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HOUSE OF REPRESENTATIVES
COMMONWEALTH *of* PENNSYLVANIA

House Democratic Policy Committee Hearing

Artificial Intelligence
Tuesday, February 13, 2024 | 10:00 a.m.
Rep. Chris Pielli, Rep. Bob Merski, Rep. Jenn O'Mara

OPENING REMARKS
10:00 a.m. Rep. Chris Pielli (D-Chester)
Rep. Bob Merski (D-Erie)
Rep. Jenn O'Mara (D-Delaware)

PANEL ONE
10:05 a.m. Tyler Clark, Director of State and Local Government Affairs
Microsoft Corporation

Q & A with Legislators

PANEL TWO
10:35 a.m. Dr. Chandan K. Sen, PhD, FNAI, Director
McGowan Institute for Regenerative Medicine

Dr. Deeptankar DeMazumder, MD, PhD, Associate Professor of Surgery
McGowan Institute for Regenerative Medicine

Q & A with Legislators

PANEL THREE
11:15 a.m. Dr. Richard Burns, Professor of Computer Science
West Chester University

Samuel Hodge Jr., Professor
Fox School of Business, Temple University

Michael Soskil, STEM Teacher
Wallenpaupack South Elementary School

Q & A with Legislators

Remarks and Testimony can be found by scanning the QR Code below:

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Testimony to the Pennsylvania House Democratic Policy Committee
February 13, 2024

Thank you for the opportunity to testify today on the topic of artificial intelligence (AI). AI is a powerful technology that can help us solve some of the most pressing challenges of our time, from improving health care and education, to fighting climate change and advancing social justice. AI is not a new phenomenon, but rather a continuation of the long history of human innovation and creativity. For decades, Microsoft has been at the forefront of AI research and development, and we have seen first-hand how AI can transform lives and industries.

Microsoft's Approach to Responsible AI

We believe that AI should be used to empower people and organizations, not to replace them. That is why we have invested in initiatives that showcase the potential of AI for good, such as our AI for Earth, AI for Accessibility, and AI for Humanitarian Action programs. We have also partnered with local communities and organizations to bring the benefits of AI to more people, such as our TechSpark program that supports rural and small-town America. And we have integrated AI into our products and services, such as our Office 365 suite, our Azure cloud platform, and our Windows operating system, to make them more intelligent, productive, and secure.

But we also recognize that AI poses new challenges and risks, such as potential impacts on privacy, security, human rights, and ethics. That is why we have embarked on a responsible AI journey, guided by our vision of creating technology that respects human values and augments human capabilities. We have established an internal committee, composed of senior leaders and experts from across the company, to advise on the ethical and societal implications of AI. We have also developed and implemented six AI principles: fairness, reliability and safety, privacy and security, inclusiveness, transparency, and accountability. And we have created and adopted an AI Standard, which defines the minimum requirements and best practices for developing and deploying AI in a responsible manner.

We believe that we are at an inflection point for AI, as the technology becomes more ubiquitous and impactful. Microsoft is committed to helping realize this opportunity responsibly, and we welcome the engagement of policymakers and stakeholders on this important issue.

The Future of Work

The Covid-19 pandemic has transformed the way we work. Microsoft's Work Trend Index is a research initiative that examines how remote work, hybrid teams, and digital collaboration affect productivity, well-being, innovation, and skills in the digital economy.

As part of our Work Trend Index, we surveyed 31,000 people in 31 countries and analyzed trillions of Microsoft 365 productivity signals, along with labor trends from the LinkedIn Economic Graph.

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The Annual Report highlights the struggle people are facing in light of the exponential pace of work along with the "crush of data, information, and always-on communications."
Some of the key findings from this report include:

- 64% of respondents say they struggle with having time and energy to do their job – and those people are 3.5 times more likely to also struggle with innovation and strategic thinking.
- 70% of people would delegate as much work as possible to AI to lessen their workloads.
- 82% of leaders say their employees will need new skills to be prepared for the growth of AI.

Since the beginning of 2023, LinkedIn found, on average, a 75% increase each month in members adding terms related to AI to their profile. In a survey to executives, 44% of respondents plan to increase their use of AI at their organization in the next year, while only 4% of plan to reassess roles and reduce headcount as an impact of AI in their workplace.

AI and the Workforce

One of the key challenges and opportunities of AI is its impact on the workforce. As AI transforms the nature of work and the skills required for it, we need to ensure that workers are prepared and empowered to thrive in the digital economy.

We also believe that workers should have a voice and a stake in how AI is developed and deployed, and that employers should respect the rights and dignity of workers in the use of AI. That is why we are proud to partner with the AFL-CIO, the largest federation of labor unions in the United States, to explore how AI can support workers' interests and well-being. Together, we have launched a joint working group, composed of representatives from Microsoft, the AFL-CIO, and several affiliated unions, to discuss and address the opportunities and challenges of AI for workers across different sectors and industries. We have also co-hosted a series of webinars and events to share best practices and insights on topics such as AI ethics, AI education, and AI governance. And we have supported the development of a toolkit for union leaders and members, which provides practical guidance and resources on how to engage with AI in the workplace.

Through this partnership, we hope to foster a constructive dialogue and collaboration between the technology sector and the labor movement, and to advance a shared vision of AI that benefits workers and society. We believe that this is an essential step toward creating a more inclusive, equitable, and sustainable future for all.

Empowering People with AI Skills

AI offers tremendous potential to empower workers around the world – but only if everyone, everywhere has the skills to use it.

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Though there is natural apprehension about what the rising technology will mean for jobs, we believe that AI-enabled innovation will generate economic and societal opportunities for the communities we serve. To take full advantage of its many benefits, jobseekers and employed professionals alike need to develop their skills in working with AI.

To help address this challenge, Microsoft launched a new AI Skills initiative to help people and communities around the world learn how to harness the power of AI. As part of our Microsoft Skills for Jobs program, the initiative includes new, free coursework developed with LinkedIn; a new open global challenge in coordination with data.org to uncover new ways of training workers today and tomorrow on generative AI; and greater access to free digital learning events and resources for everyone to improve their AI fluency.

We appreciate the opportunity to share our perspective and experience on AI, and we look forward to working with you and other stakeholders to ensure that AI is a force for good in our society. Thank you for your attention and your leadership on this critical issue.

Additional resources

- Microsoft's Responsible AI Standard - Microsoft-Responsible-AI-Standard-v2-General-Requirements-3.pdf
- Governing AI: A Blueprint for the Future - Governing AI: A Blueprint for the Future (microsoft.com)
- Will AI Fix Work? - Work Trend Index | Will AI Fix Work? (microsoft.com)
- LinkedIn Future of Work Report - future-of-work-report-ai-august-2023.pdf (linkedin.com)
- AI Skills - aka.ms/AISkills

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Pitt McGowan | Institute for Regenerative Medicine

Chandan K. Sen, PhD
University Endowed Professor and Director
McGowan Institute for Regenerative Medicine
Associate Vice Chancellor - Life Sciences Innovation and Commercialization
Chief Scientific Officer (Wound Care), Univ of Pittsburgh Medical Center

Tuesday, December 9, 2023

Artificial Intelligence (AI) in Health Care: House Democratic Policy Hearing on December 14, 2023

"*The real problem of humanity is the following: We have Paleolithic emotions, medieval institutions, and God-like technology.*" - Edward O. Wilson (2009)

A big challenge we are facing right now is that AI is driving change at an exponential rate, much faster that anyone predicted, and it's a challenge to keep up with it. While this is promoting creativity and driving innovation more than ever before, there are certain dangers that warrant government regulation. Forward-thinking government regulation of the use of AI is necessary to safeguard individual freedom of our citizen and therefore our democracy. AI systems can inherit and perpetuate societal biases present in their training data. This can be abused to bias decision-making and polarize the public. The widespread use of AI in surveillance, data analysis, and facial recognition systems raises concerns about individual privacy. The lack of transparency in some AI algorithms can violate ethical principles. Increased reliance on AI-driven communication and social interaction may lead to a loss of genuine human connection and disrupt our social fabric. The threats of overregulation of AI are equally chilling as it would cause stifling of innovation, blunt economic competitiveness and set us back in time. The role of AI in the future of healthcare will be transformative.

