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January 15, 2022

To: Suresh Venkatasubramanian
      White House Office of Science and Technology
      Executive Office of the President
      1650 Pennsylvania Avenue NW
      Washington, DC 20504

Re: RFI Response: Biometric Technologies, Document Number 2021-21975

I.   Introduction

The Center for Democracy & Technology (CDT) welcomes the opportunity to submit comments to the White House Office of Science and Technology (OSTP) on public and private sector uses of biometric technologies. CDT is a nonprofit, nonpartisan 501(c)(3) organization that advocates for civil rights and civil liberties in the digital age. CDT works on many issues involving the use of biometric data in a range of contexts from law enforcement to hiring. In these comments, we focus on the impact of the use of biometric data on disabled people.

Like other forms of marginalization, ableism is systemic.[1] Most social spheres have historically been structured to primarily, if not exclusively, serve people who appear, communicate, move, think, and behave in certain ways, and who share similar baseline needs that must be met in order for them to fully participate in society. Many health conditions become disabilities because they affect people's needs, ability to conform to these norms, and interactions with existing social structures. The technologies utilized in these social spheres can reflect this ableism for multiple reasons, including: flawed and unrepresentative training data can result in inaccurate and biased outcomes; the technologies' purpose, use, and design may be based on implicit or explicit judgments about the inherent value of disabled people; or disability issues may simply be overlooked when designing and deploying the technologies.[2]

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[1] HENRY CLAYPOOL ET AL., AM. ASS'N OF PEOPLE WITH DISABILITIES AND CTR. FOR DEMOCRACY & TECH., CENTERING DISABILITY IN TECHNOLOGY POLICY: ISSUE LANDSCAPE AND POTENTIAL OPPORTUNITIES FOR ACTION 30 (2021), https://cdt.org/wp-content/uploads/2021/12/centering-disability-120821-1326-final.pdf.

[2] Ctr. for Democracy & Tech. et al., Comments to the United Nations Special Rapporteur on the Rights of Persons with Disabilities' Report on Artificial Intelligence, https://cdt.org/wp-content/uploads/2021/11/Comments-to-UN-SR-for-Disability-Report-on-Artificial-Intelligence.pdf.

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When biometric technologies are poorly trained and unsuitable for the services for which they are utilized, they make disabled people, especially multiply-marginalized disabled people, more vulnerable to algorithmic discrimination. As with other AI systems, biometrics are developed using datasets that are supposed to train them to accurately evaluate people in the real world. Training datasets can be derived from various sources, including historic data, voluntary survey responses and research participation, and publicly available data. If training data misrepresents or excludes marginalized groups or intersections of these groups, this can skew the outcomes of technologies trained on this data. Even when biometrics are trained and designed to improve accuracy, they may rely on stereotypes about marginalized groups that correlate with seemingly neutral decision-making criteria. To make matters worse, data collected through these technologies may be shared with third parties or otherwise utilized for purposes unrelated to a person's intended engagement with the technologies, creating privacy risks for affected people.

In the remainder of these comments, we discuss several examples that illustrate how biometric technologies used to verify identity and to infer cognitive, physical, and emotional states can reproduce and further entrench disparities for disabled people.

II.   Diagnostics and health care management

Biometric data analysis can be helpful in health care because without documented diagnosis, healthcare providers, insurers, employers, academic institutions, and other entities limit or deny access to accommodations and supports that help disabled people meet their needs. However, biases in health care technologies can limit access to accommodations and supports, and ultimately to critical life opportunities and better quality of life.

For example, medical professionals use facial analysis to diagnose a range of conditions, including in people who are nonverbal and have difficulty articulating pain.[3] Automated facial analysis can be an unreliable diagnostic tool for multiply-marginalized disabled people as it has been shown to produce higher rates of error for darker skin tones and along gender lines.[4] One study also found that image-based diagnostic algorithms are disproportionately trained on data from only three states – California, New York, and Massachusetts – which all report lower rates

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[3] Kristina Grifantini, *Detecting Faces, Saving Lives: How Facial Recognition Software is Changing Health Care*, IEEE PULSE (May 13, 2020), https://www.embs.org/pulse/articles/detecting-faces-saving-lives/.

