for the United States as Amicus Curiae in Support of Plaintiffs-Appellants-Cross-Appellees and Urging Vacatur and Remand, *Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., LLC*, No. 23-1118 (2d Cir. Nov. 24, 2023), <https://www.justice.gov/d9/2023-11/connecticut-fair-housing-center-v.-corelogic-rental-property-solutions-no.-23-1118-2d-cir.-11.24.23.pdf> [<https://perma.cc/6PRH-RVY4>]. A federal fair housing discrimination case brought against a tenant screening company in Massachusetts was settled for \$2.3 million in 2024; the suit alleged that the scoring system’s reliance on credit scores discriminated against housing voucher holders who are disproportionately Black and Hispanic. See Emma Roth, *AI Landlord Screening Tool Will Stop Scoring Low-Income Tenants After Discrimination Suit*, THE VERGE (Nov. 20, 2024), <https://www.theverge.com/2024/11/20/24297692/ai-landlord-tool-saferent-low-income-tenants-discrimination-settlement> [<https://perma.cc/6BQT-PTCQ>] (describing *Louis v. SafeRent Sols., LLC*, No. 1:22-CV-10800-AK (D. Mass. 2024)).

⁹⁶ U.S. DEP’T OF HOUS. & URB. DEV., OFFICE OF GENERAL COUNSEL GUIDANCE ON APPLICATION OF FAIR HOUSING ACT STANDARDS TO THE USE OF CRIMINAL RECORDS BY PROVIDERS OF HOUSING AND REAL ESTATE-RELATED TRANSACTIONS 10 (2016), https://www.hud.gov/sites/documents/hud_ogcguidappfhastandcr.pdf [<https://perma.cc/WEL4-TPYS>].

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ See Leiwant, *supra* note 52, at 289.

In April 2024, HUD issued guidance specifically addressing algorithmic tenant screening practices.¹⁰⁰ Among its recommendations to landlords, HUD stated they should select screening services that “offer customizability; frequently update their data; monitor for unjustified discriminatory effects; report clear and specific reasons for denials; allow individuals to correct inaccuracies; [and] publicly disclose key details about their screening systems.”¹⁰¹ However, the Trump Administration appears to have pulled the guidance in line with its stance against diversity, equity, and inclusion programs, as it no longer appears on the HUD website where it was previously posted.

In addition to litigation, housing advocates have had some success in reforming laws at the state and local levels to protect tenants before they are harmed. There are at least three broad approaches, although they tend to differ in their implementation depending on the jurisdiction. First, some states permit expungement or sealing of certain criminal records, either automatically or at individual request, which reduces the collateral consequences of criminal records, particularly for members of historically disadvantaged groups. A second approach is to limit the information landlords may consider. Several cities have enacted “fair chance” laws that prohibit landlords from using certain criminal records, such as outdated records or non-conviction records, in their decision-making.¹⁰² Third, some jurisdictions are enacting laws that require landlords to accept portable screening reports, which are verified, third-party-generated tenant screening reports that tenants provide to landlords.¹⁰³ This approach not only reduces the costs to applicants, who must otherwise pay a landlord between \$20 to \$40 for the cost of a tenant screening report even if they are denied housing,¹⁰⁴ but

¹⁰⁰ See Chi Chi Wu & Ariel Nelson, *New Guidance Suggests Remedies for Tenant Screening Practices*, NAT’L CONSUMER L. CTR. (May 17, 2024), <https://library.nclc.org/article/new-guidance-suggests-remedies-tenant-screening-practices> [https://perma.cc/A22D-54TT].

¹⁰¹ *Id.* (summarizing the guidance).

¹⁰² NAT’L HOUS. L. PROJECT, FAIR CHANCE ORDINANCES: AN ADVOCATE’S TOOLKIT 35–40 (2019), <https://www.documentcloud.org/documents/20424281-nhlp-report-fair-chance-ordnances> [https://perma.cc/SDF4-MKXR]. In 2021, New Jersey became the first state to bar housing providers from asking about criminal history on housing applications. Fair Chance in Housing Act, N.J. STAT. ANN. § 46:8-55(a)(1) (2022).

¹⁰³ NAT’L HOUS. L. PROJECT, *supra* note 102, at 28.

¹⁰⁴ Kaveh Waddell, *How Tenant Screening Reports Make it Hard for People to Bounce Back from Tough Times*, CONSUMER REPS. (Mar. 11, 2021), <https://www.consumerreports.org/algorithmic-bias/tenant->

also gives applicants a chance to review their report for accuracy. However, these laws may have the unintended consequence of validating tenant screening reports as a selection tool. Despite these promising models for enhancing algorithmic transparency and accountability, most jurisdictions in the U.S. have not adopted any of these *ex ante* protections against erroneous or discriminatory tenant screening reports, and Congress has not enacted similar proposals at the federal level.

B. DIGITAL MORTGAGE FINANCING

Mortgage financing is where PropTech meets fintech, which can be understood as algorithmic decision-making to deliver financial services. Fintech platforms promise greater convenience, efficiency, and an increase in access to credit, particularly for people who have faced discrimination in the traditional, in-person lending processes.¹⁰⁵ Indeed, reducing discrimination in lending could bolster the human right to housing given that the U.S. has a thirty percent gap in the rate of homeownership between white and Black Americans.¹⁰⁶ The white homeownership rate is almost seventy-four percent, as compared to a Black homeownership rate of only forty-five percent¹⁰⁷—a gap larger than it was in 1968,¹⁰⁸ when the Fair Housing Act officially banned discrimination in housing.¹⁰⁹ Lending disparities, which can involve higher rates of credit denials for certain groups, different rates for equally qualified borrowers, or predatory terms and fees attached to loans, preclude certain groups

screening-reports-make-it-hard-to-bounce-back-from-tough-times/
[<https://perma.cc/9EWU-MSZE>].

¹⁰⁵ Matthew Adam Bruckner, *The Promise and Perils of Algorithmic Lenders' Use of Big Data*, 93 CHI.-KENT L. REV. 3, 11–13 (2018); Vincent Di Lorenzo, *Fintech Lending: A Study of Expectations Versus Market Outcomes*, 38 REV. BANKING & FIN. L. 725, 728 (2019).

¹⁰⁶ See Jung Hyun Choi, *Breaking Down the Black-White Homeownership Gap*, URB. INST. (Feb. 21, 2020), <https://www.urban.org/urban-wire/breaking-down-black-white-homeownership-gap> [<https://perma.cc/B656-DJ5H>].

¹⁰⁷ Press Release, U.S. Census Bureau, Quarterly Residential Vacancies and Homeownership, Fourth Quarter 2024 (Feb. 5, 2025), <https://www.census.gov/housing/hvs/files/currenthvspress.pdf> [<https://perma.cc/V3BF-AERX>].

¹⁰⁸ See Caitlin Young, *These Five Facts Reveal the Current Crisis in Black Homeownership*, URB. INST. (July 31, 2019), <https://www.urban.org/urban-wire/these-five-facts-reveal-current-crisis-black-homeownership> [<https://perma.cc/QPP8-EDZC>].

¹⁰⁹ 42 U.S.C. § 3604(b).

from accumulating housing equity.¹¹⁰ Yet the evidence is currently mixed on whether fintech lending is lessening discrimination, and as with other algorithmic systems, there are concerns about fintech's lack of transparency and accountability. These concerns are heightened given America's fraught history of segregation, and they implicate the human rights to affordable housing and nondiscrimination.

The homeownership gap has historic roots in overt governmental policies that segregated housing by race and permitted private discrimination to run rampant. During the New Deal in the 1930s, federal government agencies seeking to promote homeownership began assessing lending risks by neighborhood, and they erroneously classified Black neighborhoods as the most risky, a process known as redlining that was replicated by the private sector.¹¹¹ Redlining allowed white families to become suburban homeowners while leaving Black families to rent in urban neighborhoods roiled by disinvestment and decay.¹¹² Further, the government built highways that made white flight possible; these highways sliced through many viable low-income communities and created physical barriers within cities that separated poor neighborhoods from central business districts.¹¹³ Concurrently, suburban planners, with federal government approval, used zoning, restrictive deeds, and other exclusionary policies to exclude Black people and other historically marginalized groups from the suburbs.¹¹⁴ A modern day form of redlining, known as "reverse redlining," fueled the foreclosure crisis of the Great Recession, in which Black households faced foreclosure at twice the rate of white households, in part due to being targeted for and saddled with high-interest subprime loans even when they

¹¹⁰ Cassandra Jones Havard, "On the Take": *The Black Box of Credit Scoring and Mortgage Discrimination*, 20 B.U. PUB. INT. L.J. 241, 244 (2011).

¹¹¹ RICHARD ROTHSTEIN, *THE COLOR OF LAW: A FORGOTTEN HISTORY OF HOW OUR GOVERNMENT SEGREGATED AMERICA* 63–67 (2017).

¹¹² Moreover, even today, "neighborhoods that were redlined are associated with higher rates of poverty, lower rates of economic mobility for children, reduced housing supply, lower life expectancy and higher incidence of chronic diseases, as well as lower house values and homeownership rates." CAROLINA K. REID, *TERNER CTR. FOR HOUS. INNOVATION, UC BERKELEY, CRISIS, RESPONSE, AND RECOVERY: THE FEDERAL GOVERNMENT AND THE BLACK/WHITE HOMEOWNERSHIP GAP* 6–7 (Mar. 2021), <https://turnercenter.berkeley.edu/wp-content/uploads/2021/03/Crisis-Response-Recovery-March-2021-Final.pdf> [<https://perma.cc/T9DA-Y56E>].

¹¹³ ROTHSTEIN, *supra* note 111, at 127–31.