The government, as the keeper of our democracy, needs to be pro-actively on top of what's going on and ensure that the interests of the larger population are protected and benefited. This will be achieved by ensuring that the interests of our people are not exploited or abused. At the same time, by ensuring that the benefits of AI touch every life in a meaningful way. For example, the bonding between a child and AI-based domestic devices may have both positive and potentially concerning aspects. While certain aspects of learning may be facilitated, over-dependency on technology is likely to have profound impact on the development of the child to adulthood. Parent-child bonding is likely to be weakened. Interpersonal and emotional skills are likely to be compromised affecting ethical and moral development. In such setting, the government is expected to play a critical role in maintaining a resilient and equitable social fabric. The Biden Executive Order on Safe, Secure, and Trustworthy AI is a good step in the right direction. It has put forth a regulatory structure that is broad but does not adequately cover most social aspects.

While acknowledging the importance of avoiding overregulation or over-bureaucratizing the delivery of healthcare, we need to make sure that the technology is implemented safely, transparently and responsibly. For example, companies need to disclose their safety protocols and training algorithms. Experience has taught us that when we set basic goals and standards to ensure the products are safe for consumers, this turns out to be good for everyone, companies, academia, and the public. Measures to bring down the cost of healthcare must be incentivized. "AI is too important not to regulate—and too important not to regulate well," says *Google*.

Not all AI products may be treated and regulated as devices. In some cases, AI products should be treated as "**cognitive resources**" – something between a "device" and "human resource (HR)". For example, typically an approved device is not expected to be in ethical or moral violation; or accused of unprofessional behavior as it related to other human colleagues in a professional workplace. AI products may perform in ways that are unprofessional disrupting the workplace environment. Alternatively, AI may have positive effects on HR in the work environment bolstering productivity and therefore warranting incentives.

It is imperative that we set some basic criteria and standards to make sure AI does not lead to unsafe consumer-facing products. To establish consumer trust, the government must optimally engage the Federal Trade Commission (FTC), charged with preventing deception and unfairness in the marketplace. In November of 2023, the FTC has approved an omnibus resolution authorizing the use of compulsory process in nonpublic investigations involving products and services that use or claim to be produced using AI or claim to detect its use. The Commission voted 3-0 to approve the omnibus resolution authorizing compulsory process in investigations related to the use of AI. In the healthcare space, according to the FDA, interest in medical devices incorporating AI/ML functionality has increased due to the development of large language models (LLMs). Over the past decade, the FDA has reviewed and authorized 692 devices (marketed via 510(k) clearance, granted De Novo request, or premarket approval) with AI/ML across many

different fields of medicine—and expects this trend to continue. As of October 19, 2023, no device has been authorized that uses generative AI or artificial general intelligence (AGI) or is powered by large language models.

In healthcare, a robust AI decision framework will help us understand the considerations associated with implementing AI in health care. The difference that AI will make is transformative. Here are a few examples:

1. Sensors and remote personalized monitoring

- Transactional to Continuous Care: Digitalization is a change in the value proposition of our patients. Current clinical practice remains transactional, i.e., a patient is evaluated at discrete time points with the hope that the patient will get sick only at those intervals while healthcare providers engage in a growing number of mundane, often redundant administrative tasks. Sensor-based strategies will change practice from transactional to continuous care. Then we will only bring patients into the hospital if they get really sick.
- Reactive Care to Preventive Care: We know that AI can see beyond what the human eye can see. In 2023, over two-third of all AI/ML supported FDA approved medical devices serve Radiology to read images. Ongoing work at PittMcGowan employs AI/ML to look at ECGs in an entirely new way. For example, even though an ECG may appear normal by all current standards, the AI/ML can tell if that person will develop atrial fibrillation 10 years from now. This has huge implications because atrial fibrillation increases the risk of stroke. Many people are first diagnosed with atrial fibrillation only after they have already suffered a stroke. Something as simple as prescribing a blood thinner can prevent stroke if we know which person will and will not develop atrial fibrillation. Similarly, AI/ML is being evaluated for identifying which person will develop cardiac arrest, respiratory failure, heart failure, severe bleeding, etc.

2. Virtual Care & TeleHealth

- About 90-100% of patient care became virtual during the COVID crisis, then went down to about 30-40%, and now is about 10-20%, but it will increase again. And the reason for that is because a $300 investment on an I-pad could prevent hospitalization, which otherwise could cost $10-20K, so overall a better global investment. Virtual care will also break barriers of states. There already is a spillover between states and borders. This may lead to inequity of virtual care. Telephone is fairly equally distributed but the availability of video-based care may pose challenges.
- Virtual assistants (e.g., chatbots), especially for algorithmic questions, will be AI-based. For example, instead of calling your doctor, nurse or pharmacist about a prescription or missed medication dose, an AI assistant will be able to help. AI-based triaging will relieve healthcare providers of some of the burden that then could be spent on patient care. A recent study in JAMA Internal Medicine reported that patients found chatbots provide more empathy than caregivers.
- Healthcare costs are staggering and reimbursement models to serve the above-mentioned new healthcare services must be developed. Currently, everything is incentivized via RVU or cash. Technology, like the ones we are developing at PittMcGowan, will be low cost and equity conscious. For example, we can identify individuals who will develop atrial fibrillation or suffer sudden cardiac arrest using existing medical technology. Something disruptive will come along that we will need to adopt and figure out the solutions.

3. Digital Dashboards

- At PittMcGowan we are working on digital dashboards so that subspecialists and general practitioners alike see the clinical scenario in a pictorial way so it's easier to understand interaction between different diseases and how patients are regulated for each of them. This also allows us to be better clinicians, understand the patient holistically, and to have some connectivity so that we are able to put things in perspective. Digital dashboards will transform multidisciplinary care.
- Data protection will be important. This has not been happening fast enough. Larger for-profit companies are taking advantage of the situation before regulatory barriers are implemented. This is creating an uneven playing field tilted against the small entrepreneur.

Respectfully submitted by Drs. Chandan K Sen and Deeptankar DeMazumder

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PA House Democratic Policy Committee, Policy Hearing on Artificial Intelligence

Tuesday, February 13, 2024
Irvis Office Building, Room G-50

Dr. Richard Burns

Professor and Chair of Computer Science
West Chester University of Pennsylvania

Research Interests: Artificial Intelligence, Natural Language Processing, Machine Learning

Written Testimony

My name is Richard Burns, and I am a Professor and Chair of the Computer Science Department at West Chester University of Pennsylvania. I received my Ph.D. in 2012 from the University of Delaware, and my dissertation spanned the areas of artificial intelligence, natural language processing, and machine learning – all of which I continue to explore in my present research and scholarship.

