CONGRESSIONAL ACTION IS NEEDED TO PROTECT HOTEL GUESTS FROM DISCRIMINATORY AI PRICING OUTCOMES

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Abstract

Businesses increasingly implement Artificial Intelligence technology in their products. Today, hotels use AI as agents that can answer routine questions and perform some limited actions such as checking a guest out. However soon, businesses supporting hotels may use AI to increase revenue per available room based on customer insights. This article examines a possible use of AI in hotel revenue strategies against a backdrop of unique power imbalance between hotels and their guests. This article advocates for federal regulation of AI technology when used in the hotel sector, and regular audits to fairly administer the emerging technology. A proposed approach of regulation is based on the newly passed European Union's AI Act, which tailors the extent of regulation and restrictions based on risks associated with uses.

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I. INTRODUCTION

In the age of Artificial Intelligence (AI), we cannot ignore the ways in which autonomous technologies can harm humans. Regulators must act cautiously to avoid stalling progress, while implementing some restrictions on new technologies to reduce societal harms. With a global race among companies working seamlessly across borders, it is the government's role to set the guard rails on the AI racetrack.

One such race is starting in hotel room pricing. Even though today hotels set prices based on general data points such as market demand, they may soon set prices with AI based on data points specific to a potential guest. Instead of the market demand driving hotel prices, hotels will seek to provide personalized prices with AI making decisions based on a company's data specific to that guest. While some scholars anticipate positive outcomes in some markets,[1] they are also skeptical and caution against discriminatory outcomes.[2] Regulators in the United States should adopt proactive AI regulation, designed after the European Union AI Act (EU AI Act),[3] to prevent undesirable outcomes from AI use in commerce such as excessive price discrimination.

On the global stage, the European Union has come the closest to a comprehensive AI regulation with its recently proposed and implemented EU AI Act.[4] During his term in office, President Biden issued an Executive Order calling the federal government to action in regulating AI.[5] However, both the EU and the U.S. face a regulatory challenge where any effective AI regulation must effectively regulate AI usage, despite most companies using proprietary and often complex algorithms to arrive at outputs.[6] To add complexity in the hotel context, hotels have inherently opaque pricing models that create an information imbalance between consumers and hotels marketing to those consumers. While companies can gather consumer data more easily than ever before using internet cookies[7] or data brokers,[8] consumers lack knowledge of whether the hotel prices offered are fair, or

1. *See* OXERA, WHEN ALGORITHMS SET PRICES: WINNERS AND LOSERS 2 (2017); Qian Li et al., *AI-Enabled Price Discrimination as an Abuse of Dominance: A Law and Economics Analysis*, 9 CHINA-EU L. J. 51, 59 (2023).

2. *See* Li et al., *supra* note 1, at 51; OXERA, *supra* note 1, at 26.

3. *See* Regulation (EU) 2024/1689, of the European Parliament and of the Council of 13 June 2024, Laying down harmonized rules on artificial intelligence and amending Regulations (EC) No. 300/2008, (EU) No 167/2013, (EU) No. 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), 2024 O.J. (L 1689) para. 1 [hereinafter EU AI Act].

4. *See generally Commission Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonized Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, at 1.1, SEC (2021) 167 final (Apr. 21, 2021); *see also id.*

5. *See* Exec. Order No. 14,110, 88 Fed. Reg. 75, 191 (Nov. 1, 2023).

6. OXERA, *supra* note 1, at 30.

7. *See* Frederick Zuiderveen Borgesius & Joost Poort, *Online Price Discrimination and EU Data Privacy Law*, 40 J. CONSUMER POL'Y 347, 350 (2017).

8. *See* EXECUTIVE OFFICE OF THE PRESIDENT, BIG DATA: SEIZING OPPORTUNITIES, PRESERVING VALUES, 43 (2014), https://obamawhitehouse.archives.gov/sites/default/files/docs/big_data_privacy_report_may_1_2014.pdf.

even based on correct personal data. Especially when AI makes automated decisions that affect consumers, legislators must ensure that no discriminatory impact occurs.