¹¹⁴ *Id.* at 77–91.

qualified for prime loans.¹¹⁵ This was a shift in lender objectives from “minimizing the probability of borrower default to maximizing the profits from fees and interest rates” through predatory lending targeted at minority communities.¹¹⁶ Most recently, the COVID-19 pandemic created disproportionately high economic insecurity for Black families, and more than one in five Black homeowners reported being behind on their mortgage payments as compared to less than one in ten white households.¹¹⁷

In short, segregated housing patterns did not emerge by private choice or neutral market forces. Rather, Black Americans “do not now, nor have they ever had the range of housing choices that are available to whites with comparable incomes and credit histories.”¹¹⁸ Moreover, while redlining is now illegal, its effects linger, and neighborhoods that were redlined in the early 20th Century remain racially and economically segregated.¹¹⁹ Without equitable homeownership opportunities, Black families have been denied the ability to build household wealth and pass it on to future generations, thus fueling a racial wealth gap in which the net worth of white families remained nearly ten times greater, as of 2016.¹²⁰ Today, barriers to homeownership facing Black households include lower rates of income and wealth, resulting from historic discrimination;

¹¹⁵ See Lisa Rice & Deidre Swesnik, *Discriminatory Effects of Credit Scoring on Communities of Color*, 46 SUFFOLK L. REV. 935, 943–46 (2013); Havard, *supra* note 110, at 246, 259 (“[M]ore than forty percent of those receiving sub-prime loans qualified for, but were not offered, prime loans.”).

¹¹⁶ Havard, *supra* note 110, at 245.

¹¹⁷ See REID, *supra* note 112, at 18.

¹¹⁸ Leland Ware, *The Demographics of Desegregation: Residential Segregation Remains High 40 Years After the Civil Rights Act of 1964*, 49 ST. LOUIS U. L.J. 1155, 1157 (2005).

¹¹⁹ A. Mechele Dickerson, *Systemic Racism and Housing*, 70 EMORY L.J. 1535, 1563 (2021); STEPHEN MENENDIAN, SAMIR GAMBHUR & ARTHUR GAILES, OTHERING & BELONGING INST., THE ROOTS OF STRUCTURAL RACISM PROJECT, TWENTY-FIRST CENTURY RACIAL RESIDENTIAL SEGREGATION IN THE UNITED STATES (2021), <https://belonging.berkeley.edu/roots-structural-racism> [<https://perma.cc/D6U5-WNA5>] (finding that 83% of neighborhoods redlined in the 1930s remain highly segregated).

¹²⁰ See Kriston McIntosh, Emily Moss, Ryan Nunn & Jay Shambaugh, *Examining the Black-white Wealth Gap*, BROOKINGS (Feb. 27, 2020), <https://www.brookings.edu/blog/up-front/2020/02/27/examining-the-black-white-wealth-gap/> [<https://perma.cc/MCA3-9TTK>]; Pamela Foohey & Nathalie Martin, *Fintech's Role in Exacerbating or Reducing the Wealth Gap*, 2021 U. ILL. L. REV. 459, 472 (2021).

higher rates of mortgage denials;¹²¹ higher interest rates on loans;¹²² and lower credit scores¹²³.

Mortgage lenders rely heavily on credit scoring models. The dominant FICO score, developed in 1989, weighs a narrow range of factors, such as a consumer's payment history, outstanding debt, length of credit history, applications for new credit, and debt-to-credit ratio.¹²⁴ Using traditional scoring models, lenders regularly denied mortgages to Black and Latinx borrowers or charged them higher rates for riskier mortgages.¹²⁵ There are multiple causes for this differential treatment. For instance, credit scoring models rely heavily on a history of mortgage payments, but they exclude data about on-time rental payments. Given the segregated patterns of home ownership, this data disparity adversely impacts Black

¹²¹Black people are more than 2.5 times more likely than white people to be rejected for a home loan. See Nat'l Ass'n Realtors, *NAR Finds Black Home Buyers More Than Twice as Likely to Have Student Loan Debt, be Rejected for Mortgage Loans Than White Home Buyers*, YAHOO (Feb. 17, 2021), <https://finance.yahoo.com/news/nar-finds-black-home-buyers-150000807.html> [<https://perma.cc/2KHK-R6JQ>].

¹²² Even compared to white homeowners with substantially lower incomes, black households may still be charged higher interest rates. Raheem Hanifa, *High-Income Black Homeowners Receive Higher Interest Rates than Low-Income White Homeowners*, JOINT CTR. FOR HOUS. STUD. (Feb. 16, 2021), <https://www.jchs.harvard.edu/blog/high-income-black-homeowners-receive-higher-interest-rates-low-income-white-homeowners> [<https://perma.cc/58PA-M9MP>].

¹²³ About half of white households have a credit score over 700, contrasted to only 20.6% of Black households. Jung Choi, Karan Kaul & Laurie Goodman, *FinTech Innovation in the Home Purchase and Financing Market*, URBAN INSTITUTE HOUSING FINANCE POLY CTR., July 2019, JUNG HYUN CHOI, ALANNA MCCARGO, MICHAEL NEAL, LAURIE GOODMAN & CAITLIN YOUNG, URB. INST., EXPLAINING THE BLACK-WHITE HOMEOWNERSHIP GAP: A CLOSER LOOK AT DISPARITIES ACROSS LOCAL MARKETS 8 (2019), https://www.urban.org/sites/default/files/publication/101160/explaining_the_black-white_homeownership_gap_2.pdf [<https://perma.cc/93WB-RV27>].

¹²⁴ Mikella Hurley & Julius Adebayo, *Credit Scoring in the Era of Big Data*, 18 YALE J. L. & TECH. 148, 162 (2016). The use and concept of credit scoring dates back to the 1850s. See Jonathan Weinberg, "Know Everything That Can Be Known About Everybody": *The Birth of the Credit Report*, 63 VILL. L. REV. 431, 431 (2018).

¹²⁵ See Justin P. Steil, Len Albright, Jacob S. Rugh & Douglas S. Massey, *The Social Structure of Mortgage Discrimination*, 33 HOUS. STUD. 759, 771 (2018); William C. Apgar & Allegra Calder, *The Dual Mortgage Market: The Persistence of Discrimination in Mortgage Lending*, in THE GEOGRAPHY OF OPPORTUNITY: RACE AND HOUSING CHOICE IN METROPOLITAN AMERICA 101, 101–02 (Xavier de Souza Briggs ed., 2005).

Americans and renders many of their financial transactions invisible.¹²⁶ Likewise, “[p]recarious work and housing situations, an inability to fall back on family for financial help, and barriers to building savings all show up in credit scores—and have much more to do with economic-social structures than people’s trustworthiness.”¹²⁷ In other words, credit scoring tools create a feedback loop that penalizes people for their prior exclusions from the credit market, creating a perpetual cycle of credit denials.¹²⁸ A 2019 investigation by The Markup found that lenders relying on FICO-based algorithms denied home loans to people of color at forty to eighty percent higher rates than to white people with similar financial characteristics.¹²⁹ For Black applicants, the denial rate was eighty percent higher than white applicants.¹³⁰ “In fact, high-earning Black applicants with *less* debt were rejected more often than high-earning [w]hite applicants who have *more* debt.”¹³¹

Fintech mortgage lending companies operate against this history of discrimination and hold out hope of reversing these trends. This industry has “reformed the mortgage lending process from application to underwriting, documentation, appraisal, and closing by automating data collection and verification, streamlining documentation, and facilitating online disclosures and electronic signatures.”¹³² Today, fintech companies originate about fourteen percent of mortgages; that share is growing.¹³³ Fintech companies embrace big data and machine learning—in which credit scores are only one of many data points—to fuel their algorithmic

¹²⁶ Michael Harriot, *Is Credit Racist?* THE ROOT (Sept. 2, 2021), <https://www.theroot.com/is-credit-racist-1847571502> [<https://perma.cc/TGD5-FCAR>] (studies show that “a person with a low credit score but a spotless history of rent payments is *more likely* to pay their mortgage on time than someone with a high credit score.”).

¹²⁷ See Foohey & Greene, *supra* note 63, at 109.

¹²⁸ Hurley & Adebayo, *supra* note 124, at 156.

¹²⁹ Emmanuel Martinez & Lauren Kirchner, *The Secret Bias Hidden in Mortgage-Approval Algorithms*, THE MARKUP (Aug. 25, 2021), <https://themarkup.org/denied/2021/08/25/the-secret-bias-hidden-in-mortgage-approval-algorithms> [<https://perma.cc/QQJ6-AWA8>].

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² JUNG CHOI, KARAN KAUL & LAURIE GOODMAN, HOUS. FIN. POL’Y CTR., URB. INST., FINTECH INNOVATION IN THE HOME PURCHASE AND FINANCING MARKET 6 (2019), https://www.urban.org/sites/default/files/publication/100533/fintech_innovation_in_the_home_purchase_and_financing_market_0.pdf [<https://perma.cc/G5RW-NYKD>].

¹³³ See Tobias Berg, Andreas Fuster & Manju Puri, *FinTech Lending*, 190 (Nat’l Bureau of Econ. Rsch. Working Paper No. 29421, 2022).

determinations.¹³⁴ Machine learning systems are fed massive amounts of data to find correlations between data points and creditworthiness; they are “capable of adapting to new information—or ‘learning’—without human intervention.”¹³⁵ These companies mine sources such as consumers’ social websites, internet search history, retail history, repayment history, educational history, and much more.¹³⁶ Some models even consider factors such as how an applicant capitalizes words in their applications—all caps is a red flag—or how fast applicants scroll through online disclosure terms.¹³⁷ Ideally, these varied data points “might be able to identify hidden or unexpected variables that affect a borrower’s likelihood of repaying a loan.”¹³⁸

Accordingly, fintech proponents claim that computer-generated outcomes are less biased and more accurate than human decision-makers, who are known to be infected with conscious and implicit biases.¹³⁹ However, the reams of data fed into the algorithms do not automatically eliminate discrimination. Rather, algorithms can embed the same existing social disparities reflected in traditional scoring models. This is because lending algorithms have “often been fed on a diet of biased credit decision data, drawn from decades of inequities in housing and lending markets. Left unchecked, they threaten to perpetuate prejudice in financial decisions and extend the world’s wealth gaps.”¹⁴⁰ Even without express data about race or other protected categories, an algorithm will identify proxies for these characteristics through data such as zip code, surname, and

¹³⁴ See Bruckner, *supra* note 105, at 11–13; Winnie F. Taylor, *Fintech and Race-Based Inequality in the Home Mortgage and Auto Financing Markets*, 33 LOY. CONSUMER L. REV. 366, 373 (2021).

