

THE IMPACT OF CHATGPT ON CYBERCRIME AND WHY EXISTING CRIMINAL LAWS ARE ADEQUATE

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INTRODUCTION

ChatGPT (“Chat Generative Pre-trained Transformer”) has intrigued the world, alarmed educators, and delighted technophiles since it was released to the public in late 2022. This chatbot technology—a form of Generative Artificial Intelligence (“AI”)—comes up with text outputs in response to user questions and prompts. ChatGPT’s ability to mimic human conversational style and breadth of knowledge has helped shove it into the limelight. ChatGPT evangelists claim that this is a pivotal moment in the digital age and that it will revolutionize everything.

This Essay analyzes the impact ChatGPT has on three cybercrimes and argues that new criminal laws are not yet necessary to address the potential dangers. Part I provides a description of ChatGPT and explains how it is different from other artificial intelligence technologies. Part II explores how ChatGPT could potentially be used in aid of three cybercrimes: hacking, spam, and phishing. The barrier to entry for hacking might be lowered because ChatGPT can be used by amateur cybercriminals to develop code that hacks computers. ChatGPT’s notable command of language might make it a convenient tool for nefarious actors to avoid spam filters and create targeted phishing attacks. Part III concludes that existing cybercriminal laws are sufficient to address these concerns and uncertainty around how ChatGPT will be used in the future cautions against criminalization.

I. CHATGPT: TECHNOLOGY, LIMITATIONS, AND DIFFERENCE

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ChatGPT is a Generative Artificial Intelligence technology created by the company OpenAI.¹ Generative AI technologies can create new content based on data on which they have been trained.² For example, Generative AI can create new images,³ music,⁴ and text.⁵ ChatGPT is a text-based Generative AI technology.⁶ It can perform a range of text-based tasks such as summarizing novels, creating its own poetry, and drafting emails. For example, in response to the query “create a sentence about hiking,” ChatGPT provided: “Hiking is a wonderful way to connect with nature and explore the beauty of the great outdoors.”⁷ When asked to make the sentence more “dramatic,” it responded: “Embarking on a hiking adventure is like diving into the heart of Mother Nature's magnificence, an awe-inspiring journey to uncover the hidden treasures of the great outdoors.”⁸

ChatGPT has become the fastest growing consumer application in history, reaching 100 million active monthly users within two months

¹ Ryan Browne, *All you need to know about ChatGPT, the A.I. chatbot that's got the world talking and tech giants clashing*, CNBC (Apr. 17, 2023), <https://www.cnbc.com/2023/02/08/what-is-chatgpt-viral-ai-chatbot-at-heart-of-microsoft-google-fight.html>.

² Nick Routley, *What is generative AI? An AI explains*, WORLD ECONOMIC FORUM (Feb. 6, 2023), <https://www.weforum.org/agenda/2023/02/generative-ai-explain-algorithms-work>.

³ James Vincent, *All these images were generated by Google's latest text-to-image AI*, THE VERGE (May 24, 2022), <https://www.theverge.com/2022/5/24/23139297/google-imagen-text-to-image-ai-system-examples-paper>.

⁴ Kelley Bishop, *Is AI Music a Genuine Threat To Real Artists?*, VICE (Feb. 16, 2023), <https://www.vice.com/en/article/88qzpa/artificial-intelligence-music-industry-future>.

⁵ Alison Flood, *'A box of light': AI inspired by British verse attempts to write poetry*, THE GUARDIAN (Mar. 20, 2021), <https://www.theguardian.com/books/2021/mar/20/a-box-of-light-ai-inspired-by-british-verse-attempts-to-write-poetry>.

⁶ *Introducing ChatGPT*, OPEN AI, <https://openai.com/blog/chatgpt> (last visited Mar. 19, 2023).

⁷ ChatGPT generated this output in response to the author's prompt on April 29, 2023, on the website <https://chat.openai.com/>. ChatGPT was running on GPT 3.5.

⁸ ChatGPT generated this output in response to the author's prompt on April 29, 2023, on the website <https://chat.openai.com/>. ChatGPT was running on GPT 3.5.

of launching.⁹ People have used ChatGPT to create meal plans,¹⁰ write love poems,¹¹ solve coding problems,¹² market media,¹³ generate lecture notes,¹⁴ write college essays,¹⁵ and publish books.¹⁶ The technology has also generated backlash. For example, New York City’s Department of Education banned ChatGPT from its public school network and devices for fear of inhibiting critical thinking skills in students.¹⁷ ChatGPT’s admirers claim such technologies will “change our world” by increasing efficiency in areas like office work.¹⁸ On the other hand, people like author Ian Bogost have argued that ChatGPT is

⁹ Krystal Hu, *ChatGPT sets record for fastest-growing user base - analyst note*, REUTERS (Feb. 2, 2023), <https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/>.

¹⁰ David Lumb, *How ChatGPT's AI Chatbot Can Lower Your Bills, Plan Your Meals and More*, CNET (Dec. 10, 2022), <https://www.cnet.com/tech/computing/the-five-best-uses-so-far-for-chatgpts-ai-chatbot/>.

¹¹ Hana Khalyleh, *We asked an AI for Valentine's Day poems about Cincinnati. Here's how they came out*, CINCINNATI ENQUIRER (Feb. 13, 2023, 10:15 PM), <https://www.cincinnati.com/story/news/2023/02/13/chatgpt-ai-generated-valentines-day-poems-cincinnati-joe-burrow/69897721007/>.

¹² Emily Dreibelbis, *ChatGPT Passes Google Coding Interview for Level 3 Engineer With \$183K Salary*, PC MAG (Feb. 1, 2023), <https://www.pcmag.com/news/chatgpt-passes-google-coding-interview-for-level-3-engineer-with-183k-salary>.

¹³ Ann Gynn, *How an Honest Talk With ChatGPT Surprised Even a Veteran Editor*, CONTENT MARKETING INSTITUTE (Jan. 18, 2023), <https://contentmarketinginstitute.com/articles/chatgpt-content-marketing-experiment/>.

¹⁴ Jonathan Vanian, *Why tech insiders are so excited about ChatGPT, a chatbot that answers questions and writes essays*, CNBC (Dec. 13, 2022), <https://www.cnbc.com/2022/12/13/chatgpt-is-a-new-ai-chatbot-that-can-answer-questions-and-write-essays.html>.

¹⁵ Stephen Marche, *The College Essay Is Dead*, THE ATLANTIC (Dec. 6, 2022), <https://www.theatlantic.com/technology/archive/2022/12/chatgpt-ai-writing-college-student-essays/672371/>.