We are assembled today for this policy hearing on Artificial Intelligence, and although scholars have long asked questions on "the future of AI" and "the singularity", our concern with the potential exponential advancement of artificial intelligence is certainly much more front and center now than it ever has been. And for good reason: the world has been enthralled and inspired by many recent AI inventions and products, including the chatbot ChatGPT and the text-to-image generation system DALL-E.

What has facilitated these recent advancements? In short, it is the invention, discovery, and implementation of large language models – all of which is new to the last decade. The science includes (1) hardware advancements that support the computational training of these models, as well as (2) the collection, scraping, and storing of vast amounts of data necessary which these models "learn" from, and finally (3) the scientific mathematics and algorithms that fit everything together. These advancements have come from both the academic and private sectors, both inside and outside the United States.

An accounting of policies, proposals, and headlines also helps portray the current landscape. In November and December 2023, a small sampling of notable events included:

- President Biden signed an executive order on AI that aimed at establishing standards for security and privacy protections.
- Google released an AI named Gemini, a new competitor to ChatGPT.
- Sam Altman was fired as Chief Executive Officer of OpenAI by its board of directors only to be reinstated days later. Factors for the initial firing that the press reported included alleged concerns about the safe development of AI. OpenAI is the tech start-up that built ChatGPT.
- The European Union passed an AI Act aimed at monitoring, providing oversight, and requiring data disclosure and testing for high-risk applications. Negotiations towards the final law discussed exemptions if they were for a law enforcement usecase. It was reported that Facebook's parent company, Meta, was part of the lobby against the law.

I drafted the above bulleted list before this hearing was rescheduled from December 2023 and moved to its present date of February 2024. Since that time, the following has also occurred:

- Some voters in New Hampshire received AI-generated robocalls impersonating President Biden prior to their state's primary election.

- Isreali military announced that they were using AI to select some drone targets in real-time in their war in Gaza.
- The National Science Foundation officially stated that reviewers are "prohibited from uploading any content from proposals, review information and related records to non-approved generative AI tools"; "proposers are encouraged to indicate in the project description the extent to which, if any, generative AI technology was used and how it was used to develop their proposal".
- Governor Shapiro launched a partnership with OpenAI on an enterprise-level ChatGPT for use on "tasks such as creating and editing copy, making outdated policy language more accessible, drafting job descriptions to help with recruitment and hiring, addressing duplication and conflicting guidance within hundreds of thousands of pages of employee policy, helping employees generate code, and more."

It is clear that AI is going to continue to impact our world.

Many current fears involving AI include the unknown of what the future holds. One milestone achievement that researchers are aiming at is what we call "Artificial General Intelligence" (AGI). Much of our current awe in AI is in the performance of large language models of text generation, a technology that performs a single task incredibly well. But, AGI – if successfully discovered – would have an entirely differently power and be much more broadly applicable: including the ability to generally reason and complete tasks such as: solve advanced mathematical proofs, reason like humans, and potentially make new discoveries that humans have not yet. Although Artificial General Intelligence is not here yet, we can no longer equivocally state that we will not get there in our lifetime.

In conclusion, what does this mean for our Commonwealth and its residents? Technologies will continue to advance, AI will continue to progress, and the technology that we interact with will be even more sophisticated 10 years from now. New jobs will continue to be created. But AI may also allow companies to use computing to automate many tasks that employees perform now. Some current jobs may become obsolete, and people will be affected. The good news is there are qualities that differentiate a thinking human from an AI, and these distinctions will be key in an age of rapid change. These skills are central to higher education. I am proud to serve at West Chester University where our institution's mission includes developing the critical and creative abilities of students. In coursework we strengthen problem solving skills, the ability to navigate perspectives and diversity of thoughts, responding to community need, and exercising agility and adaptivity in an age of rapid technological change. Such knowledge and abilities are critical, and they provide a solid foundation for students' personal and professional development and their capability to work as the next leaders in this field. These individuals will have an advantage at adapting to any effects of future AI advancements.

Our course programming at West Chester University also presents the fundamentals of Artificial Intelligence. Our student majors want to learn the state-of-the-art in their classes; likewise, our faculty are excited to teach these exciting innovations and breakthroughs in their courses as well as to engage in scholarship and research with our students. We have developed many new courses in the last few years that are reflective to recent advances in computing, including Data Science, Data Visualization, Modern Malware Analysis, and Cloud Computing. Additionally, we have built into our Artificial Intelligence course the theory and principles of neural networks, which is the cornerstone of large language models. Our most recent iteration of the course also includes a greater discussion on current ethical issues in Artificial Intelligence, which is an area that the Computer Science Department also prioritizes within our Computer Security and Ethics course. All of our departmental major courses are examined from two bodies: the accrediting body of our B.S. in Computer Science degree, ABET, as well as our department's Industrial Advisory Council. This two-pronged external review helps us ensure that we deliver appropriate and rigorous courses which align to current industrial and regional needs.

West Chester University's Teaching and Learning Center (TLC) aims to advance the university's strategic goal of learning by increasing faculty knowledge of pedagogical techniques, best practices in course design, educational technology, and digital accessibility. TLC is currently exploring Generative AI, to discuss its impact on the classroom and potential instructional uses, acknowledging that there are different appropriate potential uses of Generative AI across disciplines. TLC is facilitating a dialog that is examining questions such as: how to assess students' work where generative AI is utilized in some form, as well as the pedagogy of teaching core critical thinking and communication skills with generative AI tools so easily accessible.

I would be happy to answer any questions at this time and would also be very welcome to working with your offices on any proposed legislation in these areas.

The Regulation of Artificial Intelligence in Pennsylvania

By: Samuel D. Hodge, Jr.[1]
temple885@aol.com

I. Introduction

Artificial intelligence (AI) has been employed across a variety of domains with excellent results.[2] This includes fields such as medicine, education, product distribution, business, and law enforcement.[3] Nevertheless, the technology is not without problems. Some of these issues include loss of jobs, ethical issues related to bias and privacy, and security breaches.[4]

II. Inadequate Regulations

It is common knowledge that remedial measures do not keep pace with developing technologies. However, this dynamic is changing. For example, in 2022, bills or resolutions about artificial intelligence were proposed in a minimum of 17 states, with successful enactments occurring in seven jurisdictions.[5] This year, AI bills were introduced in a minimum of 25 states, along with Puerto Rico and the District of Columbia, with 16 of these jurisdictions implementing resolutions or passing legislation

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[1] Samuel D. Hodge, Jr. is an award-winning professor at Temple University where he teaches law, anatomy, and forensics. He has authored more than 700 publications and 9 books. Professor Hodge has researched, written, and lectured extensively on artificial intelligence in the contexts of law enforcement, medicine, business, and the practice of law.

[2] Kandadpriya Basu, Ritwik Santa, Aihui Ongm and Treena Baasu*, Artificial Intelligence: How Is It Changing Medical Sciences and Its Future*, Indian J. Dermatology 2020, Sept-Oct; 65(5): 365 – 370.