The United States Congress must regulate the use of AI to prevent consumer discrimination, especially when hotels use AI to set room and service prices that are individualized to each potential guest. In this paper, I propose using the EU AI Act risk-based framework to proactively regulate AI usage, along with regular independent, algorithmic audits for any high-risk and limited-risk systems. The EU AI Act's risk-based approach provides technology companies with adjustable levels of oversight depending on the risks associated with the technology. The Act identifies four risk categories: (i) unacceptable risk, (ii) high risk, (iii) transparency risk, and (iv) minimal risk.[9] An example of an unacceptable risk is AI-based social scoring by public authorities—explicitly prohibited in the Act.[10] Whereas AI systems that fall into the high-risk category include those which are intended to be used as a safety component of a product are not prohibited, albeit thoroughly regulated.[11] This approach fosters improvements and growth in AI, while independent algorithmic audits ensure outcomes from AI decisions are compliant with already-existing laws.

II. HOTEL REVENUE MANAGEMENT STRATEGIES TODAY AND HOW HOTELS CAN LEVERAGE AI TO LEAD TO INCREASED PROFITS

Increasingly, hotel companies use Artificial Intelligence to answer customers' questions and queries from booking a reservation to checking out.[12] As AI technology improves and becomes more prevalent, hotels embrace AI in new ways. Besides serving as guests' virtual assistants, hotels can also use AI in revenue management to set hotel room prices.[13]

Traditionally, hotels base room prices on history, forecast, and market segments, but emerging AI technology has the potential to improve revenue

9. Briefing, EU Legislation in Progress: Artificial Intelligence Act, at 3, (Sept. 2024), https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698792/EPRS_BRI(2021)698792_EN.pdf [hereinafter EU Legislation in Progress].

10. *See European Commission Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonized Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, at 5.2.2, SEC (2021) 167 final (Apr. 21, 2021).

11. *See id.* at art. 6 para. 1.

12. *See* Andelka Stilic et al., *Check-in to the Future: Exploring the Impact of Contemporary Information Technologies and Artificial Intelligence on the Hotel Industry*, TURISTICKO POSLOVANJE 5, 8 (2023).

13. IDEAS, *Hospitality Technology Trends: How AI is Revolutionizing Hotel Revenue Management*, https://ideas.com/hospitality-technology-trends-ai-hotel-revenue-management/ (last visited Apr. 30, 2025).

management practices.[14] A basis for pricing hotel rooms is past performance (History) and future demand (Forecast) as compared with the competitors' pricing. A more sophisticated way to obtain higher prices in a hotel is to segment the market based on commonalities and set prices for each independent segment (Market Segmentation). An example of a typical market segment is 'Groups and Conventions,' which encompasses guests whose primary purpose is to stay at the hotel to attend a conference or a convention. Each revenue strategy aims to increase profits. To put simply, a hotel's revenue strategies aim to increase profits by getting the most money for the hotel's rooms and other services that the market can provide. Therefore, the best price for the hotel is the highest price that the guest is willing to pay for the service.

Hotel pricing is uniquely opaque as compared to other industries. Because prices constantly change based on demand and forecast, each consumer likely pays a different price for the same room on the dates of stay. Hotel prices for rooms are inherently tied to the demand outlook at that specific moment in time. To demonstrate this, imagine John and Sara are looking to stay at a popular hotel in San Francisco on New Year's Eve. John makes a reservation in early March and seizes a lower price for the room since the hotel's demand for New Year's Eve reservations in March is still low. Unlike John, Sara makes last minute plans and waits until November to make her reservation. Because the hotel is likely to sell most of its inventory for New Year's Eve by November, Sara will pay a higher price for the same room compared to John, even though both are staying on the same date. Therefore, unlike other service-based businesses such as restaurants or spas, hotel prices are not pre-set in a menu but change rapidly, even several times in a single day for a future date. Precisely because of the hotel's opaque pricing model, the consumer has access to less information as compared to the hotel. This information disadvantage has the potential to further expand when hotels use powerful AI technology to set already-opaque prices. Consumers do not see what drives the AI algorithm to set the price and are unable to correct the data on which the decision is made because of their informational disadvantage.