¹⁶ Greg Bensinger, *ChatGPT launches boom in AI-written e-books on Amazon*, REUTERS (Feb. 21, 2023), <https://www.reuters.com/technology/chatgpt-launches-boom-ai-written-e-books-amazon-2023-02-21/>.

¹⁷ Kalhan Rosenblatt, *ChatGPT banned from New York City public schools' devices and networks*, NBC NEWS (Jan. 5, 2023), <https://www.nbcnews.com/tech/tech-news/new-york-city-public-schools-ban-chatgpt-devices-networks-rcna64446>.

¹⁸ Rohan Goswami, *Bill Gates thinks A.I. like ChatGPT is the 'most important' innovation right now*, CNBC (Feb. 10, 2023), <https://www.cnbc.com/2023/02/10/bill-gates-says-ai-like-chatgpt-is-the-most-important-innovation.html>.

merely a toy to play with words rather than a useful tool.¹⁹

This Part provides an overview of ChatGPT. Section A discusses the technology behind ChatGPT. Section B explains the limitations of ChatGPT. Finally, Section C compares ChatGPT to other artificial intelligence technologies and shows how it is different.

A. ChatGPT's Technology

ChatGPT is designed for human conversation.²⁰ It is built using a machine learning technique called “deep learning” which is a subfield of artificial intelligence and is defined as the capability of a machine to imitate human intelligence.²¹ Machine learning algorithms are trained on existing datasets²² and can be used to describe (iPhone photos labeling pictures of your pets as “dog” or “cat”²³), predict (forecasting retail demand²⁴), or prescribe (YouTube recommending videos²⁵). Deep learning is a machine learning technique that uses complex neural networks that imitates a human brain.²⁶ Like the human brain, artificial “cells, or nodes, are connected, with each cell processing inputs and

¹⁹ Ian Bogost, *ChatGPT Is Dumber Than You Think*, THE ATLANTIC (Dec. 7, 2022), <https://www.theatlantic.com/technology/archive/2022/12/chatgpt-openai-artificial-intelligence-writing-ethics/672386/>.

²⁰ The technical term for the use of computers to understand and process human language is Natural Language Processing (NLP). Ben Lutkevich, *natural language processing (NLP)*, TECHTARGET (Jan. 2023), <https://www.techtarget.com/searchenterpriseai/definition/natural-language-processing-NLP>.

²¹ Sara Brown, *Machine learning, explained*, MIT SLOAN SCHOOL OF MANAGEMENT (Apr. 21, 2021), <https://mitsloan.mit.edu/ideas-made-to-matter/machine-learning-explained>.

²² *Id.*

²³ *Find photos by keyword in Photos on Mac*, APPLE, <https://support.apple.com/guide/photos/find-photos-by-keyword-pht8d0ad5198/mac> (last visited Mar. 19, 2023).

²⁴ *The Complete Guide to Machine Learning in Retail Demand Forecasting*, RELEX SOLUTIONS, <https://www.relexsolutions.com/resources/machine-learning-in-retail-demand-forecasting/> (last visited Mar. 19, 2023).

²⁵ Alexis C. Madrigal, *How YouTube's Algorithm Really Works*, THE ATLANTIC (Nov. 8, 2018), <https://www.theatlantic.com/technology/archive/2018/11/how-youtubes-algorithm-really-works/575212/>

²⁶ Brown, *supra* note 21.

producing an output that is sent to other neurons.”²⁷ This allows the system to weigh data variables at different layers of the network.²⁸ For example, one layer might process individual features such as the eyes or nose while another layer considers their relationship to one another to decide if it is looking at a face.²⁹

There are three ways to train these models: supervised learning, unsupervised learning, and reinforcement learning.³⁰ Supervised learning trains the algorithm with pre-labeled datasets, such as a repository of pictures of animals already named by humans as “dogs,” “cats,” and more.³¹ The algorithm then learns to categorize pictures of animals not in the training data into those prescribed categories.³² Unsupervised learning looks at unlabeled data to find patterns.³³ For example, unsupervised learning models can go through a large dataset and discover anomalies that might indicate faulty equipment.³⁴ Reinforcement learning trains the algorithm by correcting the mistakes it makes and encouraging the right decisions it makes.³⁵ For example, programmers can correct an autonomous vehicle algorithm when it fails to detect pedestrians and reward it when it correctly does so.³⁶

ChatGPT relies on all three forms of learning. In the “Pre-Training” phase, a “Transformer” model is used on a large amount of data to train the algorithm in an unsupervised way.³⁷ The “Pre-trained Transformer”

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.*

³¹ *Id.*

³² *Id.*

³³ *Id.*

³⁴ *What is unsupervised learning?*, IBM, <https://www.ibm.com/topics/unsupervised-learning> (last visited Mar. 19, 2023).

³⁵ Brown, *supra* note 21.

³⁶ *Id.*

³⁷ Prior to the introduction of “Transformer” model (the “T” in ChatGPT), algorithms could only process language sequentially and could not be trained on large datasets. Dale Markowitz, *Transformers, Explained: Understand the Model Behind GPT-3, BERT, and T5*, DALE ON AI (May 6, 2021), <https://daleonai.com/transformers-explained>. The “Transformer” model overcomes this limitation and allows training at scale. *Id.*; see also IMPROVING LANGUAGE UNDERSTANDING WITH UNSUPERVISED LEARNING, <https://openai.com/blog/language-unsupervised/> (last visited Mar. 19, 2023) (“first we train a transformer model on a very large amount of data in an unsupervised manner — using language modeling as a training signal.”).

part of ChatGPT’s acronym comes from here. Once this Pre-Training was complete, ChatGPT was fine-tuned specifically for the purpose of providing a conversational interface, using supervised learning where “human AI trainers provided conversations in which they played both sides—the user and an AI assistant.”³⁸ Then, AI trainers ranked ChatGPT responses by quality to “create a reward model for reinforcement learning.”³⁹

To summarize how ChatGPT works, consider the following explanation from ChatGPT itself in response to a prompt on its technology:

Sure! I am a language model powered by artificial intelligence, specifically the GPT-3.5 architecture. My main function is to generate human-like text by predicting the most likely sequence of words based on the input I receive. I was trained on a massive dataset of text from the internet, books, and other sources, using a process called deep learning that allows me to identify patterns and relationships between words and phrases. When you ask me a question or give me a prompt, I use these patterns and relationships to generate a response that is hopefully relevant and coherent.⁴⁰

B. ChatGPT’s Limitations

ChatGPT is by no means perfect. Its dataset is limited to information prior to late 2021.⁴¹ It has a high rate of inaccurate answers in some

³⁸ OPEN AI, *supra* note 6.