¹³⁵ MICHAEL AKINWUMI, JOHN MERRILL, LISA RICE, KAREEM SALEH & MAUREEN YAP, ECON. STUD., BROOKINGS, AN AI FAIR LENDING POLICY AGENDA FOR THE FEDERAL FINANCIAL REGULATORS 4 (2021), https://www.brookings.edu/wp-content/uploads/2021/12/Akinwumi_Merrill_Rice_Saleh_Yap_12-01-2021-1.pdf [<https://perma.cc/Y7JE-9BNL>].

¹³⁶ See Bruckner, *supra* note 97, at 13–14.

¹³⁷ See Lorena Rodriguez, *All Data Is Not Credit Data: Closing the Gap Between the Fair Housing Act and Algorithmic Decisionmaking in the Lending Industry*, 120 COLUM. L. REV. 1843, 1858–59 (2020).

¹³⁸ William Magnuson, *Artificial Financial Intelligence*, 10 HARV. BUS. L. REV. 337, 349 (2020).

¹³⁹ See Bruckner, *supra* note 105, at 12–13.

¹⁴⁰ Sian Townson, *AI Can Make Bank Loans More Fair*, HARV. BUS. REV. (Nov. 6, 2020), <https://hbr.org/2020/11/ai-can-make-bank-loans-more-fair> [<https://perma.cc/NMP2-V6C3>]; see also Andreas Fuster, Paul Goldsmith-Pinkham, Taurun Ramadorai & Ansgar Walther, *Predictably Unequal? The Effects of Machine Learning on Credit Markets*, 67 J. FIN. 5 (2022), <https://doi.org/10.1111/jofi.13090>.

college attendance data.¹⁴¹ At the same time, lending algorithms are “black boxes,” meaning they lack transparency to outsiders, and borrowers have no way to know why they are granted or denied a loan or the reason for a loan’s terms.¹⁴² Even industry insiders can struggle to understand algorithmic outcomes. One survey of tech executives in the financial services sector found that almost seventy percent of respondents could not explain how AI decisions predict certain outcomes.¹⁴³

The evidence on equity and access in fintech lending remains mixed.¹⁴⁴ There is evidence that fintech lending can expand financial inclusion for borrowers with low credit scores,¹⁴⁵ but studies also show that fintech lenders are more likely to favor creditworthy borrowers than traditional lenders.¹⁴⁶ Moreover, several studies show that racial discrimination persists. One study showed that fintech’s more sophisticated machine learning models are more likely to benefit white and Asian American borrowers, who already have better access to credit than Black and Latinx borrowers.¹⁴⁷ A meta review of existing research concludes that “borrowers who got loans from FinTechs would otherwise likely have been able to obtain them from banks or other sources.”¹⁴⁸ A prominent study from researchers at Berkeley concluded that “even if algorithmic lending can reduce discrimination relative to face-to-face lenders, it is insufficient to

¹⁴¹Bruckner, *supra* note 105, at 29.

¹⁴² See Lisa Rice and Deidre Swesnik, *Discriminatory Effects of Credit Scoring on Communities of Color*, 46 SUFFOLK L. REV. 935, 951 (2013); FRANK PASQUALE, *THE BLACK BOX SOCIETY* 22–25 (2015).

¹⁴³ See Jonathan Greig, *Report Finds Startling Disinterest in Ethical, Responsible Use of AI Among Business Leaders*, ZDNET (May 25, 2021), <https://www.zdnet.com/article/fico-report-finds-startling-disinterest-in-ethical-responsible-use-of-ai-among-business-leaders/> [https://perma.cc/X4JY-3TS2].

¹⁴⁴ See Berg, Fuster & Puri, *supra* note 133 (summarizing multiple studies about Fintech lending impacts along efficiency and distributional outcomes).

¹⁴⁵ Marco DiMaggio, Dimuthu Ratnadiwakara & Don Carmichael, *Invisible Primes: Fintech Lending with Alternative Data* 4 (Harv. Bus. Sch. Working Paper 22-024, 2021) https://www.hbs.edu/ris/Publication%20Files/22-024_80dc9115-69cc-4564-99c6-3a937f275d31.pdf [https://perma.cc/9ZK7-U7AK].

¹⁴⁶ CHOI, KAUL & GOODMAN, *supra* note 132, at 6, 10 (summarizing studies).

¹⁴⁷ Studies in the UK and India “reach more optimistic conclusions.” BERG, FUSTER & PURI, *supra* note 133, at 14; Fuster, Goldsmith-Pinkham, Ramadorai & Walther, *supra* note 140.

¹⁴⁸ BERG, FUSTER & PURI, *supra* note 140, at 15.

eliminate discrimination in loan pricing.”¹⁴⁹

American law prohibits discrimination in mortgage lending.¹⁵⁰ It has been effective in reducing the most blatant forms of housing discrimination such as redlining and restrictive covenants, but those methods have been replaced with more subtle, but equally harmful, forms of discrimination.¹⁵¹ Most of the governing statutes were written in the 1960s and 1970s, an era in which credit markets were tight and there was little information on which lenders based decisions, leading to widespread discrimination because loan officers made subjective decisions and “could simply deny people because they ‘didn’t look credit worthy.’”¹⁵² By contrast, “[t]oday, we face an overabundance of poor-quality credit (high interest rates, fees, abusive debt traps) and concerns over the usage of too many sources of data that can hide as proxies for illegal discrimination.”¹⁵³ The governing antidiscrimination laws protect not only against intentional discrimination, but also ostensibly neutral practices and policies that have disparate impacts against protected groups. When mortgage loans were made in person, intentional discrimination ran rampant. In algorithmic systems, the bigger concern is disparate impact.¹⁵⁴

Under the disparate impact test for discrimination, after a plaintiff establishes an adverse outcome on a protected class, the lender can defend itself by establishing a legitimate business need that cannot reasonably be achieved by alternative, less discriminatory means. How fintech lending will fare under this test remains to be seen, as courts have yet to apply the disparate impact test in the algorithmic, fintech context.¹⁵⁵ On the one hand, these

¹⁴⁹ Robert Bartlett, Adair Morse, Richard Stanton & Nancy Wallace, *Consumer-Lending Discrimination in the FinTech Era*, 143 J. FIN. ECON. 30, 55 (2022), <https://doi.org/10.1016/j.jfineco.2021.05.047>.

¹⁵⁰ Statutes include the Fair Housing Act of 1968, 42 U.S.C. § 13601 *et seq.*; the Home Mortgage Disclosure Act of 1975, 12 U.S.C. § 2801 *et seq.*; the Community Reinvestment Act of 1977, 12 U.S.C. § 2901 *et seq.*; and the Equal Credit Opportunity Act of 1974, 15 U.S.C. § 1691 *et seq.*

¹⁵¹ See generally Alex Gano, *Disparate Impact and Mortgage Lending: A Beginner’s Guide*, 88 U. COLO. L. REV. 1109 (2017).

¹⁵² Aaron Klein, *Reducing Bias in AI-Based Financial Services*, BROOKINGS, (July 10, 2020), <https://www.brookings.edu/research/reducing-bias-in-ai-based-financial-services/> [https://perma.cc/9A5J-GHZY].

¹⁵³ *Id.*

¹⁵⁴ See Jason Jia-Xi Wu, *Algorithmic Fairness in Consumer Credit Underwriting: Towards A Harm-Based Framework for AI Fair Lending*, 21 BERKELEY BUS. L.J. 65, 92 (2024), <http://dx.doi.org/10.2139/ssrn.4320444>.

¹⁵⁵ See Wu, *supra* note 154, at 70, 99–102 (“For consumers seeking to

automated systems are built on reams of data that can be statistically analyzed based on a lender's own records, making it technically possible to identify discriminatory lending patterns.¹⁵⁶ On the other hand, increased accuracy in correlations between input data and predicted credit risk is likely to make it difficult for plaintiffs to counter the business necessity defense or articulate alternative practices that would meet the lender's goals with less disparate impact.¹⁵⁷

Moreover, lenders may evade liability under disparate impact theory by establishing that their models simply reflect existing forms of systemic bias.¹⁵⁸ To combat this risk, the Consumer Financial Protection Bureau (CFPB) under the Biden Administration took several strong stances to protect against discrimination in lending. For example, the CFPB issued an advisory opinion announcing that the Equal Credit Opportunity Act bars lenders from discriminating in all aspects of a credit arrangement, including post-application terms.¹⁵⁹ The CFPB issued additional guidance specifying that lenders must provide consumers with accurate and specific reasons when making adverse decisions pursuant to algorithms¹⁶⁰ and reinforced that federal laws provide no exceptions for new

recover from algorithmic discrimination with respect to a credit transaction, the doctrinal uncertainty of ECOA disparate impact liability suggests a bleak future.”); Gano, *supra* note 151, at 1113.

¹⁵⁶ See Ian Ayres, Gary Klein & Jeffrey West, *The Rise and (Potential) Fall of Disparate Impact Lending Litigation*, in EVIDENCE AND INNOVATION IN HOUSING LAW & POLICY 231–32 (Lee Anne Fennell & Benjamin J. Keys eds., 2017).

¹⁵⁷ Solon Barocas & Andrew D. Selbst, *Big Data's Disparate Impact*, 104 CAL. L. REV. 671 (2016), <http://dx.doi.org/10.15779/Z38BG31>; Wu, *supra* note 154, at 114–15; Hurley & Adebayo, *supra* note 124, at 194 (“In order to prove ‘business necessity,’ the defendant need not show that the challenged policy or practice was indispensable to its objective, but only that the policy was ‘related’ to its objective or business goals.”).

¹⁵⁸ Hurley & Adebayo, *supra* note 124, at 194.

¹⁵⁹ *CFPB Issues Advisory Opinion on Coverage of Fair Lending Laws*, CONSUMER FIN. PROT. BUREAU, (May 9, 2022), <https://www.consumerfinance.gov/about-us/newsroom/cfpb-issues-advisory-opinion-on-coverage-of-fair-lending-laws/> [<https://perma.cc/7SG3-T6PR>].