[4] *See* JOY BUOLAMWINI & TIMNIT GEBRU, GENDER SHADES: INTERSECTIONAL ACCURACY DISPARITIES IN COMMERCIAL GENDER CLASSIFICATION, 81 PROCEEDINGS OF MACHINE LEARNING RESEARCH 2 (2018), http://proceedings.mlr.press/v81/buolamwini18a/buolamwini18a.pdf.

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of disability than the national average.[5] Recognizing these sources of bias, researchers have developed facial analysis tools that are trained to work on more diverse populations, but they caution that these technologies should be only part of the clinical evaluation process.[6]

Biometric and other data-driven technologies also apply traditional diagnostic standards, without accounting for additional information and context that might better inform human-driven evaluation. Diagnostic standards are based on presumptions about how and among whom certain medical conditions present, influencing datasets derived from people who have had access to diagnosis and treatment.[7] For example, facial analysis has been used to diagnose autism by analyzing facial expressions and repetitive behaviors, but these attributes tend to be evaluated relative to how they present in a white autistic person assigned male at birth and identifying as masculine.[8] Attributes related to neurodivergence vary considerably because racial and gender norms cause other forms of marginalization to affect how the same disabilities present, are perceived, and are masked. Therefore, people of color, transgender and gender nonconforming people, and girls and women are less likely to receive accurate diagnoses particularly for cognitive and mental health disabilities, and that would also be true of biometric technologies trained on data that embeds these biases. Accurate facial and behavioral analysis of one type and presentation of disability may also vary due to other disabilities – disabilities that affect facial features, bone structure, or mobility might impact whether a cognitive or mental health disability is accurately diagnosed.[9]

The use of biometric data in health also presents privacy risks. On the one hand, such data can help people manage their health independent of health care providers, and it is increasingly being used for that purpose. Consumers have turned to commercial sleep and fitness trackers that analyze heart rate, body temperature, movement, voice tone and talking during sleep.[10]

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[5] AMIT KAUSHAL ET AL., GEORGRAPHIC DISTRIBUTION OF US COHORTS USED TO TRAIN DEEP LEARNING ALGORITHMS, 324 J. AM. MED. ASS'N 1212 (2020), https://jamanetwork.com/journals/jama/fullarticle/2770833; WILLIAM ERICKSON ET AL., CORNELL U. YANG-TAN INST. ON EMP. & DISABILITY, 2018 DISABILITY STATUS REPORT: UNITED STATES 7-8 (2020), https://www.disabilitystatistics.org/StatusReports/2018-PDF/2018-StatusReport_US.pdf.

[6] Grifantini, *supra* note 3.

[7] *See* CYNTHIA BENNETT AND OS KEYES, WHAT IS THE POINT OF FAIRNESS? DISABILITY, AI, AND THE COMPLEXITY OF JUSTICE, 27 ACM SIGACCESS ACCESSIBILITY AND COMPUTING 2-3 (2019), https://arxiv.org/pdf/1908.01024.pdf; Daniel Young, *Black, Disabled, and Uncounted*, NAT'L HEALTH LAW PROGRAM (Aug. 7, 2020), https://healthlaw.org/black-disabled-and-uncounted/.

[8] BENNETT, *supra* note 7.

[9] *See* Sheri Byrne-Haber, *Disability and AI Bias*, MEDIUM (July 11, 2019), https://sheribyrnehaber.medium.com/disability-and-ai-bias-cced271bd533.

[10] Victoria Song, *Amazon Halo View Review: The Fitbit Clone No One Asked For*, THE VERGE (Dec. 15, 2021, 8:00 AM), https://www.theverge.com/22834452/amazon-halo-view-review-fitness-trackers.