³⁹ *Id.*

⁴⁰ ChatGPT generated this output in response to the author’s prompt on April 29, 2023, on the website <https://chat.openai.com/>. ChatGPT was running on GPT 3.5. The author prompted “Can you explain the technology behind you including how you generate text. Make it very brief - one paragraph. Make it very simple.”

⁴¹ *Models*, OPEN AI, <https://platform.openai.com/docs/models/overview> (last visited Ap. 28, 2023).

contexts.⁴² For instance, it “hallucinates”⁴³—a term used to describe when chatbots create “content that is nonsensical or unfaithful to the provided source content.”⁴⁴ This happens for many reasons, including limitations in the source data and algorithm modeling choices.⁴⁵ It also lacks understanding beyond mere functional language rules⁴⁶ and produces clichés.⁴⁷ OpenAI notes that ChatGPT is sensitive to the phrasing of the questions, can be verbose, and may display biased behavior despite the built-in safety features.⁴⁸ Since ChatGPT uses complex deep learning algorithms, it is often a black box with no clear reason why it provided a certain output.⁴⁹

C. ChatGPT’s Differences to Other Artificial Intelligence Technologies

Artificial intelligence technologies often use sophisticated

⁴² James Vincent, *AI-generated answers temporarily banned on coding Q&A site Stack Overflow*, *The Verge* (Dec. 5, 2022), <https://www.theverge.com/2022/12/5/23493932/chatgpt-ai-generated-answers-temporarily-banned-stack-overflow-llms-dangers>.

⁴³ See, e.g., Matteo Wong, *AI Search Is a Disaster*, *THE ATLANTIC* (Feb. 16, 2023), <https://www.theatlantic.com/technology/archive/2023/02/google-microsoft-search-engine-chatbots-unreliability/673081/>; Charles Seife, *The Alarming Deceptions at the Heart of an Astounding New Chatbot*, *SLATE* (Dec. 13, 2022), <https://slate.com/technology/2022/12/davinci-003-chatbot-gpt-wrote-my-obituary.html>.

⁴⁴ Ziwei Ji, Nayeon Lee, Rita Frieske, Tiezheng Yu, Dan Su, Yan Xu, Etsuko Ishii, Ye Jin Bang, Andrea Madotto, and Pascale Fung, *Survey of Hallucination in Natural Language Generation*. *ACM Comp. Surv.* 55, 12, Article 248 (Dec. 2023), <https://doi.org/10.1145/3571730>.

⁴⁵ *Id.*

⁴⁶ Matteo Wong, *The Difference Between Speaking and Thinking*, *THE ATLANTIC* (Jan. 31, 2023), <https://www.theatlantic.com/technology/archive/2023/01/chatgpt-ai-language-human-computer-grammar-logic/672902/>.

⁴⁷ Kaitlyn Tiffany, *Welcome to the Golden Age of Clichés*, *THE ATLANTIC* (Feb. 21, 2023), <https://www.theatlantic.com/technology/archive/2023/02/ai-chatbots-cliche-writing/673143/>.

⁴⁸ OPEN AI, *supra* note 6.

⁴⁹ *Why is ChatGPT Making Waves in the AI Market?*, *GARTNER*, <https://www.gartner.com/en/newsroom/press-releases/2022-12-08-why-is-chatgpt-making-waves-in-the-ai-market> (last visited Mar. 19, 2023).

algorithms that can solve complex problems.⁵⁰ Such algorithms are used to recommend movies on streaming services,⁵¹ provide results on search engines,⁵² and decide the fastest route on map applications.⁵³ Generative AI like ChatGPT on the other hand can develop original content. Google search will give you results for SparkNotes and other websites when asked to summarize *The Great Gatsby*; ChatGPT will create its own summary.⁵⁴

Generative AI is not limited to text generation. The underlying technology can be used to build tools that are optimized for different tasks.⁵⁵ OpenAI, the company that owns ChatGPT, has products such as MuseNet⁵⁶ (AI music generation) and DALL-E⁵⁷ (AI-created images based on text inputs). Other uses of Generative AI include designing novel drugs, developing new materials, and creating synthetic data for research.⁵⁸

Despite these other non-text based uses of Generative AI, ChatGPT is more popular than any of them so far.⁵⁹ There could be many reasons for ChatGPT's popularity. ChatGPT's conversational style of "human-

⁵⁰ *Artificial intelligence (AI) algorithms: a complete overview*, TABLEAU, <https://www.tableau.com/data-insights/ai/algorithms#algorithm-uses> (last visited Apr. 28, 2023).

⁵¹ *Recommendations*, NETFLIX, <https://research.netflix.com/research-area/recommendations> (last visited Apr. 28, 2023).

⁵² *How results are automatically generated*, GOOGLE, <https://www.google.com/search/howsearchworks/how-search-works/ranking-results/> (last visited Apr. 28, 2023).

⁵³ Michael Byrne, *The Simple, Elegant Algorithm That Makes Google Maps Possible*, VICE (Mar. 22, 2015), <https://www.vice.com/en/article/4x3pp9/the-simple-elegant-algorithm-that-makes-google-maps-possible>.

⁵⁴ Google launched Bard as a competitor to ChatGPT and will likely soon be able to do the same. Sundar Pichai, *An important next step on our AI journey*, THE KEYWORD (Feb. 6, 2023), <https://blog.google/technology/ai/bard-google-ai-search-updates/>.

⁵⁵ *GPT-3 powers the next generation of apps*, OPEN AI, <https://openai.com/blog/gpt-3-apps> (last visited Mar. 19, 2023).

⁵⁶ *MuseNet*, OPEN AI, <https://openai.com/research/musenet> (last visited Apr. 28, 2023).

⁵⁷ *DALL-E 2*, OPEN AI, <https://openai.com/product/dall-e-2> (last visited Apr. 28, 2023).

⁵⁸ *Beyond ChatGPT: The Future of Generative AI for Enterprises*, GARTNER, <https://www.gartner.com/en/articles/beyond-chatgpt-the-future-of-generative-ai-for-enterprises> (last visited Mar. 19, 2023).

⁵⁹ Hu, *supra* note 9.

like responses and dialogue,”⁶⁰ its immediate potential for real world application,⁶¹ and breadth of use cases⁶² seem the most obvious. Curious students across the world might want to try the technology for their class assignments.⁶³ Further, its popularity may also have been driven by concerns about its impact on writing, something profoundly human that machines have thus far not successfully done.⁶⁴ ChatGPT, like other AI technology, will continue to rapidly evolve in the future.⁶⁵

II. HOW CHATGPT CAN BE USED FOR CYBERCRIMES

Like all technologies, ChatGPT can be used for illegal purposes. This Part analyzes the potential impact of ChatGPT on three cybercrimes: hacking, spam, and phishing. It demonstrates how ChatGPT might lower the barrier to entry for hacking, help avoid spam filters, and support targeted phishing attacks.