In an effort to increase revenues, hotels will eventually leverage AI technology to process large data sets to understand a consumer's reservation price.[15] To understand a consumer's willingness to pay for a room, hotels can extrapolate from the consumer's behavior. For example, if a hotel has data about a consumer's previous brand purchases or websites she visited, hotels

14. *See id.*

15. *See* OXERA, *supra* note 1, at 2 (predicting that algorithmic pricing is likely to occur in markets where demand "fluctuates more rapidly than supply," e.g. hotels).

can learn about a consumer's price sensitivity.[16] One conclusion is that consumers with less price sensitivity, will be more accepting of a higher price for a hotel room, compared with another consumer with more price sensitivity. Studies show that hotels differentiating prices based on consumers' willingness to pay showed overall performance improvement.[17] One study of a hotel casino in Las Vegas that implemented price differentiation showed a ten percent increase in average daily rate and a six percent increase in occupancy.[18] Thus, it seems only natural that hotels will want to leverage AI technology to help them set prices closer to an amount a customer is willing to pay.[19]

III. FIRST DEGREE PRICE DIFFERENTIATION REQUIRES USE OF PERSONALIZED DATA AND ENTAILS RISKS TO CONSUMERS SUCH AS DISCRIMINATION

First degree price differentiation uses personal consumer data to predict the price a consumer will pay for the good or service.[20] Hotels can leverage this personal information to increase their revenues and occupancy by exercising data-driven price differentiation. However, aside from price discrimination being somewhat distasteful to the consumer who does not know what the hotel may know about them, larger risks arise in algorithm-driven pricing models such as perpetuating bias in data leading to discrimination.

A. What is First Degree Price Differentiation

First degree price differentiation[21] occurs when a company uses a customer's personal information to infer that customer's willingness to pay for the service or good.[22] Under this economic theory, two conditions must

16. *See* Zuiderveen Borgesius & Poort, *supra* note 7, at 350.

17. *See* Li et al., *supra* note 1, at 56 (referencing MORAG CUDDEFORD-JONES, EFFECTIVE REVENUE MANAGEMENT IN THE HOSPITALITY INDUSTRY (Carlos Marquez Salazar ed., 2013)); OECD, PERSONALISED PRICING IN THE DIGITAL ERA 9 (2018).

18. *Id.* at 56-57 (referencing MORAG CUDDEFORD-JONES, EFFECTIVE REVENUE MANAGEMENT IN THE HOSPITALITY INDUSTRY (Carlos Marquez Salazar ed., 2013)).

19. *See* Axel Gautier et al., *AI Algorithms, Price Discrimination and Collusion: A Technological, Economic and Legal Perspective*, 50 EUROPEAN J. L. & ECON. 405, 407 (2020).

20. *See id.* at 408; Zuiderveen Borgesius & Poort, *supra* note 7, at 351.

21. Some scholarly articles use terms such as 'price discrimination' or 'personalized pricing' that are synonymous with term 'price differentiation.' In this article, I will solely use the term 'price differentiation.'

22. *See* Gautier et al., *supra* note 19, at 408; Zuiderveen Borgesius & Poort, *supra* note 7, at 351.

be true for a company to implement price differentiation strategies.[23] First, companies must be able to set prices for their goods and services.[24] Second, buyers must not be able to resell the good or service purchased.[25]

Perfect first degree price differentiation would require a business to know everything about a customer to offer pricing as close as possible to a customer's willingness to pay. However, perfect first degree price differentiation is never possible simply because companies will never have enough information to know a customer's true willingness to pay.[26] Nevertheless, companies can attempt to perfect their prices with AI's analysis of larger data sets.

When a company personalizes prices, it can train AI based on customer data from many sources, such as internet connection data, third-party sources, and loyalty program accounts.[27] Any website visited can potentially collect information on a customer based on the customer's internet IP address.[28] Further, marketing companies can gather customer data based on cookies which build on a customer's online profile.[29] Moreover, hotel companies are likely to benefit most from information gathered as part of their loyalty programs.[30]

B. First Degree Price Differentiation in Hotels

Hotels can implement first degree price differentiation using AI. Both conditions require for first degree price differentiation, (1) ability to set prices, and (2) inability to resell the hotel room are satisfied. Hotels have full control over the prices they set, and once a reservation is made, a guest can rarely transfer the reservation to another person. Usually, the reservation must be rebooked by the new guest. Therefore, the theoretical requirements for first degree price differentiation in hotels are satisfied.