People are also relying on mental health apps that collect users' self-reported entries.[11] But much of the biometric data collected and processed by these trackers, apps, and other products is highly sensitive and can allow cognitive or mental health disabilities to be inferred. In many cases HIPAA does not apply to these products, and in the absence of applicable privacy rules, such data may be used for unrelated purposes or shared with third parties who can repurpose this data for marketing or combine it with other data to re-identify users.[12]

III.   Public benefits, assistive technology, and IoT devices

Benefits. Biometric data is used to verify identity information for fraud detection for unemployment insurance and other types of public benefits. Systems that rely on facial recognition to verify applicants' identities have proven challenging to use,[13] a problem which can be exacerbated for disabled users. For instance, facial recognition systems often employ a "liveness test" to ensure that the system is not matching against a photo or a mask. Liveness tests that rely on nodding at or making "eye contact" with the camera can be impossible for blind users to complete without assistance, further raising the barriers to critical social supports for disabled people.[14]

Other algorithmic systems calculate the hours of home- and community-based services (HCBS) a disabled person needs or the budget to cover that care,[15] which can then be subject to biometrics. Electronic visit verification (EVV) is used to detect fraud, waste, and abuse in the provision of HCBS benefits.[16] In many EVV systems, the home care worker or the benefits recipient must call into the system within a set window of time to verify through facial recognition or biometric voice authentication that the approved worker is providing the hours

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[11] Andrew Crawford, *Protecting Health Data – CDT and eHI Release Consumer Privacy Framework for Health Data*, CTR. FOR DEMOCRACY & TECH. (Feb. 9, 2021), https://cdt.org/insights/protecting-health-data-cdt-and-ehi-release-consumer-privacy-framework-for-health-data/.

[12] *Id.*

[13] *See* Hannah Quay-de la Vallee, *Combatting Identify Fraud in Government Benefits Programs: Government Agencies Tackling Identity Fraud Should Look to Cybersecurity Methods, Avoid AI-Driven Approaches that Can Penalize Real Applicants*, CTR. FOR DEMOCRACY & TECH. (Jan. 7, 2022), https://cdt.org/insights/combatting-identify-fraud-in-government-benefits-programs-government-agencies-tackling-identity-fraud-should-look-to-cybersecurity-methods-avoid-ai-driven-approaches-that-can-penalize-real-applicant/.

[14] Jonathan Keane, *Facial Recognition Apps Are Leaving Blind People Behind,* VICE (March 22, 2016), https://www.vice.com/en/article/ezpzzp/facial-recognition-apps-are-leaving-blind-people-behind

[15] LYDIA X.Z. BROWN ET AL, CTR. FOR DEMOCRACY & TECH., CHALLENGING THE USE OF ALGORITHM-DRIVEN DECISION-MAKING IN BENEFITS DETERMINATIONS AFFECTING PEOPLE WITH DISABILITIES (2020), https://cdt.org/insights/report-challenging-the-use-of-algorithm-driven-decision-making-in-benefits-determinations-affecting-people-with-disabilities/.

[16] ALEXANDRA MATEESCU, DATA & SOCIETY, ELECTRONIC VISIT VERIFICATION: THE WEIGHT OF SURVEILLANCE AND THE FRACTURING OF CARE 15-16 (2021), https://datasociety.net/wp-content/uploads/2021/11/EVV_REPORT_11162021.pdf.

of approved services to the approved recipient.[17] People whose disabilities affect their verbal communication and ability to make calls or stay still to capture a facial image may not be able to successfully use this system, requiring workers to turn to an alternate web-based system that can be burdensome to navigate.[18] If home care visits cannot be verified, home care workers are underpaid for their labor.[19] All the while, EVV systems are collecting and storing voice and other data beyond what is legally mandated.[20] By undermining access to public benefits, these systems can affect disabled people's ability to live independently.

Assistive Tech/Internet of Things (IoT). Systemic barriers to independent living make it all the more necessary for disabled people to be able to use assistive technology and IoT devices, many of which use biometric data that can enable inferences about cognitive or emotional states. Assistive technologies include automated captioning and speech-to-text services that use voice data, and video chat platforms that capture facial imagery. IoT devices are used in homes and automobiles to control lights and other personal devices, appliances, and security systems through voice recognition and iris and fingerprint scans.[21] These technologies can allow disabled people to depend less on others to live in, manage, and navigate their environments.[22]

However, greater reliance and integration of these biometric technologies into disabled people's day-to-day lives comes with greater risk of data exposure and misuse. Several commercial products involve access for other authorized users, data sharing between interconnected devices subject to different companies' data policies, cloud data storage that might be vulnerable to data breaches, and data sharing with advertising partners.[23] Disabled consumers' biometric data can be further misappropriated due to security lapses: hackers accessed Amazon Ring's smart cameras – ironically, used for home security – in multiple incidents of harassment and abuse that have left people afraid to live alone.[24]