⁶⁰ Lexi Lonas, *What is ChatGPT? AI technology sends schools scrambling to preserve learning*, THE HILL (Jan. 18, 2023), <https://thehill.com/policy/technology/3816348-what-is-chatgpt-ai-technology-sends-schools-scrambling-to-preserve-learning/>.

⁶¹ Magdalena Petrova, *ChatGPT has made AI the hot new thing in Silicon Valley, and investors are suddenly very interested*, CNBC (Feb. 2, 2023), <https://www.cnbc.com/2023/02/02/chatgpt-introduced-ai-to-the-masses-and-its-already-affecting-us-.html>.

⁶² Ethan Mollick, *ChatGPT Is a Tipping Point for AI*, HARVARD BUSINESS REVIEW (Dec. 14, 2022), <https://hbr.org/2022/12/chatgpt-is-a-tipping-point-for-ai>.

⁶³ See Samantha Murphy Kelly, *ChatGPT passes exams from law and business schools*, CNN (Jan. 26, 2023, 01:35 PM), <https://www.cnn.com/2023/01/26/tech/chatgpt-passes-exams/index.html>.

⁶⁴ See Jonathan Malesic, *What ChatGPT Can't Teach My Writing Students*, THE ATLANTIC (Feb. 9, 2023), <https://www.theatlantic.com/ideas/archive/2023/02/writing-education-language-empathy-ai-chatgpt-age/672999/> (arguing that writing is an ethical act which students cannot learn successfully through ChatGPT); Walt Hunter, *What Poets Know That ChatGPT Doesn't*, THE ATLANTIC (Feb. 13, 2023), <https://www.theatlantic.com/books/archive/2023/02/chatgpt-ai-technology-writing-poetry/673035/> (arguing that ChatGPT is incapable of writing quality poetry because it doesn't come “from the felt necessity to speak a truth, whatever kind of truth that might be”).

⁶⁵ Open AI released a new GPT engine to power ChatGPT called GPT-4 on March 14, 2023. James Vincent, *OpenAI announces GPT-4 — the next generation of its AI language model*, THE VERGE (Mar. 14, 2023, 1:06 PM), <https://www.theverge.com/2023/3/14/23638033/openai-gpt-4-chatgpt-multimodal-deep-learning>.

A. Hacking

Hacking is the “act of identifying and then exploiting weaknesses in a computer system or network, usually to gain unauthorized access to personal or organizational data.”⁶⁶ The Federal Computer Fraud and Abuse Act (“CFAA”) criminalizes hacking.⁶⁷ Examples of computer code types used for hacking include viruses,⁶⁸ spyware,⁶⁹ and ransomware.⁷⁰ The cost of hacking crimes can be enormous to the entities whose computers are affected. For example, the 1999 Melissa Virus—a malicious computer program that disrupted a million email accounts—cost businesses and government an estimated \$80 million for cleanup and repairs of affected computers.⁷¹ In addition to the monetary cost, tools like spyware, which are used to install software that spies on users without consent, cause other harms such as “reduc[ing] consumers’ confidence in online safety and their willingness to participate in modern electronic commerce.”⁷²

⁶⁶ *What is hacking? And how to prevent it*, KASPERSKY, <https://www.kaspersky.com/resource-center/definitions/what-is-hacking> (last visited March 19, 2023).

⁶⁷ See 18 U.S.C. § 1030 (“Whoever . . . intentionally accesses a computer without authorization or exceeds authorized access, and thereby obtains . . . information from any protected computer”); Office of Legal Educ., Prosecuting Comp. Crimes, U.S. DEP’T OF JUSTICE (2010), <http://www.justice.gov/criminal/cybercrime/docs/ccmanual.pdf> (“[P]ersons who access computers ‘without authorization’ will typically be outsiders (e.g., *hackers*).”) (emphasis added).

⁶⁸ *What Is a Computer Virus and How Does It Work?*, AVAST, <https://www.avast.com/c-computer-virus> (last visited March 19, 2023).

⁶⁹ *What is Spyware?*, KASPERSKY, <https://usa.kaspersky.com/resource-center/threats/spyware> (last visited March 19, 2023).

⁷⁰ *Frequently Asked Questions - Ransomware*, BERKELEY INFORMATION SECURITY OFFICE, <https://security.berkeley.edu/faq/ransomware/> (last visited March 19, 2023).

⁷¹ *The Melissa Virus*, FBI, <https://www.fbi.gov/news/stories/melissa-virus-20th-anniversary-032519> (last visited March 19, 2023).

⁷² *Spyware*, CYBERSECURITY AND INFRASTRUCTURE SECURITY AGENCY, https://www.cisa.gov/sites/default/files/publications/spywarehome_0905.pdf (last visited March 19, 2023).

ChatGPT is capable of programming and fixing mistakes in computer code.⁷³ ChatGPT’s conversational style means that users can tell ChatGPT in plain language—without the user having to know the technical programming language—to create computer code that does what the user wants the code to do.⁷⁴ Unfortunately there are reports that nefarious actors are using this functionality to create code that can be used for illegal purposes.⁷⁵ For example, ChatGPT has been used to help create code that can potentially steal information and take over a computer without permission.⁷⁶

A report by Recorded Future—a cybersecurity company— notes that ChatGPT can be used to create variations of existing malicious code to evade anti-virus software.⁷⁷ Even though ChatGPT has built-in restrictions that flag certain requests as malicious, these can be overcome by using a different prompt that tricks the program.⁷⁸ For example, instead of asking directly for a malicious code called clipper⁷⁹ (which would be rejected by ChatGPT), the researchers asked ChatGPT for a program that modifies clipboard data and replaces it with something else when a cryptocurrency address is copied.⁸⁰ This is functionally equivalent to what malicious clipper does—stealing cryptocurrencies.

⁷³ Dominik Sobania et al., *An Analysis of the Automatic Bug Fixing Performance of ChatGPT*, ARXIV (Jan. 20, 2023, 12:01 PM), https://www.researchgate.net/publication/367339183_An_Analysis_of_the_Automat ic_Bug_Fixing_Performance_of_ChatGPT.

⁷⁴ *Id.* See also Stephanie Glen, *ChatGPT writes code, but won't replace developers*, TECHTARGET (Dec. 14, 2022), <https://www.techtaraget.com/searchsoftwarequality/news/252528379/ChatGPT-writes-code-but-wont-replace-developers> (arguing that ChatGPT’s dialog method is an advancement over existing code autocomplete programs).