¹⁶⁰ *Consumer Financial Protection Circular 2023-03: Adverse Action Notification Requirements and the Proper Use of the CFPB's Sample Forms Provided in Regulation B*, CONSUMER FIN. PROT. BUREAU (Sep. 19, 2023), <https://www.consumerfinance.gov/compliance/circulars/circular-2023-03-adverse-action-notification-requirementsand-the-proper-use-of-the-cfpbs-sample-forms-provided-in-regulation-b/> [<https://perma.cc/KSG8-MMTS>].

technologies.¹⁶¹ Moreover, the CFPB suggested that it expects financial institutions to search for less discriminatory alternatives in conducting disparate impact fairness analysis.¹⁶² However, the second Trump Administration is dismantling the CFPB through mass terminations and orders to stop work, and it is unclear whether the agency will exist, and if so, in what form.¹⁶³

In short, while fintech lending holds the promise of expanding access to credit and increasing minority homeownership, it will require increased transparency, technical approaches that consider less discriminatory alternatives, government oversight and enforcement, and accountable auditing to avoid the perils of discrimination and to advance the human right to housing.¹⁶⁴ Until

¹⁶¹ CFPB Comment to Hon. Janet Yellen, Secretary U.S. Dept. of the Treasury, on Request for Information on Uses, Opportunities, and Risks of Artificial Intelligence in the Financial Services Sector, CONSUMER FIN. PROT. BUREAU (Aug. 12, 2024), <https://www.consumerfinance.gov/about-us/newsroom/cfpb-comment-on-request-for-information-on-uses-opportunities-and-risks-of-artificial-intelligence-in-the-financial-services-sector/> [https://perma.cc/8MS7-T6PP].

¹⁶² Brad Blower, *CFPB Puts Lenders & Fintechs on Notice: Their Models Must Search for Less Discriminatory Alternatives or Face Fair Lending Non-Compliance Risk*, NAT'L CMTY. REINVESTMENT COAL. (Apr. 5, 2023), <https://ncrc.org/cfpb-puts-lenders-fintechs-on-notice-their-models-must-search-for-less-discriminatory-alternatives-or-face-fair-lending-non-compliance-risk/> [https://perma.cc/QWM5-PFU7].

Leading consumer groups wrote to the CFPB urging the agency to provide clear guidance making the “less discriminatory alternative” a regulatory requirement. Letter from Jennifer Chien & Adam Rust, Urgent Call for Regulatory Clarity on the Need to Search for and Implement Less Discriminatory Algorithms (June 26, 2024), <https://advocacy.consumerreports.org/wp-content/uploads/2024/06/240626-CR-CFA-Statement-on-Less-Discriminatory-Algorithms-FINAL.pdf> [https://perma.cc/293W-F664].

¹⁶³ See Douglas Gillison, *Trump Administration Allows Some CFPB Work to Resume Amid Court Battle, Emails Show*, REUTERS (Mar. 5, 2025), <https://www.reuters.com/world/us/trump-administration-allows-some-cfpb-work-resume-amid-court-battle-emails-show-2025-03-05/>; Ryan Knappenberger, *CFPB Official Details DOGE Chaos Amid Agency Gutting*, COURTHOUSE NEWS SERV. (Mar. 10, 2025), <https://www.courthousenews.com/cfpb-official-details-doge-chaos-amid-agency-gutting/>.

¹⁶⁴ See also the recommendations in AKINWUMI, *supra* note 135, at 8–16; James A. Allen, *The Color of Algorithms: An Analysis and Proposed Research Agenda for Detering Algorithmic Redlining*, 46 FORDHAM URB. L.J. 219, 253–68 (2019); Hilary J. Allen, *Experimental Strategies for Regulating Fintech*, 3 J. OF L. & INNOVATION 1, 24 (2020) (arguing that the “core goals of financial stability and consumer/investor protection should not be neglected in favor of innovation-driven efficiency and competition”).

then, “we should assume that, absent affirmative interventions, version 2.0 credit algorithms will perpetuate bias.”¹⁶⁵

C. ONLINE, PLATFORM-BASED ADVERTISING FOR REAL ESTATE

Current practices in online advertising impact housing availability and nondiscrimination. The use of digital tools to market property to potential renters and homeowners is part of the Proptech landscape. Over seventy-two percent of apartment seekers and ninety percent of homebuyers go online to search for properties, while online advertisers use platforms such as Meta (known colloquially as Facebook) to target ads to renters and home purchasers. Facebook alone offers advertisers access to over two billion users worldwide, and over 98.5% of Facebook’s revenue derives from advertising. Facebook deploys sophisticated algorithms that mine people’s digital footprints to understand, predict, and attempt to influence their preferences and behaviors. In turn, the advertising that people see—or don’t see—shapes their housing opportunities. As Pauline Kim explains, “[p]redictive algorithms are built by observing past patterns of behavior, and one of the enduring patterns in American economic life is the unequal distribution of opportunities along the lines of race, gender, and other personal characteristics.”¹⁶⁶ This means that advertising built on predictive analytics is “likely to distribute information about future opportunities in ways that reflect existing inequalities and may reinforce historical patterns of disadvantage.”¹⁶⁷ Indeed, numerous investigations show discriminatory outcomes in online advertising.

In 2016, investigative journalists at ProPublica uncovered that landlords and real estate brokers were able to target advertising on Facebook to select viewer demographics in ways that discriminated against protected classes under the Fair Housing Act.¹⁶⁸ In 2018, the

¹⁶⁵ Bruckner, *supra* note 105, at 29.

¹⁶⁶ Pauline T. Kim, *Manipulating Opportunity*, 106 VA. L. REV. 867, 869–70 (2020).

¹⁶⁷ *Id.* at 870.

¹⁶⁸ Julia Angwin & Terry Parris Jr., *Facebook Lets Advertisers Exclude Users by Race*, PROPUBLICA (Oct. 26, 2016), <https://www.propublica.org/article/facebook-lets-advertisers-exclude-users-by-race> [<https://perma.cc/EK9E-DRCU>] (Facebook allows housing advertisers to exclude specific people on the basis of “ethnic affinities,” which are based on “pages and posts [users] have liked or engaged with on Facebook”); Julia Angwin, Ariana Tobin & Madeleine Varner, *Facebook (Still) letting Housing Advertisers Exclude Users by Race*, PROPUBLICA (Nov. 21, 2017), <https://www.propublica.org/article/facebook-advertising->

National Fair Housing Alliance and other fair housing groups sued Facebook, challenging these targeted ad practices. These groups alleged that Facebook “engaged in discrimination by design—stripping data from its users and using it to create discriminatory advertising content: a pre-populated list of demographics, behaviors, and interests from which housing advertisers select in order to exclude certain home seekers from ever seeing their ads.”¹⁶⁹ To offer this targeted advertising to companies, Facebook classified people into more than 50,000 categories such as “English as a second language,” “disabled parking permit,” and “Telemundo.”¹⁷⁰ Initially, Facebook disclaimed responsibility, asserting that any discrimination was the result of advertiser choices, and it was nothing more than a neutral platform.¹⁷¹ However, in 2019, the case settled when Facebook agreed to create a separate portal for housing, credit, and employment advertising that prohibits targeting based on protected characteristics, as well as a new interface that allows consumers to search for and view all housing advertisements regardless of the ads that are fed into their social media feeds.

However, the efficacy of this settlement was questionable, as numerous studies showed Facebook’s ad delivery system was still leading to discriminatory outcomes.¹⁷² This is because a complex

discrimination-housing-race-sex-national-origin [https://perma.cc/XGC9-53AX] (Facebook allowed rental housing ads to exclude certain categories, including “African-Americans, mothers of high school kids, people interested in wheelchair ramps, Jews, expats from Argentina and Spanish speakers.”); Julia Angwin, Madeleine Varner & Ariana Tobin, *Facebook Enabled Advertiser to Reach “Jew Haters,”* PROPUBLICA (Sept. 14, 2017), https://www.propublica.org/article/facebook-enabled-advertisers-to-reach-jew-haters [https://perma.cc/35U8-57F8] (Facebook allowed advertisers to target ads to users who expressed anti-Semitic views).

¹⁶⁹ See Chandler Nicholle Sprinks, *Contemporary Housing Discrimination: Facebook, Targeted Advertising, and the Fair Housing Act*, 57 HOUSTON L. REV. 925, 936 (2020) (quoting the complaint).

¹⁷⁰ Angwin & Parris, *supra* note 168.

¹⁷¹ Kim, *supra* note 166, at 884.

¹⁷² Another determinant of ad delivery involves how an algorithm processes market effects, such as how other advertisers bid in online auctions to reach certain users. Muhammad Ali, *et al.*, *Discrimination through Optimization: How Facebook’s Ad Delivery Can Lead to Skewed Outcomes*, 3 PROC. OF THE ACM ON HUMAN-COMPUTER INTERACTION 1 (Nov. 2019), https://www.ccs.neu.edu/home/amislove/publications/FacebookDelivery-CSCW.pdf [https://perma.cc/RX9U-BFDL]; Amit Datta *et al.*, *Automated Experiments on Ad Privacy Settings: A Tale of Opacity, Choice, and Discrimination* (Mar. 18, 2015), https://arxiv.org/pdf/1408.6491.pdf

array of factors in the system determines who will see an ad from the pool of viewers an advertiser seeks to reach. “Where a particular ad appears is influenced by the advertiser (who specifies its target audience), other advertisers (who are competing for advertising space), users themselves (who choose whether or not to click on particular ads), and the platform that coordinates these preferences.”¹⁷³ Studies show that the content of an ad can lead delivery algorithms to send ads to different populations, as one recent study found, “[a]ds targeting the same audience but that include a creative that would stereotypically be of the most interest to men (e.g., bodybuilding) can deliver to over 80% men, and those that include a creative that would stereotypically be of the most interest to women (e.g., cosmetics) can deliver to over 90% women.”¹⁷⁴ Similar dynamics occurred when the researchers ran housing ads: “despite the same targeting and budget, some of our ads deliver to an audience of over 72% Black users, while others deliver to over 51% Black users.”¹⁷⁵

Concluding that the settlement did not resolve all discriminatory outcomes on Facebook, HUD filed formal charges of discrimination against Facebook in 2019.¹⁷⁶ HUD alleged that ad-targeting tools allowed advertisers to exclude protected groups and even engage in digital redlining through “a map tool to exclude people who live in a specified area from seeing an ad by drawing a red line around that area.”¹⁷⁷ The micro-targeting offered advertisers thousands of attributes from which to choose; they could exclude “women in the workforce,” “foreigners,” “Puerto Rico Islanders,” and other discrete categories of people.¹⁷⁸ HUD also pointed to discriminatory outcomes resulting from the ad delivery phase, in which Facebook determines who will see an ad based “in large part on the inferences and predictions it draws about each user’s likelihood to respond to an ad based on the data it has about that user, the data it has about other users whom it considers to resemble that user, and the data it

[<https://perma.cc/U4C3-ETD8>]; Anja Lambrecht & Catherine E. Tucker, *Algorithmic Bias? An Empirical Study into Apparent Gender-Based Discrimination in the Display of STEM Career Ads* (Mar. 9, 2018), <http://dx.doi.org/10.2139/ssrn.2852260>.