[3] *Id.* at *1.

[4] Nikita Duggal, *Advantages and Disadvantages of Artificial Intelligence (AI),* SimpliLearn, October 17, 2023, https://www.simplilearn.com/advantages-and-disadvantages-of-artificial-intelligence-article.

[5] *Legislation Related to Artificial Intelligence*, National Conference of State Legislatures, January 1, 2023, https://www.ncsl.org/technology-and-communication/legislation-related-to-artificial-intelligence#:~:text=being%20tracked%20separately.-,2022%20Legislation,or%20commissions%20to%20study%20AI. These states include Colorado, Florida, Idaho, Maryland, Rhode Island, Vermont, and Washington.

on the matter.[6] Many of the proposals involve consumer profiling and privacy, discrimination, hiring and workplace surveillance, and mental health services.[7]

Various legislative bodies are also creating blue-ribbon panels or commissions to guide them in handling AI developments. For instance, a bipartisan group of Congress is supporting the establishment of a committee to develop strategies for regulating artificial intelligence.[8] On the state level, legislatures in Texas, North Dakota, West Virginia, and Puerto Rico have formed advisory panels to examine AI technologies employed by their corresponding state agencies. On the other hand, Louisiana has created a technology and cyber security committee to investigate AI's influence on government processes and policies.[9]

III. Applications

Multiple applications have been the subject of legislative examination ranging from employment discrimination to using AI in decision-making. This paper will address two high-profile problems: deepfake technology involving child pornography and the regulation of biometric data.

A. Deepfake Technology

Deepfake technology employs artificial intelligence to produce convincing images, audio, and video fabrications. The term encompasses both the technology itself and the

[6] *Artificial Intelligence 2023 Legislation*, National Conference of State Legislatures, September 27, 2023, https://www.ncsl.org/technology-and-communication/artificial-intelligence-2023-legislation.
[7] See: *US State-By-State AI Legislation Snapshot*, Bryan Cave Leighton Paisner, https://www.bclplaw.com/en-US/events-insights-news/2023-state-by-state-artificial-intelligence-legislation-snapshot.html (last visited on November 7, 2023).
[8] Cristiano Lima, *Lawmakers Propose 'Blue-Ribbon' AI Commission,* The Washington Post, June 20, 2023, https://www.washingtonpost.com/politics/2023/06/20/lawmakers-propose-blue-ribbon-ai-commission/.
[9] Susan Haigh*, Artificial Intelligence Is Gaining State Lawmakers' Attention, And They Have a Lot of Questions*, NBC DFW, August 5, 2023, https://www.nbcdfw.com/news/local/texas-news/artificial-intelligence-is-gaining-state-lawmakers-attention-and-they-have-a-lot-of-questions/3310729/.

resulting misleading content, merging deep learning and the concept of falsification.[10] These fabrications frequently involve altering existing source materials by substituting one person's image with another. The technology can modify faces, control facial expressions, and even synthesize faces and speech.[11] Additionally, it can generate new content depicting individuals engaging in actions or making statements they never actually performed or uttered.[12]

A significant issue involves the generation of nonconsensual sexual content. This concern is demonstrated by the presence of deepfake pornographic videos featuring celebrities like Scarlett Johansson, Taylor Swift, and Gal Gadot, which have been disseminated on the internet.[13] However, these pornographic representations have become even more sinister as actors create depictions of children engaged in sexual acts.

During a recent House of Representatives hearing, it was emphasized that an immediate need exists for heightened public awareness and legislative measures to address the inappropriate use of deepfake technology. Recommendations were made to

[10] Nick Barney, *Deepfake AI (Deep Fake),* Tech Target, https://www.techtarget.com/whatis/definition/deepfake (last visited November 12, 2023).
[11] *Deconstructing Deepfakes—How Do They Work and What Are the Risks?*, WATCHBLOG (Oct. 20, 2020), https://blog.gao.gov/2020/10/20/deconstructing-deepfakes-how-do-they-work-and-what-are-the-risks/#:~:text=Deepfakes%20rely%20on%20artificial%20neural,and%20reconstruct%20patterns%E2%80%94usually%20faces.
[12] Nick Barney, *supra,* note 10.
[13] Deeptesh Sen, *Explained: Why Is It Becoming More Difficult to Detect Deepfake Videos, and What Are the Implications?*, INDIAN EXPRESS, https://indianexpress.com/article/explained/explained-deepfake-video-detection-implications-7247635 (Apr. 3, 2021).

integrate digital literacy into education and to advance technologies capable of identifying and flagging content generated by artificial intelligence.[14]

There is also a nationwide push to integrate the inclusion of non-consensual dissemination of sexually deceptive audio or visual content into the invasion of privacy laws of the states.[15]

IV. Facial Recognition Technology

Facial recognition involves using biometric data to identify a person by analyzing facial features captured in a photograph or video.[16] The process entails comparing this information against a database of known images to locate a match. Facial recognition technology is omnipresent, from smartphones in one's pocket to cameras at popular concert venues.[17] While no facial recognition system is 100 percent accuracte, various factors contribute to the occurrence of false positives, false negatives, or undetected faces.[18] Such elements include the intricacies of the camera, distance from the subject, database size, algorithm efficiency, and the race and gender of the individual being scanned.[19]

Accuracy rates within certain demographic groups are also a known problem. Facial recognition algorithms demonstrate lower efficiency when applied to minorities,

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[14] Gabby Miller, *Transcript: US House Hearing on "Advances in Deepfake Technology,"* Tech Policy Press, November 9, 2023, https://techpolicy.press/transcript-us-house-hearing-on-advances-in-deepfake-technology/.
[15] See: *Corrado Introduces Legislation Prohibiting Non-Consensual "Deepfake" Pornography,* Insider NJ, March 6, 2023, https://www.insidernj.com/press-release/corrado-introduces-legislation-prohibiting-non-consensual-deepfake-pornography/.
[16] Clare Stouffer, *What Is Facial Recognition and How Does It Work*?, Norton, July 21, 2023, https://us.norton.com/blog/iot/how-facial-recognition-software-works.
[17] *Id*.
[18] Samuel D. Hodge, Jr., *Facial Recognition Technology: A New Tool in Law Enforcement's Forensic Toolbox*, 67 No. 5 Prac. Law. 11, October 2021.
[19] *Id.*

women, and young adults in comparison to their accuracy with Caucasians, men, and older adults.[20] This discrepancy arises because facial recognition algorithms were primarily trained on databases predominantly composed of images featuring white middle-aged males.[21] Consequently, one study revealed an error rate of approximately 31% in identifying images portraying women with dark skin.[22] This flaw can exacerbate the race differential and result in increased misidentifications during an arrest of minorities due to incorrect matches.[23]

V. AI Legislation for the Pennsylvania Legislature to Consider

A. Regulation of Biometric Technology

There is a clear need for legislation to guide biometric data collection. However, government initiatives usually need to catch up to technological advancements. This shortcoming, however, appears to be changing as statutory enactments are gaining momentum with AI applications.[24]

1. Approaches

Examining these biometric laws demonstrates that jurisdictions take one of two approaches. The traditional or conservative approach bars any private cause of action, leaving enforcement to the state's Attorney General. Sample states include Texas and

[20] *Id.*
[21] *Id.*
[22] *Id.*
[23] Jake Bechtel, *Two Major Concerns About the Ethics of Facial Recognition in Public Safety*, Design World (Mar. 14, 2019), available at https://www.designworldonline.com/two-major-concerns-about-the-ethics-of-facial-recognition-in-public-safety/.
[24] Duncan Stewart, Paul Lee, Ariane Bucaille, and Gillian Crossan, *AIs Wide Shut: AI Regulation Gets (Even More) Serious,* Deloitte Insights, December 1, 2021, https://www2.deloitte.com/xe/en/insights/industry/technology/technology-media-and-telecom-predictions/2022/ai-regulation-trends.html.