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[17] *Id.* at 54; JACQUELINE MILLER, ET AL., UNIVERSITY OF CAL. SAN FRANCISCO HEALTH WORKFORCE RESEARCH CTR. ON LONG-TERM CARE, IMPACT OF ELECTRONIC VISIT VERIFICATION (EVV) ON PERSONAL CARE SERVICES WORKERS AND CONSUMERS IN THE UNITED STATES 5 (2021), https://healthworkforce.ucsf.edu/sites/healthworkforce.ucsf.edu/files/EVV_Report_210722.pdf.

[18] *See* MILLER, *supra* note 15, at 11; MATEESCU, *supra* note 14, at 54.

[19] MILLER, *supra* note 15, at 15; MATEESCU, *supra* note 14, at 17.

[20] MILLER, *supra* note 15, at 6; MATEESCU, *supra* note 14, at 8.

[21] CLAYPOOL, *supra* note 1, at 41.

[22] *Id.* at 40.

[23] LAUREN SMITH, ET AL., FUTURE OF PRIVACY FORUM, THE INTERNET OF THINGS (IOT) AND PEOPLE WITH DISABILITIES: EXPLORING THE BENEFITS, CHALLENGES, AND PRIVACY TENSIONS 10-14 (2019), https://fpf.org/wp-content/uploads/2019/01/2019_01_29-The_Internet_of_Things_and_Persons_with_Disabilities_For_Print_FINAL.pdf.

[24] Kari Paul, *Dozens Sue Amazon's Ring After Camera Hack Leads to Threats and Racial Slurs*, THE GUARDIAN (Dec. 3, 2020, 4:40 pm),

When forced to choose between getting the benefits of these technologies or avoiding privacy risks, disabled people and other marginalized communities cannot afford to prioritize privacy protection over the benefits they need.[25] They should not have to choose – policy reforms must prevent privacy harms and educate disabled consumers and commercial entities about these risks, while ensuring that policies do not undermine disabled people's access to these benefits.

IV.   Hiring technologies

Today's hiring processes incorporate biometric data that can directly indicate cognitive and emotional states, which particularly disadvantage disabled workers already subject to employment barriers. Hiring technologies evaluate this data purportedly to gauge a candidate's suitability for the job position in question, but the inferences drawn are often less relevant to job success and instead relevant to disability.[26] Certain tools analyze candidates' responses to questions about how they feel, or their selection of images with which they identify, to measure personality traits such as optimism, conscientiousness, or "emotional stability."[27] Recorded video interview tools use facial and voice analysis that captures a candidate's speech patterns and tone, gestures and limb movements, facial expressions, and eye contact to assess their enthusiasm, assertiveness, extroversion, trustworthiness, and other traits.[28] Gamified testing analyzes candidates' keystrokes and clicks while they play a set of games, purportedly measuring personality traits as well as cognitive skills and aptitudes such as response time, ability to adapt and learn from mistakes, attention span, and performance under pressure.[29]

Personality traits measured with these tools are not always relevant to essential job functions, and they are often subject to interpretation. For instance, whether a candidate is perceived as "optimistic" depends on how the trait is depicted and labeled as such in the tool's training data. The training data might only reflect stereotypes about the facial expressions or vocal tone

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https://www.theguardian.com/technology/2020/dec/23/amazon-ring-camera-hack-lawsuit-threats.

[25] *See* CLAYPOOL, *supra* note 1, at 40.

[26] CTR. FOR DEMOCRACY & TECH., ALGORITHM-DRIVEN HIRING TOOLS: INNOVATIVE RECRUITMENT OR EXPEDITED DISABILITY DISCRIMINATION? 11-12 (2020), https://cdt.org/wp-content/uploads/2020/12/Full-Text-Algorithm-driven-Hiring-Tools-Innovative-Recruitment-or-Expedited-Disability-Discrimination.pdf [hereinafter "ALGORITHM-DRIVEN HIRING TOOLS"].