Hotels can use data from their loyalty program accounts to better predict a customer's reservation price. Hotels already contain a wealth of customer information stored in valuable loyalty-program accounts, such as dollars spent, brands preferred, and frequency of travel. Along with online

23. Gautier et al., *supra* note 19, at 408.

24. *See id.*

25. *See id.* (referencing Ramsi A. Woodcock, *Personalized Pricing as Monopolization*, 51 CONN. L. REV. 311).

26. *See* Zuiderveen Borgesius & Poort, *supra* note 7, at 351.

27. *See id.* at 350.

28. *See id.*

29. *See id.*

30. *See id.* at 350, 352 (this is an example of information which is "voluntarily and knowingly provided by a customer").

behavioral data from other sources, hotels can build a more complete customer profile, which can help hotels better exploit a customer's economic power.[31] Companies known as 'data brokers' provide consumer data sales directly to businesses,[32] and aid companies to complete digital profiles of individual customers.[33] Since first degree price differentiation is by definition a hyper-personalized effort, AI technology is best suited for such data-intensive analysis.

To demonstrate the feasibility of this approach, we can find the beginnings of personalized pricing in loyalty-based discounts.[34] For example, most hotel brands already offer discounts based on loyalty-program membership.[35] However, generic, across-the-board loyalty discounts do not capture customers with a low willingness to pay—customers that might be willing to spend money but the price offered after the discount is still too high. Therefore, with the use of AI and data on that consumer, a hotel may be able to tailor loyalty-pricing closer to a customer's willingness to pay. Instead of a generic discount, hotels will lower the price for those customers with low willingness to pay and increase prices for those customers with a higher willingness to pay.[36] While the practice may seem counterintuitive at first glance, hotels have an incentive to fill all rooms—a perishable service—and must strike a balance between rates and occupancy percentages. Therefore, often the more customers a hotel can attract, the more overall profit it can expect. In most situations, a hotel would rather sell a room at a

31. *See* Li et al., *supra* note 1, at 57.

32. *See* EXECUTIVE OFFICE OF THE PRESIDENT, BIG DATA: SEIZING OPPORTUNITIES, PRESERVING VALUES, 43 (2014), https://obamawhitehouse.archives.gov/sites/default/files/docs/big_data_privacy_report_may_1_2014.pdf.

33. *See id.* at 43–44.

34. *See* Joshua A. Gerlick & Stephan M. Liozu, *Ethical and Legal Considerations of Artificial Intelligence and Algorithmic Decision-Making in Personalized Pricing*, 19 J. REVENUE & PRICING MGMT. 85, 92 (2020) (referencing Doug Henschen, *Catalina Marketing Aims for the Cutting Edge of 'Big Data'*, INFO. WK. (Sept. 6, 2011), https://www.informationweek.com/machine-learning-ai/catalina-marketing-aims-for-the-cutting-edge-of-big-data-.).

35. *See* HILTON HONORS, https://www.hilton.com/en/hilton-honors-rewards-program/ (last visited Mar. 31, 2025).

36. *See* Gerlick & Liozu, *supra* note 34, at 93 (stating Boston Consulting Group names this strategy "optimizing a continuum of prices." This strategy raises prices for consumers willing to pay more and lowers the prices to those with less willingness to pay, specifically to "increase penetration toward those previously unserved market segments." Simply put, hotels aim to fill all rooms every night, therefore, hotels would rather lower a price of a room to entice a potential customer to stay, rather than leave the room vacant.).

slightly lower price than discourage a customer from booking by quoting a price out of the range of that customer's reservation price.[37]