¹⁷³ Kim, *supra* note 166, at 886.

¹⁷⁴ Ali et al., *supra* note 172, at 3.

¹⁷⁵ *Id.* at 3–4.

¹⁷⁶ U.S. Dep’t. of Housing & Urb. Dev. v. Facebook, Inc., FHEO No. 01-18-0323-8 (Mar. 28, 2019), https://www.hud.gov/sites/dfiles/Main/documents/HUD_v_Facebook.pdf [<https://perma.cc/YCR5-FRFQ>].

¹⁷⁷ *Id.* at 4.

¹⁷⁸ *Id.*

has about ‘friends’ and other associates of that user.”¹⁷⁹ Based on these charges, the DOJ filed a civil rights complaint against Facebook in federal court.¹⁸⁰ The resulting settlement requires Facebook to stop offering an ad delivery tool which algorithmically identified users who may belong to an advertiser’s preselected racial, religious, or sex-based group.¹⁸¹ Under the settlement, Facebook must develop a new system for delivering housing ads that will be reviewed by an independent party to demonstrate compliance.¹⁸² The various lawsuits alleging housing discrimination in platform advertising, some of which are still ongoing, make clear that *ex ante* regulatory solutions are needed to audit and assess advertising algorithms before they are deployed and that a strict regime of auditing for bias will be necessary. Increasingly, there are calls for complete bans on the targeted advertising industry given “that most of the unsavory things the platforms do—boost inflammatory content, track our whereabouts, enable election manipulation, crush the news industry—stem from the goal of boosting ad revenues.”¹⁸³ Without careful oversight, the online advertising ecosystem threatens the human right to housing.

D. HOME SURVEILLANCE

Security of tenure and nondiscrimination are threatened by the expansion of surveillance technologies in and around people’s homes, especially when it comes to low-income and other historically marginalized people in the U.S. Throughout American history, poor people and people of color have been subjected to more intense surveillance than their wealthier counterparts, and this extends to their residences. While an affluent man’s home may be his castle, poor people lack a similar “moat” of privacy, both in their daily lives and as a matter of law.¹⁸⁴ As Mutale Nkonde writes,

¹⁷⁹ *Id.* at 5.

¹⁸⁰ Complaint, United States v. Meta Platforms, Inc., Case 1:22-cv-05187 (S.D.N.Y. June 21, 2022).

¹⁸¹ Press Release, U.S. Dep’t. of Justice, Justice Department Secures Groundbreaking Settlement Agreement with Meta Platforms, Formerly Known as Facebook, to Resolve Allegations of Discriminatory Advertising (June 21, 2022), <https://www.justice.gov/opa/pr/justice-department-secures-groundbreaking-settlement-agreement-meta-platforms-formerly-known> [<https://perma.cc/8MXW-S4TU>].

¹⁸² *Id.*

¹⁸³ Gilad Edelman, *Why Don’t We Just Ban Targeted Advertising?*, WIRED (Mar. 22, 2020), <https://www.wired.com/story/why-dont-we-just-ban-targeted-advertising/> [<https://perma.cc/9LWN-S6WQ>].

¹⁸⁴ See Christopher Slobogin, *The Poverty Exception to the Fourth*

modern surveillance tools used to control the movements of Black Americans can be traced to Lantern Laws of the 1700s, which required enslaved persons to carry lanterns at night to make themselves visible to white people.¹⁸⁵

Modern technology echoes these historical modes of surveillance. For decades, low-income housing developments in the U.S. have been dotted with surveillance cameras that watch the comings and goings of residents, their guests, and the public. Housing projects have used biometric tools such as fingerprint identification and retinal scans since at least the 1990s.¹⁸⁶ The police also deploy surveillance technologies, including facial recognition technology (FRT), in public housing projects, ostensibly to reduce crime.¹⁸⁷ As Lindsey Barrett notes, “[s]imply walking around in Detroit, or being in an economic circumstance that requires you to rely on public housing, could be enough for your face to wind up in a database, available for perusal by the police.”¹⁸⁸

Proptech companies are hawking FRT to property owners. Although there are various forms and uses of FRT, “[t]he simple idea

Amendment, 55 FLA. L. REV. 391, 401 (2003) (explaining that constitutional protection against government searches “varies depending on the extent to which one can afford accoutrements of wealth such as a freestanding home, fences, lawns, heavy curtains, and vision- and sound-proof doors and walls.”).

¹⁸⁵ Mutale Nkonde, *Automated Anti-Blackness: Facial Recognition in Brooklyn*, *New York*, 2019–20 HARV. KENNEDY SCH. J. AFR. AM. POL’Y 30, 31–32, <https://pacscenter.stanford.edu/wp-content/uploads/2020/12/mutalenkonde.pdf> [<https://perma.cc/6GQK-F63V>]; see also SIMONE BROWNE, DARK MATTERS: ON THE SURVEILLANCE OF BLACKNESS 76–83 (2015) (discussing how lantern laws were one of many laws designed to create a surveillance apparatus over Black people in colonial America).

¹⁸⁶ See KELLY A. GATES, OUR BIOMETRIC FUTURE: FACIAL RECOGNITION TECHNOLOGY AND THE CULTURE OF SURVEILLANCE 135 (2011) (discussing biometric tools used since the 1990’s to “monitor unauthorized occupancy and adjust rental assistance allocations”).

¹⁸⁷ Lola Fadulu, *Facial Recognition Technology in Public Housing Prompts Backlash*, N.Y. TIMES (Sept. 24, 2019) <https://www.nytimes.com/2019/09/24/us/politics/facial-recognition-technology-housing.html> [<https://perma.cc/ET3D-E4Y2>]; Sarah Miller, *Reconceptualizing Public Housing: Not as a Policed Site of Control, but as a System of Support*, 28 GEO. J. ON POVERTY L. & POL’Y 95, 107 (2020) (discussing how surveillance technologies deployed in public housing projects, compounded by common policing practices, ultimately serve to contribute to harmful mass incarceration of black communities).

¹⁸⁸ Lindsey Barrett, *Ban Facial Recognition Technologies for Children—And for Everyone Else*, 26 B.U. J. SCI. & TECH. L. 223, 236 (2020).

behind facial recognition is to have a computer program automatically match a digital image of a face with a similar digital image of a face in a stored database.”¹⁸⁹ FRT systems are fed by the millions of photos people turn over to government agencies and private entities, making them “perpetually the possible subject of automated evaluation.”¹⁹⁰ While landlords assert that FRT maintains safety and security, tenants in low-income developments fear that the evidence generated from FRT will be shared with law enforcement and used to displace them for gentrification efforts.

This tension came to a head at Atlantic Towers, a rent-stabilized building with 700 units predominated by Black women tenants in Brooklyn, New York. In 2018, the landlord of the development advised tenants that their key fobs would be replaced by FRT.¹⁹¹ The tenants organized in opposition to the plan and, along with a legal services organization, filed a formal complaint with a state agency arguing that the system was an “intrusion into the quiet enjoyment of their private home lives,” and that the landlord could not establish that the system was necessary, accurate, or unbiased.¹⁹² The tenants highlighted extensive research showing that FRT is less accurate for women of color than any other demographic group. In the face of the protest, the landlord ultimately backed down from the plan.¹⁹³

By contrast, residents of affluent communities are far more accepting of surveillance technologies, as they face far fewer harmful consequences. One study that compared surveillance tools in a public housing project to those in gated communities found that “enforcement of disciplinary state laws” drove the surveillance logics of the former, while “enforcement of conformity in

¹⁸⁹ Andrew Ferguson, *Facial Recognition and the Fourth Amendment*, 105 MINN. L. REV. 1105, 1109 (2021).

¹⁹⁰ Barrett, *supra* note 188, at 225.

¹⁹¹ Ginia Bellafante, *The Landlord Wants Facial Recognition in its Rent-Stabilized Buildings. Why?*, N.Y. TIMES (Mar. 28, 2019), <https://www.nytimes.com/2019/03/28/nyregion/rent-stabilized-buildings-facial-recognition.html> [<https://archive.ph/kC9iO>].

¹⁹² Complaint at 18, In the Matter of The Owner’s Application for Modification of Services, No. GS2100050d, (N.Y.S. Hous. & Cmty. Renewal Off. of Rent Admin./MCI Unit Apr. 30, 2019), <https://www.legalservicesnyc.org/storage/PDFs/%20opposition%20to%20facial%20recognition%20entry%20system%20app.pdf> [<https://perma.cc/ST8X-JRYE>].