Washington.[25] The more progressive approach allows consumers to sue for monetary relief. It is felt that while the laws giving the Attorney General enforcement powers may be satisfactory, they are mainly unenforced because of the lack of resources and prosecutorial interest.[26]

The first regulatory scheme involving artificial intelligence occurred in 2008 when Illinois passed the Biometric Information Privacy Act (BIPA).[27] This law, which has become the gold standard for consumer biometric legislation,[28] regulates biometrics' gathering, keeping, revelation, and destruction, including fingerprints, handprints, voiceprints, eye scans, and facial recognition systems.[29] This Act delineates the responsibilities imposed on private entities gathering or acquiring biometric data and requires a consumer's consent before the information may be collected.[30] Importantly, BIPA affords individuals the right to seek monetary damages if an entity violates the statute and causes harm.[31]

C. Pennsylvania's **Biometric Identifier Signage Act**

[25] Samuel D. Hodge, Jr., *The Legal and Ethical Considerations of Facial Recognition Technology in the Business Sector,* 71 DePaul Law Review 731, Summer 2022.
[26] Tonya Riley, *Illinois' Biometric Privacy Law Provides Blueprint as Sates Seek to Curb Data Collection*, Cyber Scoop, February 28, 2023, https://cyberscoop.com/states-bipa-biometric-privacy-legislation-illinois/. Some states that have passed or proposed legislation allowing a private cause of action include California, Maine, Maryland, Massachusetts, Missouri, and New York. See: Molly DiRago, Kim Phan, Ronald Raethrer, and Robyn Lin, *A Fresh "Face" of Privacy: 2022 Biometric Laws,* Troutman Peeper, April 5, 2022, https://www.troutman.com/insights/a-fresh-face-of-privacy-2022-biometric-laws.html.
[27] 740 ILCS 14/, Biometric Information Privacy Act.
[28] Hayley Tsukayama, *Trends in Biometric Information Regulation in the USA*, Ada Lovelace Institute, July 5, 2022 https://www.adalovelaceinstitute.org/blog/biometrics-regulation-usa/.
[29] Kirk Nahra and Ali Jessani, *Illinois Supreme Court Finds that Biometric Information Privacy Act Claims Accrue with Each and Every Violation,* Wilmer Hale, February 23, 2023, https://www.wilmerhale.com/en/insights/blogs/wilmerhale-privacy-and-cybersecurity-law/20230223-illinois-supreme-court-finds-that-biometric-information-privacy-act-claims-accrue-with-each-and-every-violation.
[30] *Id.*
[31] Biometric Information Privacy Act, *supra*, note 27.

On April 17, 2023, the Biometric Identifier Signage Act was introduced before the General Assembly of Pennsylvania.[32] This bill provides in pertinent part:

> Any commercial establishment that collects, retains, converts, stores, or shares biometric identifier information of customers must disclose the collection, retention, conversion, storage or sharing, as applicable, by placing a clear and conspicuous sign near all of the commercial establishment's customer entrances notifying customers in plain, simple language that customers' biometric identifier information is being collected, retained, converted, stored, or shared, as applicable.[33]

The bill follows the Illinois model, which protects a person's biometric information from being gathered, accumulated, or utilized without their knowledge and allows for a private cause of action by permitting the prevailing party to recover $500 for each violation and $5,000 for each intentional or reckless transgression along with reasonable attorney fees and costs.[34]

1. Questions Presented

This proposed legislation presents several questions, some of which are presented below:

i. Injury Requirement

The bill presents a schedule of payments for each violation, like BIPA, which provisions have been litigated extensively. An important question is whether a plaintiff must show an actual injury to proceed with a lawsuit. In *Rosenbach v. Six Flags Entertainment Corp.*, the Illinois Supreme Court ruled that an aggrieved party may seek liquidated damages even though they have not sustained an actual injury. This means

[32] Pennsylvania House Bill 926, April 17, 2023.
[33] *Id*.
[34] *Id*.

that claimants only need to allege a violation of their rights under the statute.[35] This ruling opened the floodgate for lawsuits under the statute, culminating in a $650 million settlement against Facebook for a technical violation of BIPA.[36] Should the proposed Pa. legislation insert an actual injury requirement, and does it wish to cap the allowable damages?

ii. Notice Requirements

The Bill requires the signage containing the notice about data collection to "be clear and conspicuous." Should a font size be specified to establish an objective standard, or is it the intent to let the Attorney General make that determination?

iii. Unauthorized Disclosure

The bill prevents the distribution of biometric identification information in exchange for anything of value or profit from the transaction. This language does not prevent sharing information with another entity for free despite the harm such disclosure may cause. This language, by implication, also allows the commercial establishment that captures the data to use it for any purpose.

iv. Notice to Cure

The bill allows the offending party to cure a violation within thirty days of notice by the consumer. However, something should be mentioned about a commercial establishment that repeatedly violates the law and whether they should be treated differently. Also, how does one cure a violation once the vendor distributes a person's biometric data to a third party?

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[35] Rosenbach v. Six Flags Entertainment Corp., 2019 IL 123186 (S. Ct. Ill.).

[36] *Patel v. Facebook, Inc.,* 932 F.3d 1264, 1267 (9th Cir. 2019, cert. denied, 140 S. Ct. 937, 205 L. Ed. 2d 524 (2020).

v. Commercial Establishment

The bill defines a "commercial establishment" as "a retail store, restaurant, hotel, motel, or place of entertainment or amusement." Does this definition include a casino, bar, or office building?

D. Regulation of Deepfake Pornography Depicting Children

Since 1970, Congress has enacted legislation to safeguard children against being exploited by pornography.[37] In 1996, Congress crafted legislation that seemed to forecast the problem of deepfake pornography of children. The Child Pornographic Prevention Act prohibited "any visual depiction, including any photograph, film, video picture, or computer-generated image or picture" that "is, or appears to be, of a minor engaging in sexually explicit conduct."[38]

This remedial measure was short-lived. The United States Supreme Court, in *Ashcroft v. Free Speech Coalition*, determined that the prohibition of virtual child pornography under the Act restricts the ability to participate in a significant amount of legal expression, rendering it excessively broad and in violation of the First Amendment.[39] Another dagger that makes prosecution of offenders difficult is that if AI generated the deepfake video, there wouldn't be "an actual child victim."[40]

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[37] Harshita Ganesh, *Protecting Children Through Deepfake Child Pornography: A Moral, Legal and Philosophical Discussion on the Intersection of the Evolution of Law and Technology*, Georgetown Law School, https://pdf.live/edit?url=https%3A%2F%2Fwww.law.georgetown.edu%2Famerican-criminal-law-review%2Fwp-content%2Fuploads%2Fsites%2F15%2F2023%2F01%2F60_Ganesh_FOCP_FINAL.pdf&guid=867e2f58-9a3b-6049-17d8-786cf432b95e&installDate=100423&source=google-d_pdftab_crx (last visited November 12, 2023).
[38] 18 U.S.C. § 2252A.
[39] Ashcroft v. Free Speech Coalition, 535 U.S. 234 (2002).
[40] Brock Owens, *AI Generated Child Pornography May Be Difficult to Prosecute: New Bill Could Change That*, WJAC, October 11, 2023, https://wjactv.com/news/local/ai-generated-child-pornography-may-be-difficult-to-prosecute-new-bill-looking-to-change-that.