⁷⁵ Sam Sabin, *Hackers are already abusing ChatGPT to write malware*, AXIOS (Jan. 10, 2022), <https://www.axios.com/2023/01/10/hackers-chatgpt-malware-cybercrime-ai>.

⁷⁶ *OPWNAI: Cybercriminals Starting To Use ChatGPT*, CHECK POINT RESEARCH, <https://research.checkpoint.com/2023/opwnai-cybercriminals-starting-to-use-chatgpt/> (last visited March 19, 2023).

⁷⁷ *I, Chatbot*, RECORDED FUTURE, <https://go.recordedfuture.com/hubfs/reports/cta-2023-0126.pdf> (last visited March 19, 2023).

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ *Id.*

Although Recorded Future believes that it is unlikely that nation states or sophisticated criminal entities with high monetary and technical resources would be using ChatGPT, they fear that it lowers the barrier to entry for less experienced malicious actors who have less advanced computer skills and fewer resources.⁸¹ This is because ChatGPT provides “real-time examples, tutorials, and resources for threat actors that might not know where to start.”⁸² It almost eliminates the need-to-know programming and reduces the effort it takes to write malicious code from scratch. In short, someone with little or no prior programming knowledge may be able to get ChatGPT to generate malicious code.

B. Spam

The Department of Justice defines spam as unsolicited commercial messages that are most commonly sent via e-mail.⁸³ The Federal Controlling the Assault of Non-Solicited Pornography and Marketing Act of 2003 (“CAN-SPAM” Act) criminalizes sending spam under certain circumstances, such as when multiple commercial emails are sent with the intent to deceive the origin of the message.⁸⁴ Spammers send these spam messages to a lot of people so that even if a small percentage of recipients open them and fall for the scam, the spammers would make money.⁸⁵ E-mail services like Gmail deploy spam filter algorithms to filter out such e-mails. These algorithms analyze header data (e.g., G00gle vs. Google), compare senders with blacklists of

⁸¹ *Id.* But see *ChatGPT May Already Be Used in Nation State Cyberattacks, Say IT Decision Makers in BlackBerry Global Research*, BLACKBERRY, <https://www.blackberry.com/us/en/company/newsroom/press-releases/2023/chatgpt-may-already-be-used-in-nation-state-cyberattacks-say-it-decision-makers-in-blackberry-global-research> (last visited March 19, 2023).

⁸² RECORDED FUTURE, *supra* note 77.

⁸³ *Spam*, UNITED STATES DEP’T OF JUST., <https://www.justice.gov/doj/spam> (last visited March 19, 2023).

⁸⁴ 18 U.S.C. § 1037(a)(2).

⁸⁵ See *Why The Spammers Are Winning*, BUSINESS INSIDER, <https://www.businessinsider.com/why-spam-works-2013-8> (last visited March 19, 2023).

known spammers, and deploy content filters.⁸⁶ Algorithms use content filters to analyze the body of the message and look for clues that might indicate spam. ChatGPT might be able to get around this because it is capable of rewording sentences rapidly. Consider the following “conversation” with ChatGPT.⁸⁷

Prompt:

Give me an example of a spam email sentence

ChatGPT:

“Congratulations! You have won a free vacation to the Caribbean. Click here to claim your prize now!”

Prompt:

Reword the sentence you gave me.

ChatGPT:

Here's a reworded version: “You have been selected as the lucky winner of a complimentary trip to the beautiful Caribbean. To claim your prize, please click on the link provided.”

Since spam filters are on the lookout for how an email is written,⁸⁸ ChatGPT will allow nefarious actors to find the exact language that works in avoiding spam filters. This might potentially result in an increasing number of spam emails that violate the CAN-SPAM Act and are not captured by spam filters. Of course this a cat-and-mouse game where spam filters get increasingly better at detecting such language, and the use of ChatGPT-like technology also gets increasingly better at language processing.

⁸⁶ Paul Gillin, *The Art and Science of How Spam Filters Work*, SECURITY INTELLIGENCE (Nov. 2, 2016), <https://securityintelligence.com/the-art-and-science-of-how-spam-filters-work/>.

⁸⁷ ChatGPT generated this output in response to the author’s prompt on April 29, 2023, on the website <https://chat.openai.com/>. ChatGPT was running on GPT 3.5.

⁸⁸ Jahnvi Sivaram et al., *Adversarial Machine Learning: The Rise in AI-Enabled Crime and its Role in Spam Filter Evasion* (July 6, 2022). <https://ssrn.com/abstract=4155496> (“Spam filters utilise text classifiers and rule based filters to classify emails, and spammers attempt to get past these defences by making words unintelligible.”).

C. Phishing

The Cybersecurity and Infrastructure Security Agency defines Phishing as a type of attack that uses “email or malicious websites to solicit personal information by posing as a trustworthy organization.”⁸⁹ It is considered a form of fraud and therefore criminalized under the Federal Wire Fraud Act.⁹⁰ Phishing happens when, for example, a user receives an email from a fake account called “apple@appleserv.com” asking them to login and re-verify the payment method in their apple account. The goal of phishing is to get users to disclose their credit card information by pretending to be a reliable source like Apple.

ChatGPT, despite its verbosity and use of clichés, can recognize patterns in language and produce similar outputs. For example, I asked ChatGPT to write something similar to the following e-mail that I received from Amtrak regarding an upgrade before my trip.⁹¹

Amtrak’s Email:

⁸⁹ *Avoiding Social Engineering and Phishing Attacks*, CYBERSECURITY AND INFRASTRUCTURE SECURITY AGENCY, <https://www.cisa.gov/news-events/news/avoiding-social-engineering-and-phishing-attacks> (last visited April 28, 2023); *see also Social Engineering Attacks*, BLACKBERRY, <https://www.blackberry.com/us/en/solutions/endpoint-security/ransomware-protection/social-engineering> (last visited March 19, 2023) (describing Social Engineering attacks such as Phishing as “a type of cyberattack that uses psychological manipulation techniques to gain a target's trust to get the target to divulge personal information, click on web links, or open malicious email attachments.”).

⁹⁰ *See* 18 U.S.C. § 1343; Mark Theoharis, *Phishing: Sentencing and Penalties*, INVESTOPEDIA (Jan. 03, 2023), <https://www.criminaldefenselawyer.com/crime-penalties/federal/Phishing.htm> (“[B]ecause phishing involves solicitations that are usually sent over the Internet, the federal law against wire fraud is often used to punish phishing crime on a federal level.”).