¹⁹³ Yasmin Gagne, *How We Fought our Landlord’s Secretive Plan for Facial Recognition-and Won*, FAST CO. (Nov. 22, 2019), <https://www.fastcompany.com/90431686/our-landlord-wants-to-install-facial-recognition-in-our-homes-but-were-fighting-back> [<https://archive.ph/yt8Gc>].

appearance” marked the latter.¹⁹⁴ For public housing residents, where “surveillance systems are implemented in contexts marked by suspicion and inequality, the systems appear to absorb and reproduce those identities and relations.”¹⁹⁵ Another study interviewed public housing residents and found that residents welcomed “smart technologies offered in terms of security, health, and maintaining connections with family members,” but simultaneously “had reservations about who had access to different kinds of data and where and when they might be leaving digital traces for others to follow.”¹⁹⁶ These studies demonstrate how the same technology is not necessarily experienced similarly by all groups; rather, context matters. Chris Gilliard astutely describes this class divide as “luxury surveillance,” which is “expensive, voluntary, and sleek,” versus “imposed surveillance,” which is “involuntary, overt, clunky, and meant to stand out.”¹⁹⁷

Another growth market for “luxury” surveillance involves Ring “smart” doorbells, installed in sixteen percent of U.S. homes. These doorbells come equipped with motion-activated video cameras and capture images of millions of people without their knowledge or consent. The doorbells are heavily marketed as safety enhancing, although studies do not show a correlation between their adoption and reductions in crime.¹⁹⁸ In fact, certain high-profile hacks of the video streams show how criminals could take advantage of the technology for nefarious purposes, such as a man who used Ring to harass an eight-year-old girl in her bedroom.¹⁹⁹ The technology also

¹⁹⁴ Torin Monahan, *Electronic Fortification in Phoenix: Surveillance Technologies and Social Regulation in Residential Communities*, 42 URB. AFF. REV. 169, 170 (2006), https://publicsurveillance.com/papers/Electronic_Fortification.pdf [<https://perma.cc/59HW-AJRU>].

¹⁹⁵ *Id.* at 180.

¹⁹⁶ SANDJAR KOZUBAEV, CARL DiSALVO, FERNANDO ROCHAIX & CHRISTOPHER A. LE DANTEC, CHI CONF. ON HUM. FACTORS IN COMPUTING SYS. PROC., PAPER 439, SPACES AND TRACES: IMPLICATIONS OF SMART TECHNOLOGY IN PUBLIC HOUSING 7 (2019), <https://dl.acm.org/doi/10.1145/3290605.3300669>.

¹⁹⁷ Chris Gilliard, *The Two Faces of the Smart City*, FAST CO. (Jan. 20, 2020), <https://www.fastcompany.com/90453305/the-two-faces-of-the-smart-city> [<https://archive.ph/SgQwR>].

¹⁹⁸ Alfred Ng, *Ring’s Work With Police Lacks Solid Evidence of Reducing Crime*, CNET (Mar. 19, 2020) <https://www.cnet.com/features/rings-work-with-police-lacks-solid-evidence-of-reducing-crime/> [<https://archive.ph/SKGu6>].

¹⁹⁹ Allyson Chiu, *She Installed a Ring Camera in Her Children’s Room for ‘Peace of Mind’ A Hacker Accessed it and Harassed Her 8 Year-Old*

threatens privacy and civil liberties. The video footage can be shared with neighborhood groups via an app, which in turn makes it available to police and fire departments in over 2,000 communities.²⁰⁰ Police can also ask homeowners to turn over video voluntarily or seek a warrant to obtain the video. The technology is associated with racial profiling, as video posts “disproportionately depict people of color, and descriptions often use racist language or make racist assumptions about the people shown.”²⁰¹ Yet the voluntary adoption of surveillance technology in the name of safety evades the level of scrutiny that would likely accompany police-installed cameras.²⁰²

Despite the discriminatory impact of surveillance technologies in housing, legal restrictions on housing surveillance in the U.S. are minimal. Regarding subsidized housing, HUD does not regulate FRT or even know how many housing developments use the technology.²⁰³ While the Fourth Amendment protects citizens against warrantless searches and seizures,²⁰⁴ people’s activity in public spaces has long been deemed outside the Amendment’s

Daughter, WASH. POST (Dec. 12, 2019), <https://www.washingtonpost.com/nation/2019/12/12/she-installed-ring-camera-her-childrens-room-peace-mind-hacker-accessed-it-harassed-her-year-old-daughter/?arc404=true> [https://archive.ph/pIc1q].

²⁰⁰ Drew Harwell, *Home-Security Cameras Have Become a Fruitful Resource for Law Enforcement—and a Fatal Risk*, WASH. POST (Mar. 2, 2021), <https://www.washingtonpost.com/technology/2021/03/02/ring-camera-fears/> [https://archive.ph/vm87Y]; Daniel Wroclawski, *What to Do if the Police Ask for Your Video Doorbell Recordings*, CONSUMER REPS. (Oct. 1, 2021), <https://www.consumerreports.org/legal-rights/police-ask-for-video-doorbell-recordings-what-to-do-faq/> [https://archive.ph/oOMxq].

²⁰¹ Caroline Haskins, *Amazon’s Home Security Company is Turning Everyone into Cops*, VICE (Feb. 7, 2019), <https://www.vice.com/en/article/qvyvzd/amazons-home-security-company-is-turning-everyone-into-cops> [https://archive.ph/4LLhP].

²⁰² See *id.* A judge in England said that a homeowner’s use of a Ring camera to film a neighbor violated the General Data Protection Regulation. See Dan Milmo, *Amazon Asks Ring Owners to Respect Privacy After Court Rules Usage Broke Law*, THE GUARDIAN (Oct. 14, 2021), <https://www.theguardian.com/uk-news/2021/oct/14/amazon-asks-ring-owners-to-respect-privacy-after-court-rules-usage-broke-law> [https://archive.ph/ELenW].

²⁰³ Alfred Ng, *US Government Doesn’t Know How it Uses Facial Recognition in Public Housing*, CNET (June 22, 2020), <https://www.cnet.com/news/us-government-doesnt-know-how-it-uses-facial-recognition-in-public-housing/> [https://archive.ph/Wq81M]; Miller, *supra* note 187, at 105–06.

²⁰⁴ U.S. CONST. amend. IV.

protection because such privacy interests are not reasonable.²⁰⁵ Although the Supreme Court has recently given greater scrutiny to digital surveillance tools, the restraints on various forms of FRT remain murky and undefined.²⁰⁶ Accordingly, privacy advocates are turning to lawmakers to enact restraints. FRT is the form of Proptech that has attracted the most legislative reforms, largely due to its discriminatory outcomes and intrusive nature. At least nine jurisdictions in the U.S. have banned government uses of FRT, and several others have conditional bans that provide certain exceptions, such as for investigatory purposes.²⁰⁷ Proposals have been introduced in Congress to limit FRT in public housing, although none have passed. In some cities, proposed laws would prevent private landlords from making FRT mandatory for home access.²⁰⁸ Yet even if FRT is legally limited, tools such as video-enabled doorbells, automated license plate readers, surveillance cameras, and as-yet developed tools in the hands of landlords and neighbors will maintain a web of surveillance over private lives with disparate impacts on perceived outsiders. Surveillance technologies threaten the human rights to nondiscrimination and security of tenure, and law has not kept pace with this growing web.

E. SHORT-TERM RENTAL PLATFORMS

The internet enabled the rise of the “sharing economy,” including the short-term rental market, which in turn impacts the human rights to affordable and adequate housing and nondiscrimination. Short-term rental platforms include companies such as Airbnb, VRBO, and HomeAway. Airbnb is the largest, with over seven million listings in 220 countries.²⁰⁹ The platform matches “hosts” with “guests”—or short-term renters, usually tourists—and collects a percentage of the reservation fee.²¹⁰ Airbnb boasts that it “uniquely leverages technology to economically empower millions of people around the world to unlock and monetize their spaces,

²⁰⁵ Alexis Karteron, *When Stop and Frisk Comes Home: Policing Public and Patrolled Housing*, 69 CASE W. RESRV. L. REV. 669, 692 (2019).

²⁰⁶ Ferguson, *supra* note 189, at 1108.

²⁰⁷ RASHIDA RICHARDSON, THE GERMAN MARSHALL FUND OF THE U.S., FACIAL RECOGNITION IN THE PUBLIC SECTOR: THE POLICY LANDSCAPE 4 (2021), <https://www.jstor.org/stable/resrep28529> [<https://perma.cc/6XC7-TKZF>].

²⁰⁸ *Id.* at 4.

²⁰⁹ See Elaine Glusac, *The Future of Airbnb*, N.Y. TIMES (Nov. 16, 2020), <https://www.nytimes.com/2020/09/24/travel/airbnb-pandemic.html> [<https://archive.ph/tr80v>].

²¹⁰ *Id.*

passions and talents to become hospitality entrepreneurs.”²¹¹ Indeed, the platform has allowed some homeowners to supplement their income and increase the value of their properties. Airbnb can also have a positive economic effect on the local economy, as it draws travelers who spend money locally.²¹² However, Airbnb comes with costs to the human right to housing: namely, it is associated with a loss of affordable housing and discrimination against both guests and hosts who are members of protected classes.

The impacts of short-term rental platforms on affordable housing are well-documented. Studies show that Airbnb leads to a rise in the cost of long-term rentals in a community and, as absentee owners shift their properties to short-term rentals, a reduction in the amount of available long-term housing stock.²¹³ A study of New York City found that Airbnb is associated with a rise in average annual rents of almost \$400 and a removal of 7,000 to 13,500 housing units from the city’s long-term rental market.²¹⁴ These impacts are significant given that over one-third of households in the U.S. are rent-burdened, meaning they spend more than thirty percent of their income on rent.²¹⁵ These platforms also lead to displacement of long-term residents, as they are priced out of their homes, struggle to find affordable housing, or leave neighborhoods due to “changes at the neighborhood scale such as loss of social networks, stores, or public facilities that are central to everyday life.”²¹⁶

²¹¹ *About Us*, AIRBNB www.airbnb.com/about/about-us [https://perma.cc/WF8C-9G27].

²¹² *But see* JOSH BIVENS, ECON. POL’Y INST., THE ECONOMIC COSTS AND BENEFITS OF AIRBNB 1–2 (2019), <https://files.epi.org/pdf/157766.pdf> [https://perma.cc/EDB3-CWNC] (contending that these effects are overstated because people would still visit these locales and stay in a hotel).