On September 5, 2023, a bipartisan alliance comprising all state attorneys general jointly signed a letter urging Congress to create a specialized commission tasked with examining the role of artificial intelligence in shaping the experiences of children.[41]

On the state level, revenge porn is prohibited by laws in most states, but only California, Texas, Hawaii, and Virginia specifically tackle the non-consensual dissemination of deepfakes.[42] These statutes exhibit variations, including the terminology employed to delineate deepfakes and the extent of liability imposed. These laws are also categorized as criminal, while others afford civil penalties, granting damages to individuals who claim to be victims of such actions.[43]

As an illustration, Colorado is considering a bill that criminalizes the non-consensual dissemination of deepfake pornography, carrying a penalty of three to five years in prison and a fine of up to $15,000. Notably, the proposal equates the distribution of deep fake pornography portraying a minor with the same severity of child pornography offenses, imposing a penalty of five to ten years in jail and a fine of up to $150,000.[44]

III. Conclusion

[41] Ariez Bueno, *Regulating the Worst Kind of AI-Generated Content,* Inside Compliance, Loyola University Chicago School of Law, September 23, 2023, https://blogs.luc.edu/compliance/?p=5506.
[42] Cassandra Coyer, States Are Targeting Deepfake Pornography—But Not in a Uniform Way, ALM Law.com, August 10, 2023, https://www.law.com/legaltechnews/2023/08/10/states-are-targeting-deepfake-pornography-but-not-in-a-uniform-way/.
[43] *Id.*
[44] *Corrado Introduces Legislation Prohibiting Non-Consensual "Deepfake" Pornography,* Insider NJ, March 6, 2023, https://www.insidernj.com/press-release/corrado-introduces-legislation-prohibiting-non-consensual-deepfake-pornography/#:~:text=Under%20Corrado's%20legislation%2C%20the%20non,up%20to%20%2415%2C000%2C%20or%20both.

In conclusion, integrating artificial intelligence across diverse sectors has revolutionized numerous industries. However, the rapid proliferation of this biometric technology has also brought a range of concerns to the forefront, including ethical dilemmas, privacy breaches, and potential job displacement. As AI continues to evolve, it is increasingly evident that the regulatory landscape must address these emerging challenges. Pennsylvania's proposed legislation is undoubtedly a step in the right direction.

Pennsylvania House Democratic Policy Committee
Hearing on Artificial Intelligence
December 14, 2023

Testimony of Michael A. Soskil Sr.
2017 Pennsylvania Teacher of the Year
Co-Author of *Teaching in the Fourth Industrial Revolution: Standing at the Precipice*

Thank you for the opportunity to share my expertise on Artificial Intelligence (AI), an issue that will shape the future of education and society. During my twenty-six-year teaching career, I have been widely recognized as an innovator in using educational technology. My private consulting work has involved corporate, nonprofit, and governmental partners. I have presented and keynoted at numerous educational technology conferences around the globe and facilitated professional learning training for teachers on five continents. My work with elementary students in the Wallenpaupack Area School District, where I continue to teach, has been referenced in several publications and has led to my receiving the Presidential Award for Excellence in Math and Science Teaching from President Obama, being named one of the top ten teachers in the world by the Varkey Foundation, and having the honor of representing our great Commonwealth as Pennsylvania Teacher of the Year.

Machine learning, a subset of AI in which massive amounts of data are collected and analyzed by algorithms to provide human-like responses to users, will be ubiquitous in the lives of our current students. As such, we must balance technological relevance in our schools and public policy protections that ensure a healthy future for our democratic society and the next generation.

The Role of Technology in Education

I'd like to start by sharing a story that exemplifies how technology can be an incredible educational tool. This is the story from ten years ago, long before predictive AI and machine learning had the impact they are having now.

My 5th-grade students in rural Northeastern Pennsylvania were preparing for a concert. Rather than singing to an empty auditorium (that also serves as a cafeteria and a gymnasium), we set up a video conference call with a group of students in the Kibera Slum of Nairobi. The two sets of students sang to each other. Our children practiced for the concert, and the Kenyan children sang friendship songs to us in English and Swahili.

Afterward, my students swarmed to my desk at the front of the room. They were visibly upset. Even though many of my pupils grew up in poverty, they couldn't understand the dirt-walled classroom or the makeshift furniture they had seen during the video call. The school we connected with did not look like any school they had seen in the United States. They asked if we

could do something to help their new friends. I agreed, but only if they found something to ask for in return. I knew it was vital for them to see those they were trying to help as equals.

Over the next six months, my students used hands-on materials in our classroom that were not available in Kibera to teach mathematics through a series of videos. In return, the Kenyan children sent us weekly videos teaching us basic Swahili. We played those videos for the entire school during morning news broadcasts.

As the relationship between the two groups of children developed, my students learned of the issues with water-borne illness in the slum. They built a website and partnered with children in Greece and Kansas to fundraise for water filters that protected their friends.

My students learned many of the required Pennsylvania mathematics, language arts, and science standards through interacting with Kenyan friends that year. But they also developed emotional intelligence, cultural understanding, empathy, and social skills. They grew to understand themselves better and their importance in our local and global communities. Incredibly, at the end of the year, I saw students who were previously unsure of themselves blossom as self-confident leaders.

Learning and education are not synonymous. Learning is a part of education, but being educated implies much more. My 5th graders received a holistic education that year. They recognized their power to positively impact the lives of others. They found agency in their own lives and leadership skills. They saw their learning in context, and found relevance in school. Our school community became more cohesive because students were working toward a shared goal. This is what should, and can, happen regularly in public schools if we remain committed to a mission of comprehensive education.

I often think of how artificial intelligence could have improved that project, and the many others that my students have participated in over the years to improve their local and global communities. In Northeastern Pennsylvania these projects have included starting and maintaining a school garden that provides produce for our village food pantry and beginning a student-led school composting program. Internationally, they have also designed and built a bridge that allows students to go to school near the Kenya/Uganda border and designed aquaponics systems for drought-affected Malawi schools that grow food using 90% less water.

AI can help students learn foreign languages or assist non-native English speakers in their studies. It can model ways to solve mathematics problems. It can write code for websites based on provided input, such as the site my students created to fundraise in the example above. Predictive AI can effectively be used to help students organize their writing, learn the dates of historical events, and even list the similarities between William Shakespeare and General Patton. It could be a very useful *learning* tool in many ways. However, I am still not convinced that it has the potential to improve the holistic *education* of our students and our communities in ways that outweigh the dangers it poses to the health of those students and communities.

We must enact protections now in order to ensure AI is not misused in ways that undermine the goals of our public education system.