Hotels may also use AI to personalize guest pricing by offering personalized deals and packages based on a guest's past purchase history. In facilities with many food and beverage offerings or resort-type amenities (spa, excursions), hotels may offer personalized add-ons to rooms that increase the total spend per guest. While such a situation does not neatly follow the theory of personalized pricing (same product but at different prices depending on a customer's willingness to pay), hotels can still change how the components of the package are priced in accordance with the guest's willingness to pay. Assuming that rooms are the "products" which stay constant in the offering, even though the potential customer may see a varied offering (room plus add-ons) the room itself may have a varied price. Therefore, the same core risks arise when a room rate is priced differently to match a guest's willingness to pay, even if the offering as a whole (room with the add-ons) is not a one-to-one match with another guest's price. If anything, such examples of personalized pricing are merely disguised as a variable offering to the public but have even larger potential for overtly set personalized pricing.

C. Benefits and Risks When Companies Use First Degree Price Differentiation

First degree price differentiation carries both benefits and risks.[38] One widely recognized benefit is the potential for better consumer wealth distribution, where consumers with lower willingness to pay are offered prices closer to their desired price.[39] However, an inherent risk in personalized pricing is the potential for consumer discrimination, such as charging higher prices for groups underrepresented in AI training data and perpetuating bias present in AI training data (e.g. charging higher prices for groups travelling less simply because they may not travel to that particular destination as often).[40]

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37. A hotel would do this, because a potential guest's worth is not based solely on the rate they pay but also on the goods and services they purchase while on property which vary by hotel and destination.

38. *See* Li et al., *supra* note 1, at 56.

39. *See id.* at 57 (citing to Marco Botta & Klaus Wiedemann, *To Discriminate or not to Discriminate? Personalized Pricing in Online Markets as Exploitative Abuse of Dominance*, 50 EUR. J. L. & ECON. 381, 386).

40. *See* Rebecca Kelly Slaughter et al., *Algorithms and Economic Justice: A Taxonomy of Harms and a Path Forward for the Federal Trade Commission*, 23 YALE J. L. & TECH. 1, 35 (2021) (first referencing ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, PERSONALIZED PRICING IN THE DIGITAL ERA – NOTE BY THE UNITED STATES (2018); then

1. Benefits

Scholars point out a few consumer benefits that theoretically exist in the presence of first-degree AI price differentiation, such as better wealth distribution and increased market competition.[41]

First, AI models in monopolistic markets with little competition may result in prices closer to the consumer's willingness to pay. In the example of the hotel market, AI models may draw on information about a consumer and, rather than exploit little competition and raise prices for the room, set the prices lower so that more consumers are able to book rooms at prices those consumers are willing to pay.[42] This type of AI behavior would also lead to more consumers having access to hotel rooms and hotel companies filling up more rooms, in turn generating more revenue.[43]

Second, the more responsive a hotel's pricing AI algorithm becomes to both consumers' reservation prices as well as to market demands, the more other competitors in the market will employ strategies to win the consumer over.[44] A hotel's knowledge of the individual consumer's price preferences helps avoid costly pricing mistakes and ending up with empty rooms. Scholars argue that faster AI algorithm response to market pricing makes markets more competitive than otherwise.[45] The more competition in the market, the better the consumer choices and likely the lower the prices as well.

These rather optimistic views on first degree price differentiation are overshadowed by the risks associated with its use.

2. Risks

Scholars agree that machine learning algorithms can perpetuate and increase bias in data, resulting in discrimination.[46] To accurately predict a

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referencing Claire Kelloway, *Personalization or Price Discrimination?* OPEN MKT. INST. (Jan. 30, 2020), https://www.openmarketsinstitute.org/publications/personalization-price-discrimination; and then referencing Julia Angwin et al., *When Algorithms Decide What You Pay*, PROPUBLICA (Oct. 5, 2016), https://www.propublica.org/article/breaking-the-black-box-when-algorithms-decide-what-you-pay).

41. *See* Li et al., *supra* note 1, at 57 (referencing Botta & Wiedemann, *supra* note 39); OXERA, *supra* note 1, at 2.

42. *See* Li et al., *supra* note 1, at 57.

43. *See id.*

44. *See* OXERA, *supra* note 1, at 2.

45. *See* OXERA, *supra* note 1, at 2; Li et al., *supra* note 1, at 54; Gerlick & Liozu, *supra* note 34, at 89.