²¹³ Keren Horn & Mark Merante, *Is Home Sharing Driving Up Rents? Evidence from Airbnb in Boston*, 38 J. HOUS. ECON. 14, 15 (2017), <https://doi.org/10.1016/j.jhe.2017.08.002>. (“Ultimately, our analysis supports the contention that home sharing is increasing rents by decreasing the supply of units available to potential residents.”).

²¹⁴ DAVID WACHSMUTH, DAVID CHANEY, DANIELLE KERRIGAN, ANDREA SHILLOLO & ROBIN BASALAEV-BINDER, URB. POL. & GOVERNANCE RSCH. GRP., MCGIL U., THE HIGH COST OF SHORT-TERM RENTALS IN NEW YORK CITY 2 (2018), <https://www.mcgill.ca/newsroom/files/newsroom/channels/attach/airbnb-report.pdf> [https://perma.cc/DW5Q-9Y7R]. *See also* Miquel-Àngel Garcia-Lopez, Jordi Jorfe-Monsey, Rodrigo Martínez Mazza & Mariona Segú, *Do Short-Term Rent Platforms Affect Housing Markets? Evidence from Airbnb in Barcelona* (Institut d’Economia de Barcelona, Working Paper, 2019), <https://doi.org/10.1016/j.jue.2020.103278>.

²¹⁵ JOINT CTR. FOR HOUS. STUD. OF HARV. UNIV., *supra* note 66 at 1.

²¹⁶ Allyson E. Gold, *Community Consequences of Airbnb*, 94 WASH. L.

While Airbnb touts its economic benefits to individual homeowners, the reality is that many hosts are professional investors who post numerous listings—in some jurisdictions, over forty percent of the Airbnb market is held by hosts with more than one listing.²¹⁷ For instance, in Louisiana, eleven percent of hosts, including many from outside the state, operated over forty-two percent of the city’s short-term rentals.²¹⁸ Similarly, in Los Angeles sixty-four percent of Airbnb listings are for units never occupied by their owners. These “whole unit” properties generate eighty-nine percent of Airbnb’s revenue for Los Angeles. Further, the economic benefits flow largely to higher-wealth and white households, who comprise a disproportionate share of homeowners in the U.S. and are more likely to own secondary properties.²¹⁹ As Allyson Gold summarizes, the evidence “supports the notion that Airbnb produces financial rewards for hosts at the expense of low-income communities of color; as residents are priced out of middle-class neighborhoods, residents relocate to down-market neighborhoods. This creates a vicious cycle wherein rents increase in the new neighborhoods, pushing out long-term residents.”²²⁰ At the same time, cities are losing lodging taxes from Airbnb, as the company and local jurisdictions fight over the nature and extent of Airbnb’s tax liabilities. One analysis estimated the losses to local governments from Airbnb’s refusal to pay local taxes at \$440 million.²²¹

Regulation of short-term rental platforms has taken many forms, as jurisdictions struggle to balance the platforms’ economic benefits with their harms and to ensure that host properties comply with local zoning and safety laws. Four categories of regulations have emerged:

- “(1) host accountability measures, such as zoning laws, licensing requirements, and tax structures;
- (2) restrictions on eligible hosts, length of rentals, and permissible locations;
- (3) responsibility and enforcement, including who bears the onus of compliance and

REV. 1577, 1602 (2019) (discussing Augustin Cocola Gant, *Holiday Rentals: The New Gentrification Battlefront*, 21 SOC. RSCH. ONLINE 1, 3 (2016)).

²¹⁷ Paris Martineau, *Inside Airbnb’s ‘Guerrilla War’ Against Local Governments*, WIRED (Mar. 20, 2019), <https://www.wired.com/story/inside-airbnbs-guerrilla-war-against-local-governments/> [<https://archive.ph/JEauk>].

²¹⁸ *Id.*

²¹⁹ BIVENS, *supra* note 212, at 3.

²²⁰ Gold, *supra* note 216, at 160–03.

²²¹ See BIVENS, *supra* note 212, at 17.

who is liable for failure to comply; and
(4) policies to address discrimination and diffuse the concentration of wealth along racial lines.”²²²

However, these fragmented and limited approaches have not curtailed the harms to neighborhoods and individual housing needs.²²³ Even when regulations are enacted, the business model remains robust.²²⁴ Nevertheless, Airbnb has aggressively fought, and even sued over, local ordinances requiring the company to collect taxes, remove illegal listings, and/or provide data about hosts and visits.²²⁵ Housing experts thus propose a variety of reforms to rein in the harm caused by the short-term rental industry, such as imposing greater obligations on commercial owners, limiting the concentration of short-term rentals within particular neighborhoods, requiring platforms to gather and report data, and enforcing existing laws more robustly.²²⁶

Law reform may also be needed to eliminate racial and other forms of discrimination on these platforms. A 2015 Harvard Business School Study found that guests with distinctly Black names were sixteen percent less likely to be accepted by a host than guests with white-sounding names.²²⁷ An online movement employing the hashtag #AirbnbWhileBlack, led to at least one lawsuit against Airbnb.²²⁸ Studies have also found evidence of host discrimination

²²² Gold, *supra* note 216, at 1583.

²²³ *Id.* at 1582–83; *see also* Shirley Nieuwland & Rianne van Melik, *Regulating Airbnb: How Cities Deal with Perceived Negative Externalities of Short-Term Rentals*, 23 CURRENT ISSUES TOURISM 811 (2020).

²²⁴ Dorine von Briel & Sara Dolnicar, *The Evolution of Airbnb Regulation: An International Longitudinal Investigation 2008-2020*, 87 ANNALS TOURISM RSCH. 102,983 (2021), <https://doi.org/10.1016/j.annals.2020.102983>.

²²⁵ Martineau, *supra* note 217.

²²⁶ Jake Wegmann & Junfeng Jiao, *Taming Aribnb: Toward Guiding Principles for Local Regulation of Urban Vacation Rentals Based on Empirical Results from Five US Cities*, 69 LAND USE POL’Y 494, 500–01 (2017), https://casci.umd.edu/wp-content/uploads/2019/09/Taming-Airbnb-Toward-guiding-principles-for-local-regulation-o_2017_Land-Us.pdf [<https://perma.cc/77UX-5NBA>].

²²⁷ Benjamin Edelman, Michael Luca & Dan Svirsky, *Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment*, 9 Am. Econ. J.: Applied Econ. 1, 2 (2017).

²²⁸ *See* Allison K. Bethel, *A New Home for Haters-Online Home Sharing Platforms: A Look at the Applicability of the Fair Housing Act to Home Shares*, 53 U. RICH. L. REV. 903, 907–08 (2019) (“One study found that racial disparities disappeared when there were reviews of guests

against same-sex couples,²²⁹ disabled people,²³⁰ and guests with Arabic-sounding names.²³¹ In addition, there is evidence of discrimination running the other way.²³² Guests will pay non-Black hosts twelve percent more than Black hosts for comparable properties.²³³ Moreover, although minority hosts charge less for listings, they face lower demand.²³⁴ In turn, this reduces the economic benefits of short-term rental hosting to minorities and exacerbates the racial wealth gap.²³⁵

In response to findings of discrimination on its platform, Airbnb has announced measures such as offering optional bias training for hosts and eliminating the display of guest photos before bookings. Meanwhile, the legal liability of Airbnb or individual hosts using the platform is murky. Suffice to say, the drafters of 1960s-era civil rights laws did not foresee the rise of online platforms, which do not fit neatly within pre-existing categories of antidiscrimination law.²³⁶ As one commentator explains, “Airbnb users find themselves in a soft spot of the law: somewhere between the commercial sphere, where discrimination is strictly prohibited, and the intimate-relationship sphere, where discrimination, even if socially reviled, is

available to hosts, thus suggesting statistical discrimination and not taste-based discrimination was at play.”).

²²⁹ Rishi Ahuja & Ronan C. Lyons, *The Silent Treatment: LGBT Discrimination in the Sharing Economy*, 71 OXFORD ECON. PAPERS 564 (2017), <https://www.tcd.ie/Economics/TEP/2017/tep1917.pdf>. [<https://perma.cc/H65E-KRZD>].

²³⁰ Mason Ameri & Douglas L. Kruse, *Study Shows How Airbnb Hosts Discriminate Against Guests with Disabilities as Sharing Economy Remains in ADA Gray Area*, THE CONVERSATION (May 12, 2020), <https://theconversation.com/study-shows-how-airbnb-hosts-discriminate-against-guests-with-disabilities-as-sharing-economy-remains-in-ada-gray-area-127416> [<https://perma.cc/R3PD-MWCV>].

²³¹ Max H. Bazerman & Michael Luca, *What Data Experiments Tell Us About Racial Discrimination on Airbnb*, FAST CO. (June 19, 2020), <https://www.fastcompany.com/90460723/airbnbwhileblack-the-inside-story-of-airbnbs-racism-problem> [<https://perma.cc/WE3M-B8FP>].

²³² See Allyson E. Gold, *Redliking: When Redlining Goes Online*, 62 WM. & MARY L. REV. 1841, 1846 (2021).

²³³ Katherine T. Bartlett & Mitu Gulati, *Discrimination by Customers*, 102 IOWA L. REV. 223, 224 (2016).

²³⁴ Anya Marchenko, *The Impact of Host Race and Gender on Prices on Airbnb*, 46 J. HOUS. ECON. 101,635 (2019).

²³⁵ Gold, *supra* note 231, at 1846–48.

²³⁶ See also Nancy Leong & Aaron Belzer, *The New Public Accommodations: Race Discrimination in the Platform Economy*, 105 GEO. L.J. 1271, 1276 (2017) (“[L]aws governing activities in the physical world do not always apply identically to activities initiated in cyberspace.”).

beyond governmental reach.”²³⁷

Further, the platforms successfully claim insulation from liability under Section 230 of the Communications Decency Act, a U.S. law that, with some exceptions, limits the responsibility of platforms for the actions that third parties take on their websites.²³⁸ Accordingly, civil rights advocates are urging legislators at all levels of government to expressly include digital platforms within laws that prohibit discrimination by public accommodations, which traditionally are physical spaces that serve the public, such as restaurants and hotels.²³⁹ In short, the liability and legal status of short-term rental platforms remains in flux and wrangling over law reform continues. In the meantime, the human rights to nondiscrimination in housing and housing affordability hang in the balance.