Artificial Intelligence, Learning, and Education

In the past few decades, significantly since standardized testing has risen in importance, learning has replaced education as a goal in our schools (Figure 1). As test scores and other related numerical data have become increasingly valued, teacher-collected information about the lived experience of students has become devalued in school decision-making. The "data-driven" culture in education is focused on easily obtained, impersonal, and quantifiable data. Technology companies did not create this shift but have amplified it by developing and marketing digital tools reflective of the new culture. As we discuss the future of AI and Machine Learning tools in education, it is important to recognize this trend.

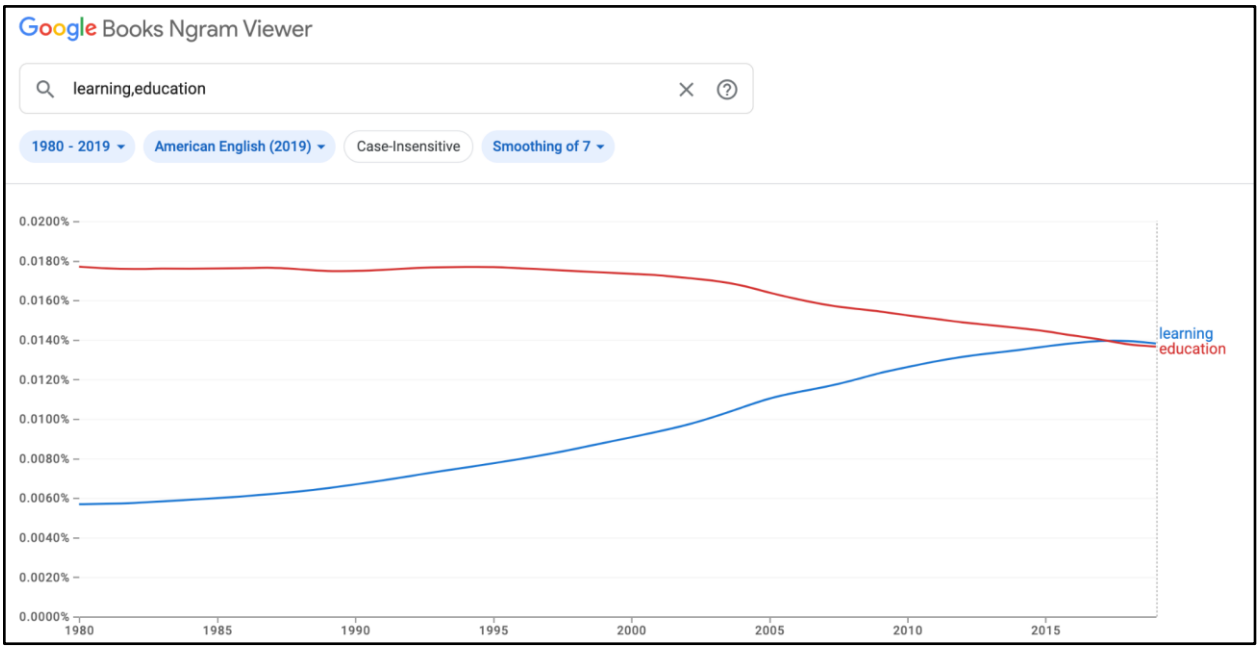

Figure 1: Google Ngram Viewer shows the increase of "learning" and the decrease of "education" in American English-language books from 1980 to 2019.

Focusing on "learning goals," "personalized learning," or asking teachers to "facilitate learning," as has been the aim of many educational technology developments since the early 2000s, can be harmful if we allow our focus to drift from a more holistic view of education and the excellent teaching that provides opportunities for students to become educated. Many of our current societal issues with social media and misinformation/disinformation, the lack of ability for citizens to have rational discourse on matters of public importance, and radicalization can be traced back to a public that has been schooled to be knowledgeable but not educated. Easily learned information, obtained without the critical thinking and emotional intelligence developed by comprehensive education, can be dangerous to a democratic society.

This is why we must critically look at the use of artificial intelligence in our schools. The new predictive AI algorithms can be used, in some cases, to make learning easier. As a teacher, I know that making learning relevant and engaging for my students is much more important than making it easy. Many times the growth that comes from overcoming educational challenges is more important than the content we learn.

Student Privacy and Transparency

Every AI algorithm is saturated with the (often unconscious) biases of its creators. When we consider that less than a quarter of machine learning researchers are women[1] and that less than 7% of AI PhD candidates in 2019 were Black or Hispanic[2], we can expect that responses from predictive AI models will skew toward male, white perspectives. What makes this more concerning is that most predictive AI being debated in education discussions right now are not transparent about their algorithms. Companies that have developed these algorithms have not disclosed the specific sources from which the programs access data. This means that when these are used by students there is no way for educators to protect against biased and false information.

As a STEM teacher, I recognize an experiment when I see one. That is what we are doing by allowing unregulated AI to be unleashed on our students and the public, and then evaluating the results sometime in the future. By that time, it could be far too late. Experimenting with AI without providing legislative protections could be catastrophic at a time when we are already facing an existential threat to democracy brought about by disinformation and misinformation on social media.

There are also significant student data concerns with using AI platforms in education without proper safeguards. Any time a prompt or response is entered into a predictive AI model data is collected by the owner of that model. This data can be used to "teach" the AI to respond in more human ways. It can also be used in ways that allow companies to better manipulate public perception about politics, the marketing of products, and other societal opinions. We have already seen AI used for these purposes in social media. Predictive AI models used in education right now have not been transparent about how they are collecting data and what other entities are using their data (or algorithms built on that data) to manipulate the public. Our children could be conversing with AI chatbots to learn algebra while their responses are used to create better marketing campaigns or ideologically radicalize them. These outcomes are unethical and contrary to the reasons why I chose to dedicate my life to public education.

Any technology that collects student data, exposes children to biased information, or can be used for purposes that are antithetical to the purposes of public education need to be carefully evaluated and regulated. Machine learning and predictive AI does all three.

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[1] Simonite, Tom. "AI Is the Future—but Where Are the Women?" *Wired*, WIRED, 17 Aug. 2018, www.wired.com/story/artificial-intelligence-researchers-gender-imbalance/. Accessed 4 Dec. 2023.

[2] *Chapter 6: Diversity in AI*. Artificial Intelligence Index Report 2021, 2021.

Artificial Intelligence and Equitable Education

Pennsylvania has one of the most inequitable school systems in the country, as evidenced by the February 2023 Commonwealth Court school funding decision[3] and educational opportunity data. A Research for Action study released in October 2022 showed the opportunity gap between students in and out of poverty was the second largest in the country[4]. This gap and equally significant racial opportunity gaps shown in the study is related to Pennsylvania's well-documented teacher shortage crisis. The difficulty in attracting teachers for rural districts, districts that serve low-income areas, and districts with large percentages of students of color negatively impacts the abilities of those districts to provide the holistic education described above.

Many are now suggesting that AI and Machine Learning are solutions to the teacher shortage[5]. Some companies are starting to market their AI products to districts for this purpose specifically[6]. This dangerous path will widen the existing opportunity gaps and open the door to further degrading the quality of education in the Commonwealth.