[27] *Id.* at 6, 8; *Hearing on Algorithms and Bias Before the Cal. Dep't of Fair Employment and Hous.*, (Apr. 30, 2021) (testimony of Lydia X.Z. Brown), https://cdt.org/wp-content/uploads/2021/04/California-Fair-Employment-Housing-Council-Public-Hearing-Lydia-X.-Z.-Brown-statement-30.Apr_.2021.pdf [hereinafter "Testimony of Lydia X.Z. Brown"].

[28] *Id.*

[29] ALGORITHM-DRIVEN HIRING TOOLS, *supra* note 27, at 6, 8-9.

associated with that trait, and candidates might not conform to these stereotypes due to their disability.[30] Personality traits do not present similarly for every candidate, especially those with cognitive and mental health disabilities or disabilities that affect their facial appearance, voice, and speech.[31] Further, even when certain tested traits and aptitudes are relevant to essential job functions, the tools' methods of analyzing the collected data may not accurately demonstrate how disabled candidates would exhibit the necessary skills, aptitudes, or ability when performing essential job functions.[32] As a result, the processing of biometric and other data might contribute to the hiring disparities that disabled candidates already experience.

V.   Surveillance technology

In addition to misuse of biometric technologies in deciding whether to affirmatively provide opportunities to disabled people across the areas discussed above, biometric data has also allowed entities to monitor disabled people in ways that effectively punish disabled people for their disability status. Such harmful uses of biometric data are especially prevalent in the education system and the workplace, and they have served to criminalize disabled people.

School and work environments. Academic institutions utilize facial recognition systems, as well as "aggression detectors" that are supposed to infer stress and anger from loud, high-pitched, and strained voices without analyzing the meaning of what is said.[33] These tools aim to promote student safety by monitoring students' behavior, detecting screams or other audible signs of stress, or verifying whether people captured on camera are authorized to be on campus.[34] During the pandemic, academic institutions began using remote proctoring software that monitors movements, sounds, keystrokes, and eye contact to flag suspicious behavior.[35]

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[30] *See* Lydia X.Z. Brown, *How Opaque Personality Tests Can Stop Disabled People*, CTR. FOR DEMOCRACY & TECH. (Jan. 6, 2021), https://cdt.org/insights/how-opaque-personality-tests-can-stop-disabled-people-from-getting-hired/.

[31] *See* ALGORITHM-DRIVEN HIRING TOOLS, *supra* note 27, at 14.

[32] *See* Ctr. for Democracy & Tech., *CDT Leads Letter to New York City Council on Pending Automated Employment Tools Bill* (Feb. 25, 2021), https://cdt.org/insights/cdt-leads-letter-to-new-york-city-council-on-pending-automated-employment-tools-bill/.

[33] Alfred Ng, *Facial Recognition in Schools: Even Supporters Say It Won't Stop Shootings*, CNET (Jan. 24, 2020), https://www.cnet.com/features/facial-recognition-in-schools-even-supporters-say-it-wont-stop-shootings; Jack Gillum and Jeff Kao, *Aggression Detectors: The Unproven, Invasive Surveillance Technology Schools Are Using to Monitor Students*, PROPUBLICA (Jun. 25, 2019), https://features.propublica.org/aggression-detector/the-unproven-invasive-surveillance-technology-schools-are-using-to-monitor-students/.

[34] *Id.*

[35] Lydia X.Z. Brown, *How Automated Test Proctoring Software Discriminates Against Students with Disabilities*, CTR. FOR DEMOCRACY & TECH. (2020), https://cdt.org/insights/how-automated-test-proctoring-software-discriminates-against-disabled-students/.

Because facial analysis has proven inaccurate particularly for dark-skinned women, and the tracked behaviors are often affected by disability rather than mal-intent, these technologies will target students of color, disabled students, and transgender and gender nonconforming students most frequently.[36]

Some of these biometric data practices also occur in the workplace through what is commonly referred to as bossware, used to gauge workers' performance and productivity.[37] Some bossware tools use speech analysis of workers' interactions with customers to measure workers' perceived empathy and other emotional characteristics.[38] Other tools track workers' movement data and keyboard and mouse interactions (which may not seem obviously biometric but which can vary substantially in speed and pattern based on physical or cognitive disability) to determine their productivity, and certain applications also collect health data to administer wellness programs.[39] Similar to the hiring context, these tools are trained on and function on the premise that only workers who behave, work, and communicate a certain way can perform their job functions as employers require. By using measures of performance or productivity that vary based on disability, these tools may make disabled people more prone to adverse decisions related to compensation, promotion, and disciplinary actions.[40]