⁹¹ ChatGPT generated this output in response to the author’s prompt on April 29, 2023, on the website <https://chat.openai.com/>. ChatGPT was running on GPT 3.5. The author promoted “I received the below from Amtrak. Write something similar in the same tone and the same length as below. ‘There's still time to make your journey more comfortable and enjoyable with Amtrak BidUp. Simply place a bid and if it is accepted, you will enjoy an enhanced experience. Dont miss out!’.”

There's still time to make your journey more comfortable and enjoyable with Amtrak BidUp. Simply place a bid and if it is accepted, you will enjoy an enhanced experience. Dont miss out!

ChatGPT:

Make your Amtrak journey even more comfortable and enjoyable with BidUp! You still have time to bid and upgrade your experience. Just submit your bid and if it gets accepted, you'll get to enjoy an enhanced experience. Don't let this opportunity slip away! Place your bid now and elevate your Amtrak journey.

Since phishing requires convincing the user of your reliability, ChatGPT can be used to figure out the style of emails that different companies use and tailor the phishing message to match their style. The dangers are even greater in spear phishing, a type of phishing that targets a specific individual or company.⁹² For example, a voice mimicking software was used to trick a company employee to wire \$240,000 by imitating an executive.⁹³ ChatGPT could be used in the text-context to similarly impersonate the writing style of an individual for nefarious purposes. This would also help nefarious actors avoid problems related to poor word choice and grammar errors that usually indicate that the message is a scam.⁹⁴ Therefore, there might be an increase in the crime of phishing because of this new technology.

III. ADDRESSING THE USE OF CHATGPT FOR CRIME

⁹² *What is Spear Phishing? - Definition*, KASPERSKY, <https://usa.kaspersky.com/resource-center/definitions/spear-phishing> (last visited March 19, 2023).

⁹³ Matt Kim, *Deepfake Voice Used to Steal Over \$240,000 in AI-Powered Heist*, IMAGINE GAMES NETWORK (Sep. 5, 2019, 4:08 PM), <https://www.ign.com/articles/2019/09/05/240000-stolen-in-worlds-first-artificial-intelligence-heist>.

⁹⁴ Stu Sjouwerman, *The Implications Of ChatGPT On Cybercrime*, FORBES (Feb. 24, 2023, 07:45 AM), <https://www.ign.com/articles/2019/09/05/240000-stolen-in-worlds-first-artificial-intelligence-heist> (arguing that this is especially true for crime organizations that operate from overseas who are not native speakers of English).

Although ChatGPT creates new opportunities for nefarious actors to engage in cybercrimes, existing criminal laws are adequate to address the problem. Further, uncertainty about the use cases of ChatGPT cautions against new criminal laws.

A. Adequacy of Existing Criminal Laws

This Section argues that existing criminal laws are sufficient to address any potential impact ChatGPT has on the cybercrimes of i) hacking, ii) spam, and iii) phishing.

1. Hacking Is Adequately Covered by The CFAA

The Federal Computer Fraud and Abuse Act (“CFAA”) prohibits a range of conduct related to hacking of computers.⁹⁵ It imposes criminal and civil penalties on “[w]hoever . . . intentionally accesses a computer without authorization or exceeds authorized access, and thereby obtains . . . information from any protected computer” or who conspires or attempts to do so.⁹⁶ The definition of a computer includes any device connected to the internet.⁹⁷

The statute criminalizes the act of hacking and does not focus on how the hacker created the code.⁹⁸ Regardless of whether the hacker

⁹⁵ *Computer Fraud and Abuse Act (CFAA)*, UNITED STATES DEPARTMENT OF JUSTICE, <https://www.justice.gov/jm/jm-9-48000-computer-fraud> (last visited March 19, 2023).

⁹⁶ 18 U.S.C. § 1030.

⁹⁷ See 18 U.S.C. § 1030(e)(2) (defining the term “protected computer” as a computer “used in or affecting interstate or foreign commerce or communication”); TJ Wong, *Is My Toaster a Computer? The Computer Fraud and Abuse Act’s Definition of “Protected Computer” in the Age of the Internet of Things*, COLUM. J.L. & SOC. PROBS. (2019) (“[C]ourts across the country have since interpreted ‘protected computer’ to encompass any computer with an internet connection.”), <https://jlsplaw.columbia.edu/2019/03/30/is-my-toaster-a-computer-the-computer-fraud-and-abuse-acts-definition-of-protected-computer-in-the-age-of-the-internet-of-things/>.

⁹⁸ 18 U.S.C. § 1030 (“Whoever . . . intentionally accesses a computer *without authorization or exceeds authorized access*, and thereby obtains . . . information from any protected computer”) (emphasis added). See also *Van Buren v. United States*, 141 S. Ct. 1648, 1652 (2021) (“[the exceeds authorized access provision] covers those who

created the code by themselves or whether they used a technology like ChatGPT, the hacker would have violated the statute.⁹⁹ Therefore, low-tech nefarious actors deploying malicious code using ChatGPT can be prosecuted under this statute. As noted by organizations like the Electronic Frontier Foundation, who have criticized the CFAA for being too punitive, even first-time offenses are punishable by up to five years in prison.¹⁰⁰ Further, all fifty states criminalize unauthorized access to computers.¹⁰¹

One might argue that new criminal laws are required because ChatGPT increases the scale of the hacking problem by making it easier for someone without a technical background to create malicious code. Even assuming there has been such an increase in scale, this argument is flawed for several reasons. First, ChatGPT has built-in restrictions that limit what the model can produce and it includes a prohibition on the generation of “code that is designed to disrupt, damage, or gain unauthorized access to a computer system.”¹⁰² Second, an increase in scale can simply be met by more prosecution under existing laws since the act of hacking is already criminalized. Third, passing such laws might deter companies like OpenAI from experimenting with these new technologies resulting in less innovation. Therefore, the CFAA and existing state laws that criminalize unauthorized access to computers are adequate to deal with the problem posed by software like ChatGPT.

2. Spam Is Adequately Criminalized Under The CAN-SPAM Act

The Federal Controlling the Assault of Non-Solicited Pornography

obtain information from particular areas in the computer—such as files, folders, or databases—to which their computer access does not extend.”).

⁹⁹ *Id.*

¹⁰⁰ *Computer Fraud And Abuse Act Reform*, ELECTRONIC FRONTIER FOUNDATION, <https://www.eff.org/issues/cfaa> (last visited March 19, 2023). *See also Van Buren is a Victory Against Overbroad Interpretations of the CFAA, and Protects Security Researchers*, ELECTRONIC FRONTIER FOUNDATION, <https://www.eff.org/deeplinks/2021/06/van-buren-victory-against-overbroad-interpretations-cfaa-protects-security> (last visited March 19, 2023).