46. *See* Ellen P. Goodman & Julia Trehu, *Algorithmic Auditing: Chasing AI Accountability*, 39 SANTA CLARA HIGH TECH. L. J. 289, 299 (2023) (citing generally SAFIYA UMOJA NOBLE, ALGORITHMS OF OPPRESSION (2018); then citing Solon Barocas & Andrew D. Selbst, *Big Data's*

consumer's reservation price requires vast amounts of data analysis and can lead to overgeneralizations and thus to discriminatory outcomes. Bias and discrimination in how past pricing decisions were made is prone to repetition because AI pricing decisions originate from training historical data.[47] Additionally, since training data sets the tone for how the AI model makes decisions, the integrity of training data can have a meaningful impact on outcomes.[48] There are two possible scenarios which may lead to discriminatory outcomes: (i) AI's decisions are skewed for groups under-represented in training data; and (ii) training data which contains bias perpetuates the bias.[49]

When training data is not representative of the entire population, AI's decisions will be skewed for under-represented groups. A notable risk here is for training data to contain historical data with patterns of prejudice or inequality.[50] This concept is best illustrated by a recent example of Amazon's failed attempt to create a hiring algorithm.[51] The algorithm was trained on data containing a predominantly male applicant pool, which showed a pattern the algorithm sought to repeat and thus exclude more women.[52] Amazon abandoned the effort because the algorithm systematically discriminated against women.[53]

Under-represented groups in global travel, may experience disparate impact if hotels implement AI to drive personalized prices. For example, according to the 2015 Domestic Travel Market Report, only five percent of domestic travelers in 2014 were Black/African American,[54] but the 2023 U.S. Census Bureau statistics show Black/African Americans make up over

Disparate Impact, 104 CAL. L. REV. 671, 674 (2016); then citing Pauline T. Kim, *Data-Driven Discrimination at Work,* 58 WM. & MARY L. REV. 857, 875 (2017)).

47. *See* OXERA, *supra* note 1, at 28.

48. *See* Barocas & Selbst, *supra* note 46, at 680.

49. *See id.*; *see also* Slaughter et al., *supra* note 40, at 7.

50. *See* Slaughter, *supra* note 40, at 7-8 (first referencing Barocas & Selbst, *supra* note 46, at 677-78 (2016); then referencing Nicol Turner Lee et al., *Algorithmic Bias Detection and Mitigation: Best Practices and Policies to Reduce Consumer Harms*, BROOKINGS INST. (May 22, 2019), https://www.brookings.edu/research/algorithmic-bias-detection-and-mitigation-best-practices-and- policies-to-reduce-consumer-harms; and then referencing David Lehr & Paul Ohm, *Playing with the Data: What Legal Scholars Should Learn About Machine Learning*, 51 U.C. DAVIS. L. REV. 653, 676-77 (2017)).

51. *See id.* at 8.

52. *See id.*

53. *See id.*

54. U.S. TRAVEL ASS'N, 2015 DOMESTIC TRAVEL MARKET REPORT 6 (2016) [hereinafter U.S. TRAVEL ASS'N].

thirteen percent of the U.S. population.[55] Similarly, only seven percent of domestic travelers in 2014 were Spanish/Hispanic ethnicity,[56] but the 2023 Census reported that almost twenty percent of U.S. population is of Hispanic origin.[57] Training data for AI algorithms used in the hotel industry are likely to contain less data for these under-represented groups and thus produce possibly discriminatory results. Algorithms may show higher prices for Hispanic and African American travelers since there is less data on which AI could learn to perfect its algorithm to reach an individual consumer's reservation price. The overall risk is that the algorithm will perpetuate the under-representation of certain groups in the population in domestic hotel and travel markets.[58]

Another example of possible discrimination happening if AI algorithms are used to set prices, is the possibility of age discrimination. According to the 2015 Domestic Travel Market Report, while surprisingly two thirds of travelers over sixty-five years old relied on online sources for booking travel, only half of travelers aged eighteen to twenty-four used online booking sources.[59] To further decrease data on younger travelers, in 2014 travelers aged eighteen to twenty-four represented only seven percent of all travelers, whereas all other age groups fluctuated between eighteen to twenty percent.[60] Even AI systems that train on accurate past historical data can produce less accurate predictions in price willingness for younger travelers, which can decrease access to affordable travel because of the traveler's age.