III. BIG DATA RESISTANCE

Although big data fuels Proptech, it can also be a technocratic tool for improving housing policies as well as a resource for resisting Proptech’s harmful impacts. For policymakers and advocates, quality data can help identify community housing needs, patterns of segregation, and interactions between housing and other factors related to standards of living and economic opportunity, such as education, health, and crime.²⁴⁰ Nestor Davidson explains that new data tools are shifting the emphasis in affordable housing from outputs to outcomes. That is, measuring not simply the numbers of units built and people served, but also “measures such as income, educational achievement, physical and mental health, and even

²³⁷ Michael Todisco, *Share and Share Alike? Considering Racial Discrimination in the Nascent Room-Sharing Economy*, 67 STAN. L. REV. ONLINE 121, 123 (2015).

²³⁸ 47 U.S.C. § 230 (2012). The statute provides: “No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider.” *Id.* § 230(c)(1).

²³⁹ DAVID BRODY & SEAN BICKFORD, LAWS.’ COMM. FOR C.R. UNDER L., DISCRIMINATORY DENIAL OF SERVICES: APPLYING STATE PUBLIC ACCOMMODATIONS LAWS TO ONLINE COMMERCE 2 (2020), <https://lawyerscommittee.org/wp-content/uploads/2019/12/Online-Public-Accommodations-Report.pdf> [<https://perma.cc/STW4-UZDN>].

²⁴⁰ LEAH HENDEY & MYCHAL COHEN, URB. INST., USING DATA TO ASSESS FAIR HOUSING AND IMPROVE ACCESS TO OPPORTUNITY: A GUIDEBOOK FOR COMMUNITY ORGANIZATIONS (2017), http://www.urban.org/sites/default/files/publication/92446/using_data_to_assess_fair_housing_and_improve_access_to_opportunity_0.pdf [<https://perma.cc/W44F-VY2>].

subjective wellbeing.”²⁴¹ Data analysis can help planners and managers determine where to locate new housing, oversee housing portfolios and individual properties, and better serve residents.²⁴² In addition, information sharing can help stakeholders “coordinate across silos” and integrate operations across federal, state and local levels.²⁴³

Among community organizers, data is fueling a powerful resistance to PropTech and exploitative landlord practices. For instance, in New York, the Housing Data Coalition uses publicly available data to help tenants identify their landlords,²⁴⁴ who often hide behind obscure and difficult-to-trace corporate forms that make it difficult to obtain repairs or a return of a security deposit. Tenants can also use the Coalition’s website to automatically generate repair requests and obtain their apartments’ rental histories for the purpose of determining whether they live in rent stabilized units. The website provides further tools to monitor active eviction cases and filing rates by zip code, track buildings applying to make major capital improvements (a possible indicator of future displacement), and monitor housing violations. Similarly, the Anti-Eviction Mapping Project works with community partners such as housing advocacy organizations and legal aid groups in the San Francisco Bay Area to counter resident displacement through data visualization and map-making, as well as through an oral history project that collects and puts online the stories of tenants facing, and sometimes overcoming, eviction.²⁴⁵ Other housing justice collectives are using online, data-based tools throughout the U.S. and the world, from Berlin²⁴⁶ to

²⁴¹ Nestor M. Davidson, *Affordable Housing Law and Policy in an Era of Big Data*, 44 *FORDHAM URB. L.J.* 277, 278 (2017).

²⁴² *Id.* at 293–95.

²⁴³ *Id.* at 295.

²⁴⁴ See HOUSING DATA COALITION, <https://www.housingdatanyc.org/>. [<https://perma.cc/RRE9-444C>] (click “Resource Gallery” in top ribbon; then click “Landlord Lookup Tool”).

²⁴⁵ ANTI-EVICTION MAPPING PROJECT, *AEMP HANDBOOK BY THE ANTI-EVICTION MAPPING PROJECT 289, 290* (Moshoula Capous-Desyllas & Karen Morgaine, eds. 2018), <https://static1.squarespace.com/static/52b7d7a6e4b0b3e376ac8ea2/t/5bc76571b208fc10defc815a/1539794295823/AEMP+Handbook.pdf>. [<https://perma.cc/SMD7-WVKQ>].

²⁴⁶ WEM GEHORT BERLIN?, <https://interaktiv.tagesspiegel.de/wem-gehoert-berlin/> [<https://perma.cc/2WAE-S68S>].

Delhi²⁴⁷ and beyond.²⁴⁸ “With more data about ownership, tenants can connect across cities and buildings to organize collectively against companies in the same ownership network.”²⁴⁹ Some of these tools not only focus on specific landlords, but also “map *networks* of financial speculators and evictors.”²⁵⁰ Further flipping the script, Landlord Tech Watch gathers crowdsourced reports across the country to identify landlords that are deploying privacy-violating technologies in their buildings, such as facial recognition cameras, digital doormen, smartphone apps for rent payment and building access, and short-term rentals.²⁵¹

Tech innovation is also being used to map vacant properties and hold absentee owners accountable. Vacant and abandoned properties are a major problem in many American cities. They lead to increased rates of crime, declining property values, health and safety issues due to environmental hazards, and neighborhood disinvestment.²⁵² To tackle this problem, housing activists in Baltimore began putting QR codes on vacant and abandoned buildings that citizens could scan to find information about the buildings’ owners.²⁵³ Now, the city government provides the same service, linking the QR codes to an additional array of public records, including pending court cases and building permits. In Detroit, a tech startup hired 200 residents to visit the city’s entire housing stock to conduct a property census that was

²⁴⁷ Rina Chandran, *Indian Website Records Slum Lives, Evictions to Tackle Housing Crisis*, REUTERS (Apr. 23, 2021), <https://www.reuters.com/article/us-india-landrights-archive/indian-website-records-slum-lives-evictions-to-tackle-housing-crisis-idUSKBN2CA0P6> [<https://perma.cc/BCX2-JZN3>].

²⁴⁸ Erin McElroy, Meredith Whittaker & Genevieve Fried, *COVID-19 Crisis Capitalism Comes to Real Estate*, BOS. REV. (May 7, 2020), <https://bostonreview.net/articles/erin-mcelroy-meredith-whittaker-genevieve-fried-covid-19-and-tech/> [<https://perma.cc/TQ87-WUJL>].

²⁴⁹ *Id.*

²⁵⁰ Interview with Erin McElroy & Aza Amir-Ghassemi, *Evictor Structures: Erin McElroy and Aza Amir-Ghassemi on Fighting Displacement*, LOGIC(S) (Dec. 20, 2020), <https://logicmag.io/commons/evictor-structures-erin-mcelroy-and-azad-amir-ghassemi-on-fighting/> [<https://perma.cc/KRQ5-LLQN>].

²⁵¹ ANTI-EVICTION MAPPING PROJECT, LANDLORD TECH WATCH, <https://antievictionmappingproject.github.io/landlordtech/> [<https://perma.cc/ZEH2-VCJB>].

²⁵² Lavea Brachman, *Vacant and Abandoned Property*, LINCOLN INST. OF LAND POL’Y (Oct. 1, 2005), <https://www.lincolninst.edu/publications/articles/vacant-abandoned-property> [<https://perma.cc/LG3R-JWRK>].

²⁵³ Ethan McLeod, *The Tech That Slumlords Hate*, BLOOMBERG (Oct. 7, 2021), <https://www.bloomberg.com/news/articles/2021-10-07/tenants-use-new-technology-to-combat-evictions> [<https://perma.cc/CR34-N7E2>].

then made available through an online database.²⁵⁴ The city was able to use the data from the Motor City Mapping project to obtain federal resources to support underwater homeowners.²⁵⁵ As these grassroots efforts demonstrate, data is not neutral: rather, it is deeply contextual.

These movements share the ethos of design justice, described by Sasha Costanza-Chock as “a framework for analysis of how design distributes benefits and burdens between various groups of people.”²⁵⁶ As this Article shows, Proptech systems are designed to reward owners of capital and disadvantage renters and borrowers. By contrast, design justice practitioners aim to level the playing field²⁵⁷ through “the full inclusion of, accountability, to, and control by people with direct lived experience of the conditions designers claim they are trying to change.”²⁵⁸ The housing activists using data and technology to counter Proptech are taking back some control over real estate markets by centering the experiences of impacted people. They are deploying data against its most exploitative practices and, in so doing, advancing human rights to housing. To be sure, these movements are up against massive amounts of capital which are deeply entrenched in political power structures. However, these movements provide a template for data-based human rights advocacy led by the people most impacted by Proptech. Litigation and law reform for housing justice should take its lead from these grassroots movements.

CONCLUSION

The UN Special Rapporteur warns that “[h]ousing has become a key driver of growing socioeconomic inequality, increasing wealth for those who own housing and driving those who do not into greater debt and poverty.”²⁵⁹ Proptech systems of tenant screening, mortgage lending, home surveillance technologies, platform advertising, and short-term rental systems are “black boxes” that lack transparency or external accountability. They undermine the human right to housing, and the outcomes are often discriminatory to people of color and

²⁵⁴ *Id.*

²⁵⁵ *Id.*

²⁵⁶ SASHA CONSTANZA-CHOCK, DESIGN JUSTICE: COMMUNITY-LED PRACTICES TO BUILD THE WORLDS WE NEED 23 (Sandra Braman ed., 2020) (available at http://direct.mit.edu/books/oa-monograph-pdf/2248508/book_9780262356862.pdf).

²⁵⁷ *Id.* at 23.

²⁵⁸ *Id.* at 25. Costanza-Chock describes a media project in which MIT design students worked collaboratively with a housing rights organization called City Life/Vida Urbana to educate Boston area residents about inequality in local housing markets. *Id.* at 174–76.

²⁵⁹ Farha, *supra* note 1, at ¶ 4.

low-income people. To fulfill the human right to adequate housing, we need to open these black boxes, assess and audit their impacts, and develop innovative regulatory and litigation strategies to ensure that Proptech enhances rather than reduces housing opportunities.