¹⁰¹ *See Computer Crime Statutes*, NAT’L CONF. OF STATE LEGS. (May 4, 2022), <http://www.ncsl.org/research/telecommunications-and-information-technology/computer-hacking-and-unauthorized-access-laws.aspx>.

¹⁰² *Usage Policies*, OPEN AI, <https://openai.com/policies/usage-policies> (last visited April 28, 2023).

and Marketing Act of 2003¹⁰³ (“CAN-SPAM” Act) specifically criminalizes common malicious practices used in spam emails including sending multiple commercial messages with the intent to hide the identity and sending commercial emails with materially falsified headers.¹⁰⁴ States also have laws that target spam.¹⁰⁵ Whilst the act of using ChatGPT to rephrase a spam email to avoid spam filters would not violate the CAN-SPAM Act, the subsequent use of that text in spam emails would be a violation. There has not been a sufficiently dramatic increase in spam after ChatGPT to warrant criminalizing *how* spam is created in the first place. Even granting that a slight increase in spam has occurred, the ultimate act of sending such emails being criminalized is adequate for the government to prosecute individuals who misuse ChatGPT to send spam.

It could be argued that ChatGPT makes it easier for nefarious actors to work around spam filters or that a potential increase in the scale of spam warrants new criminal laws. But spam filter technology is not static and it can adapt to detect AI generated language. If there is a dramatic increase in the rate of spam that is directly traceable to technologies like ChatGPT, it might make sense to criminalize the use of generative AI for the creation of spam. However, such laws may over-criminalize conduct and may not survive First Amendment scrutiny.¹⁰⁶

3. Phishing Is Adequately Criminalized Under The Wire Fraud Act

While there is no specific federal law against phishing, other federal laws such as the Wire Fraud Act makes it effectively illegal because it

¹⁰³ Pub. L. No. 108-187, 117 Stat 2699 (2003) (codified at 15 U.S.C. §§ 7701–7713 and 18 U.S.C. § 1037).

¹⁰⁴ *Id.* at § 1037(a)(2), 1037(a)(3).

¹⁰⁵ *See, e.g.*, CAL. BUS. & PROF. CODE § 17529.5 (West 2005); 73 PA. CONS. STAT. § 2250.3 (2002); MD. CODE ANN., COM. LAW § 14-3002 (West 2002). *See also U.S. State Anti-Spam Laws: Introduction and Broader Framework*, CORNELL LAW SCHOOL LEGAL INFORMATION INSTITUTE, https://www.law.cornell.edu/wex/inbox/state_anti_spam_laws (last visited March 19, 2023).

¹⁰⁶ Jasmine McNealy, *Is Spam Free Speech?*, COLLEGE OF JOURNALISM AND COMMUNICATIONS UNIVERSITY OF FLORIDA (Aug. 22, 2017), <https://www.jou.ufl.edu/insights/spam-free-speech/>.

is carrying out a fraud using a form of interstate communication.¹⁰⁷ Some states have passed laws specifically addressing phishing where it is a crime to pretend to be a trustworthy source and collect information for fraudulent purposes.¹⁰⁸ Similar to criminal laws addressing hacking and spam, the criminal law here adequately punishes the ultimate act of phishing itself, regardless of how the message was created.

ChatGPT's extraordinary language skills, where a nefarious actor can input text written by the phishing target and ask it to provide an output in the same style, do raise concerns. It could be argued that the current legal framework which focuses on the ultimate act is not sufficient. Further, it could be argued that the speed and scale at which ChatGPT can mimic text style requires new criminal laws.

However, there are a few problems with these arguments. First, there is no empirical evidence yet that phishing has increased since ChatGPT was introduced. Second, there are other indicators apart from the content of a message, such as email addresses and phone numbers that can indicate whether the source is trustworthy. Finally, it is debatable whether ChatGPT output by itself could be used to pull off a phishing attack. A human would likely need to review the output for accuracy and therefore ChatGPT might not make things faster after all. Therefore, the existing fraud statute that covers phishing is adequate to take care of the problem.

B. Uncertainty Counsels Caution

Although some lawmakers have demonstrated an interest in passing laws focused on the ethical deployment of artificial intelligence,¹⁰⁹

¹⁰⁷ See 18 U.S.C. § 1343; THEOHARIS, *supra* note 90 (“[B]ecause phishing involves solicitations that are usually sent over the Internet, the federal law against wire fraud is often used to punish phishing crime on a federal level.”).

¹⁰⁸ See, e.g., FLA. STAT. §§ 668.703 (2006); N.Y. GEN. BUS. LAW § 390-b (McKinney 2006). See also *Computer Crime Statutes*, NAT’L CONF. OF STATE LEGS, *supra* Note 101.

¹⁰⁹ Diane Bartz, *As ChatGPT's popularity explodes, U.S. lawmakers take an interest*, REUTERS (Feb. 13, 2023, 3:22 PM), <https://www.reuters.com/technology/chatgpts-popularity-explodes-us-lawmakers-take-an-interest-2023-02-13/> (“Lieu introduced a resolution written by ChatGPT that said Congress should focus on AI ‘to ensure that the development and deployment of AI is done in a way that is safe, ethical, and respects the rights and privacy of all Americans, and that the benefits of AI are widely distributed and the risks are minimized.’”). For discussions on regulating Generative

lawmakers should not rush to pass *criminal laws* that might hurt a technology in its infancy. The calls to regulate AI are partially driven by a belief in Washington that new AI technology needs to be regulated ex-ante because the ex-post industry self-regulation approach taken in the previous technology wave of social media was ineffective.¹¹⁰ However, despite the downsides, social media companies from the previous tech wave have blossomed in the last two decades with near total domination by American companies in the world market.¹¹¹ The Google of today—a platform with Maps, enterprise cloud services, and YouTube—was not foreseeable at the time it was a rudimentary search engine. Similarly, we cannot predict what ChatGPT will look like in the future, so we should not use criminal laws to regulate it this early.