Criminalization. As OSTP and advocates alike recognize, the harms stemming from the inaccuracies in and improper uses of facial recognition can be most acute in the law enforcement context. Law enforcement use of facial recognition has enabled targeting of Black and brown people, leading to wrongful arrests and detention.[41] Such use of facial analysis

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[36] *See* Ctr. for Democracy & Tech., Comments to Office of Civil Rights, Dept. of Ed. on Protecting Privacy Rights and Ensuring Equitable Algorithmic Systems for Students of Color and Students with Disabilities, at 3 (Jul. 23, 2021), https://cdt.org/wp-content/uploads/2021/07/2021-07-23-CDT-Title-VI-Comments.pdf; Ctr. for Democracy & Tech., Comments to the U.S. Department of Education, Office of Civil Rights, Protecting Privacy Rights and Ensuring Equitable Algorithmic Systems for Transgender and Gender Non-Conforming Students, at 4 (Jun. 11, 2021), https://cdt.org/wp-content/uploads/2021/06/CDT-Title-IX-Comments-Protecting-Privacy-Rights-and-Ensuring-Equitable-Algorithmic-Systems.pdf.

[37] MATT SCHERER, CTR. FOR DEMOCRACY & TECH., WARNING: BOSSWARE MAY BE HAZARDOUS TO YOUR HEALTH 4 (2021), https://cdt.org/insights/report-warning-bossware-may-be-hazardous-to-your-health/.

[38] *Id.* at 11-12.

[39] *See* IFEOMA AJUNWA ET AL., LIMITLESS WORKER SURVEILLANCE, 105 CAL. L. REV. 735, 742-55 (2017), https://www.californialawreview.org/print/3-limitless-worker-surveillance/.

[40] *See* ANNETTE BERNHARDT ET AL., U. CAL. LABOR CTR., DATA AND ALGORITHMS AT WORK: THE CASE FOR WORKER TECHNOLOGY RIGHTS (2021), https://laborcenter.berkeley.edu/data-algorithms-at-work/.

[41] Ctr. for Democracy & Tech., *CDT Joins EFF, Algorithmic Justice League, Others in Demanding Congress Prevent Continued Use and Investment in Facial Recognition Tech*, (Jul. 1, 2020), https://cdt.org/insights/cdt-joins-eff-algorithmic-justice-league-aclu-others-in-demanding-congress-prevent-continued-use-and-investment-in-facial-recognition-tech/.

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violates due process rights, chills free speech, and invades privacy.[42] These risks extend to situations where private entities collect biometric data and turn it over to law enforcement or use it as a basis for seeking police involvement. Landlords have used facial recognition to identify tenants and detect unauthorized presence on their properties, often providing this data to law enforcement to forcibly remove even tenants who are legally entitled to remain on the properties.[43] Retail establishments have also turned to behavioral AI that purports to detect shoplifting by tracking gait and classifying actions such as looking around and moving quickly as suspicious, leading to potential police involvement.[44] These systems can flag disabled people whose gait diverges from data on which the systems were trained, and the systems may also retain data about a returning shoppers' physical appearance to identify people who were previously flagged.[45]

Disabled people of color, especially disabled Black people, are at even greater risk. In addition to biases in their treatment of Black and brown communities, law enforcement tends to respond to behaviors related to deafness or to mental health or developmental disabilities with use of force, even when the behaviors do not pose an imminent threat and when the encounter was intended to be a wellness check.[46]

OSTP should encourage research to address some of these issues. For example, facial imagery and movement data recorded from police encounters should be analyzed to determine how frequently law enforcement responds with force to a disabled person's nonverbal cues, signs of

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[42] SHARON BRADFORD FRANKLIN, CTR. FOR DEMOCRACY & TECH, RECOGNIZING THE THREATS: CONGRESS MUST IMPOSE A MORATORIUM ON LAW ENFORCEMENT USE OF FACIAL RECOGNITION TECH (Oct. 14, 2021), https://cdt.org/wp-content/uploads/2021/10/Recognizing-the-Threats-Congress-Must-Impose-a-Moratorium-on-Law-Enforcement-Use-of-Facial-Recognition-Tech.pdf.