When my children first went to Kindergarten, I was excited to meet their teacher. I wanted to know that they would be cared for and nurtured to be their best selves rather than simply being forced to memorize information. Now that my youngest child is a high-school senior, I still hope for the same thing from his teachers. Most parents of school-age children do. *No parent dreams that the most efficient algorithm will teach their child.*

The causes of the teacher shortage are not the focus of this testimony, but the relationship between this crisis and the increased use of machine learning must be examined. Even though the teacher shortage impacts all areas in Pennsylvania, it disproportionately harms low-income areas[7]. Using AI in the place of quality teachers would lead to the most disadvantaged students in the state being taught by impersonal, biased algorithms rather than the caring teachers we all want for our children. Affluent students would have better access to a comprehensive education, while poor children would increasingly be focused only on learning content from a machine.

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[3] 587 MD 2014 - William Penn School District, et al v. PA Department of Education, et al. https://www.pacourts.us/Storage/media/pdfs/20230207/214401-587md2014--memorandumopinionfiled(feb.7)reduced.pdf

[4] Freeman, Justis, and David Bamat. *Persistent Unequal Access to Educational Opportunity in Pennsylvania for K-12 Students*. Research for Action, Oct. 2022.

[5] Cohen, Mikaela. *"It's Only a Matter of Time before A.I. Chatbots Are Teaching in Primary Schools."* CNBC, 25 June 2023, www.cnbc.com/2023/06/25/only-a-matter-of-time-before-ai-chatbots-are-teaching-kids-in-school.html.

[6] Shchetyna, Mariana. *"Solving the Educator Shortage Crisis with AI."* Softserveinc.com, SoftServe, 12 July 2023, www.softserveinc.com/en-us/blog/solving-the-educator-shortage-crisis-with-ai. Accessed 28 Nov. 2023.

[7] "New Report Shows the National Teacher Shortage Has Only Gotten Worse Since the Pandemic." *Economic Policy Institute*, 6 Dec. 2022, www.epi.org/press/new-report-shows-the-national-teacher-shortage-has-only-gotten-worse-since-the-pandemic/#:~:text=Teacher%20vacancy%20rates%20have%20also. Accessed 28 Nov. 2023.

Artificial Intelligence Education Policy Suggestions

1. Protect student privacy and data. Predictive AI models and machine learning platforms should only be used if they are transparent about what data they collect from users and are restricted from sharing student data. In addition, they must be required to be transparent about what data is being used to generate responses and what other entities have access to their algorithms. We must learn from our failures in understanding the impact of social media on children and society and proactively enact safeguards. This means establishing a foundation in statute for the minimum requirements that must be met for school boards and publicly funded charter schools to enter contracts with AI/machine learning companies.
2. Provide teachers with the professional learning opportunities and time needed to learn about AI and use it judiciously in their classrooms. Many teachers are unaware of new developments in Artificial Intelligence or how these developments could impact education and society. This professional learning must be independent of the companies that stand to profit from AI. Ongoing discussions with current classroom teachers at the primary, middle school, and high school levels should help ensure this learning does not add additional burden to our already-overwhelmed professional staff.
3. Enact aggressive legislation to recruit and retain new teachers, especially in low-income areas and high-need subjects. At the same time, safeguards must be implemented to prevent school districts from intentionally using predictive AI models and machine learning platforms instead of teachers. This practice is already gaining popularity in the K-12 virtual academies used in many Pennsylvania school districts and cyber charter schools, resulting in less contact with qualified, caring human teachers.

If policymakers take bold action, it is possible to safely harness the positive potential of AI models and machine learning platforms in education. If state policy, and society in general, does not keep pace with the rate of technological innovation, educators will always be playing catch-up, and our most vulnerable communities will suffer more significant inequities in educational access. I urge all Pennsylvania policymakers to lead rather than reacting to other state or national efforts. Thank you for the opportunity to submit my written testimony and to speak with you all today. I will be happy to answer any of your questions.

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CHESTER COUNTY
DISTRICT ATTORNEY'S OFFICE

House Democratic Policy Committee Hearing
Written Testimony of Christopher de Barrena-Sarobe

My name is Christopher de Barrena-Sarobe. Thank you for allowing me to take part in this policy session. I am currently the District Attorney Elect in Chester County, and—since last week—have been lucky enough to start early as First Assistant District Attorney in the office. I have significant experience as a prosecutor. I worked at the Chester County District Attorney's Office from 2009 to 2015. When I left, I was in charge of the Drug and Organized Crime Unit and just beginning to realize how much changing technology was going to affect everything that we do in law enforcement.

I spent the next 7 years of my career at the United States Attorney's Office in the District of Delaware, working as a federal prosecutor. There, I had the privilege of working with practically every federal law enforcement agency and being exposed to some of the most complex cases in the country. Adjusting to changes in technology has always been critical to law enforcement's success—we cannot succeed without changes in the law.

I am far from an expert in AI—I had not heard of ChatGPT until a friend told me about it a year ago—but what I can tell you is that criminals are aware of it. It may not be daily news, but the most sophisticated criminals are using AI, exploiting others with it, and using it to insulate themselves from law enforcement. So, I thank this committee for taking on this issue and hope that this discussion leads to a much-needed update of our criminal laws.

I want to take this time to urge you to criminalize computer-generated child pornography that is designed mimic real life. Computer-generated child pornography has existed for decades. It is a real problem, and the images are becoming more realistic.

As you likely already know, child pornography is one of the first steps on a path to the actual sexual abuse of children. According to investigators that work these cases daily, many of the computer-generated images that they come across depict both sexual abuse and graphic violence towards children. So, someone who views these images is not only someone who is deeply disturbed—they are dangers to our children. They need to be investigated and prosecuted before they commit a contact offense.

A child predator's attraction to these images is often based on how realistic the images appear. Cartoon or anime-style images depicting child pornography are commonly encountered by investigators. Computer-generated images are also common and seen by those attracted to them as more desirable than cartoons if they appear to depict actual children. This level of realism has improved over time—and thanks to AI these images may soon be practically indistinguishable from real life. My team of experienced investigators have a real fear is that AI is going to help cultivate a new generation of contact offenders with highly realistic child pornography. Our federal counterparts are already starting to see these cases and charging them. For example, about a month ago, a North Carolina man was sentenced to 40 years for—among other crimes—using AI to create child pornography.

Because the Commonwealth's child pornography laws do not cover realistic looking computer-generated and AI generated images, we are unable to charge these crimes and thus unable to fully protect our children. In most cases where investigators find computer-generated images, they are found within a large catalog of actual child pornography—meaning investigators can still charge the perpetrator with a crime. But one Chester County Detective told me last week that he has personally worked 5-10 cases where computer-generated images were the only images found on a perpetrator's electronic device, and each

of the cases had to be closed because there was no crime to charge. And that is just one Detective in one mid-sized County. Imagine what the numbers would be if we asked this question to investigators statewide.

I am asking you to close this ever-expanding loophole in Pennsylvania's child pornography law. Criminalize computer-generated images—whether through AI, photoshop, or some other computer program—that appear to mimic real life. Our children deserve the fullest protection possible, and a change in the law will give law enforcement a greater ability to stop child abuse before it happens.

Respectfully submitted,

/s/ Christopher de Barrena-Sarobe
Christopher de Barrena-Sarobe
First Assistant District Attorney
District Attorney Elect
Chester County DA's Office

Date: December 11, 2023