Jack Balkin argued in *The Path of Robotics Law* that the characteristics of a new technology “are partly the product of current use and partly the work of human imagination about potential affordances and opportunities, dangers and threats.”¹¹² For example, we rarely use our mobile phones to make phone calls and therefore what is “essential” about the mobile phone has changed over time.¹¹³ Despite all the hype, ChatGPT might eventually turn out to have uses substantially different than what has been demonstrated thus far or its uses could turn out to be extremely limited.¹¹⁴

AI broadly see Alex Engler, *Early thoughts on regulating generative AI like ChatGPT*, BROOKINGS (Feb. 21, 2023), <https://www.brookings.edu/blog/techtank/2023/02/21/early-thoughts-on-regulating-generative-ai-like-chatgpt/>; Bishop Garrison, *Regulating Artificial Intelligence Requires Balancing Rights, Innovation*, JUST SECURITY (Jan. 11 2023), <https://www.justsecurity.org/84724/regulating-artificial-intelligence-requires-balancing-rights-innovation/>.

¹¹⁰ Mark Sullivan, *Will Congress miss its chance to regulate generative AI early?*, FAST COMPANY (Feb. 21 2023), <https://www.fastcompany.com/90853541/will-congress-miss-chance-to-regulate-generative-ai-early>.

¹¹¹ Maya Dollarhide, *Social Media: Definition, Effects, and List of Top Apps*, INVESTOPEDIA (Apr. 14, 2023), <https://www.investopedia.com/terms/s/social-media.asp> (Facebook, YouTube, WhatsApp, and Instagram taking the top 4 spots with most users).

¹¹² Jack Balkin, *The Path of Robotics Law* (May 10, 2015), 6 CALIFORNIA LAW REVIEW 45 (June 2015).

¹¹³ *Id.*

¹¹⁴ A college student used GPT-3 to create an entirely fake blog under a fake name that fooled thousands. See Karen Hao, *A college kid’s fake, AI-generated blog fooled tens of thousands. This is how he made it.*, MIT TECHNOLOGY REVIEW (Aug. 14,

Calls for the regulation of artificial intelligence broadly arise out of the fear of it replacing jobs, nefarious actors using it, and Terminator-style super-intelligence.¹¹⁵ However, that does not mean that criminal laws are necessary. For instance, replacement of jobs is not a criminal law issue, and ChatGPT is certainly nowhere near super-intelligence. The use of these technologies by nefarious actors (as described in Part II) poses a significant challenge. But that does not and should not lead to the conclusion that new *criminal laws* are necessary for the regulation of these technologies. The actions of these nefarious actors are adequately criminalized under existing laws. Therefore, regulation should focus on passing civil laws to regulate these technologies to avoid problems like reinforcing existing biases in algorithmic datasets,¹¹⁶ rather than passing new criminal laws.

ChatGPT's own self-imposed limits and constant learning from its mistakes,¹¹⁷ along with more "advisory" views from the government,¹¹⁸ will further help mitigate harm. Competition has started to catchup to ChatGPT already¹¹⁹ which would help improve the technology as well. Education for the public and professionals¹²⁰ on this new technology

2020), <https://www.technologyreview.com/2020/08/14/1006780/ai-gpt-3-fake-blog-reached-top-of-hacker-news/>. The student claims he picked self-help as the topic because GPT-3 is good at pretty language but not logic. ChatGPT is designed for the conversational style making it even better for similar content.

¹¹⁵ Ron Schmelzer, *Should We Be Afraid of AI?*, FORBES (Oct. 31, 2019), <https://www.forbes.com/sites/cognitiveworld/2019/10/31/should-we-be-afraid-of-ai/?sh=2b0bd12b4331>.

¹¹⁶ *ChatGPT and large language model bias*, CBS NEWS (Mar. 5, 2023), <https://www.cbsnews.com/news/chatgpt-large-language-model-bias-60-minutes-2023-03-05/>.

¹¹⁷ OpenAI allows users to give feedback on individual responses provided by ChatGPT as well.

¹¹⁸ *Blueprint for an AI Bill of Rights*, THE WHITE HOUSE, <https://www.whitehouse.gov/ostp/ai-bill-of-rights/> (last visited March 19, 2023). For a criticism of the White House policies see Alex Engler, *The AI Bill of Rights makes uneven progress on algorithmic protections*, BROOKINGS (Nov. 21, 2022), <https://www.brookings.edu/2022/11/21/the-ai-bill-of-rights-makes-uneven-progress-on-algorithmic-protections/>.

¹¹⁹ Robert Hart, *ChatGPT's Biggest Competition: Here Are The Companies Working On Rival AI Chatbots*, FORBES (Feb. 23, 2023), <https://www.forbes.com/sites/roberthart/2023/02/23/chatgpts-biggest-competition-here-are-the-companies-working-on-rival-ai-chatbots/?sh=5d250236216b>.

¹²⁰ Amy B. Cyphert, *A Human Being Wrote This Law Review Article: Gpt-3 and the Practice of Law*, 55 U.C. DAVIS L. REV. 401 (2021) (arguing that GPT-3 is inadequate

would also help alleviate negative impacts.

ChatGPT and related Generative AI technologies might pose new problems and may even exacerbate existing problems with digital technologies. However, before passing any new criminal laws, governments should consider the application of existing civil and criminal laws that might adequately address the problem.

CONCLUSION

ChatGPT has caught the fancy of the world. Like all technologies it can be used by nefarious actors. It may be misused in assisting the cybercrimes of hacking, spam, and phishing because of its sophistication with language. However, that does not mean that new criminal laws are needed to address the problem. Existing criminal laws are sufficient to address these problems because the ultimate acts of hacking, sending spam, and phishing are covered regardless of how the code or content used for the crime was created.

Regulation of ChatGPT and other Generative AI technologies should instead focus on using civil laws and regulations that minimize harms, such as algorithmic discrimination whilst protecting innovation in a budding industry. Despite the criticism that technology companies have increasingly received in the past few years,¹²¹ digital technologies have generated incredible economic growth,¹²² allowed people to find communities they want to be a part of,¹²³ and unleashed creativity.¹²⁴ ChatGPT should be given breathing room at its genesis to allow for the possibility of developing similarly positive results.

and proposing amendments to professional conduct rules for lawyers to ensure the ethical use of AI).

¹²¹ Darrell West, *Techlash continues to batter technology sector*, BROOKINGS (Apr. 2, 2021), <https://www.brookings.edu/blog/techtank/2021/04/02/techlash-continues-to-batter-technology-sector/>.

¹²² *Digital Economy*, U.S. BUREAU OF ECONOMIC ANALYSIS, <https://www.bea.gov/data/special-topics/digital-economy> (last visited April 29, 2023).

¹²³ Sheila Dang, *Young adults with disabilities find community on social media*, REUTERS (Aug. 24, 2022, 4:57 AM), <https://www.reuters.com/world/young-adults-with-disabilities-find-community-social-media-2022-08-24/>.

¹²⁴ *Digital Art*, DEVIANTART, <https://www.deviantart.com/topic/digital-art> (last visited April 29, 2023).