[43] Anti-Eviction Mapping Project, *Landlord Tech Watch*, https://antievictionmappingproject.github.io/landlordtech/. *See also* Lydia X.Z. Brown, *Tenant Screening Algorithms Enable Racial and Disability Discrimination at Scale and Contribute to Broader Patterns of Injustice*, CTR. FOR DEMOCRACY & TECH. (Jul. 7, 2021), https://cdt.org/insights/tenant-screening-algorithms-enable-racial-and-disability-discrimination-at-scale-and-contribute-to-broader-patterns-of-injustice/.

[44] Kyle Wiggers, *Cashierless Tech Could Detect Shoplifting But Bias Concerns Abound*, VENTUREBEAT (Jan. 23, 2021, 8:45 AM), https://venturebeat.com/2021/01/23/cashierless-tech-could-detect-shoplifting-but-bias-concerns-abound/.

[45] *Id.*

[46] Lydia X.Z. Brown and Ridhi Shetty, *Critical Scrutiny of Predictive Policing is a Step to Reducing Disability Discrimination*, CTR. FOR DEMOCRACY & TECH. (Jul. 23, 2020), https://cdt.org/insights/critical-scrutiny-of-predictive-policing-is-a-step-to-reducing-disability-discrimination/; Sarah Jones, *33-50 Percent of Police Use-of-Force Incidents Involve a Person Who is Disabled*, WTHR (Jun. 19, 2020, 9:42 PM), https://www.wthr.com/article/news/33-50-percent-of-police-use-of-force-incidents-involve-a-person-who-is-disabled-has-disability/531-011bddff-a5f0-4d2a-9ad2-6964623bc32d.

stress, or inability to hear or understand what law enforcement officers are communicating. Review of this data may help assess patterns of improper and excessive law enforcement practices and lead to training or other mitigation measures to prevent dangerous outcomes.

Caretakers have sought community-driven alternatives to seeking police assistance for aggressive behavior to which police often respond with force. Now, researchers are pursuing algorithm-driven alternatives, developing wearables that monitor heart rate, voice, skin temperature, and movements to detect stress that may lead to outbursts.[47] On the one hand, this could supplement other therapeutic tools by prompting preemptive use of coping strategies.[48] On the other hand, while this technology might avoid the need for wellness checks or other law enforcement interactions, it might cause caregivers or legal guardians to intervene unnecessarily, limit disabled people's autonomy, and potentially enable abuse by caretakers.

VI.   Conclusion

Although biometric technologies can provide important benefits to disabled individuals, they also present significant risks. They can perpetuate or exacerbate biases, particularly for multiply-marginalized individuals. And they can present significant privacy issues. While some of those privacy risks apply to everyone, disabled individuals are at greater risk for the reasons outlined above. The onus must be on public and private sector entities to proactively avoid reinforcing systemic ableism through exploitative biometric data practices, while ensuring that disabled people can access the benefits that biometric technologies promise.

Respectfully submitted,

Center for Democracy & Technology

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[47] Emily Arntsen, *This Wearable Device Can Predict Aggressive Outbursts in People with Autism a Minute in Advance*, NEWS@NORTHEASTERN (Aug. 21, 2019), https://news.northeastern.edu/2019/08/21/this-wearable-device-predicts-aggressive-outbursts-in-people-with-autism-a-minute-in-advance/; Vanderbilt School of Engineering, *Researchers to Test Wearable Tech to Detect Problem Behaviors in Children with Disabilities and Offer Intervention Strategies* (Oct. 27, 2021), https://engineering.vanderbilt.edu/news/2021/researchers-to-test-wearable-tech-to-detect-problem-behaviors-in-children-with-disabilities-and-offer-intervention-strategies/.
[48] Will Coldwell, *What Happens When AI Knows How You Feel?*, WIRED (Dec. 29, 2021, 12:00 pm), https://www.wired.co.uk/article/artificial-emotional-intelligence.