When training data contains bias, the AI algorithm can perpetuate the bias. This issue may be one of training data labeling, where AI draws biased conclusions based on accurate but also biased data.[61] Here again, an example can best illustrate the concept of "garbage in, garbage out."[62] An algorithm created to improve access to care for high-risk patients disproportionately recommended extra care for white patients as compared to black patients.[63] The algorithm incorrectly used health care costs as a proxy for health needs.[64]

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55. *Quick Facts: United States*, U.S. CENSUS BUREAU, https://www.census.gov/quickfacts/fact/table/US/PST045223 (last visited Mar. 31, 2025) [hereinafter U.S. CENSUS BUREAU].

56. U.S. TRAVEL ASS'N, *supra* note 54, at 42.

57. *See* U.S. CENSUS BUREAU, *supra* note 55.

58. *See* Goodman & Trehu, *supra* note 46, at 299.

59. U.S. TRAVEL ASS'N, *supra* note 54, at 39.

60. *Id.* at 38.

61. *See* Barocas & Selbst, *supra* note 46, at 681-82.

62. *Id.* at 683.

63. *See* Slaughter et al., *supra* note 40, at 16-17.

64. *See id.* at 16 (stating that in using health care costs to predict healthcare needs the algorithm recommended white patients for more care).

Thus, when white patients spent more money on extra care unrelated to health needs, the algorithm recommended extra care for black patients only half the time.[65]

In the hotel context, algorithms may also draw biased conclusions from biased data. For example, on average, business travelers spend $320 more than leisure travelers per trip.[66] While seventeen percent of men travel for business (as opposed to pleasure), only twelve percent of women travel for business (as opposed to pleasure).[67] Since business travelers spend more money, a bias in historical data exists that likely shows male travelers being more likely to spend more on hotel rooms, increasing men's willingness to pay in the algorithm's proverbial eyes. However, a man's business trip spending may not accurately reflect their actual personal spending habits on leisurely trips. Such data, if used by an algorithm to learn could produce higher prices for men than women, without regulatory guardrails.

IV. THE FEDERAL GOVERNMENT NEEDS TO REGULATE AI SYSTEMS TO PREVENT SYSTEMIC DISCRIMINATION AND UNFAIR PRACTICES

As AI technology rapidly develops, swift federal action can ensure safety, trust, and fairness when hotel companies start using algorithm-based pricing. The federal government needs to regulate companies' use of AI-based algorithmic pricing because (i) antitrust regulation does not protect consumers, (ii) a federal standard will promote technology development, (iii) in monopolistic markets consumers do not have a choice to opt out of personalized pricing and (iv) consumers may be more accepting of personalized pricing in the hotel industry. In 2023, President Biden called federal agencies to regulate the development and use of AI technologies to manage risks present in AI.[68] The order broadly addresses the old administration's goals but requires much attention from federal agencies and industry leaders to strike a balance between regulation and innovation in AI development. The federal government, not individual states,[69] is best suited to address risks in AI technologies.

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65. *Id.* at 16-17.

66. *See* U.S. TRAVEL ASS'N, *supra* note 54, at 19.

67. *Id.* at 161.

68. *See generally* The White House, *FACT SHEET: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence*, THE WHITE HOUSE: BRIEFING ROOM: STATEMENTS AND RELEASES (Oct. 30, 2023), https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/ [https://archive.ph/qGF9U] [hereinafter White House Fact Sheet].

69. *See generally* Hard Fork, *Can California Regulate A.I.? + Silicon Valley's Super Babies + System Update!,* N.Y. TIMES (Oct. 4, 2024),

A. Current Antitrust Laws Do Not Protect Consumers Against Risks Inherent in First Degree Price Differentiation

While current anti-trust laws govern some AI usage, none are aimed at protecting consumers against consumer discrimination in the hotel industry. Two laws govern antitrust concerns in U.S., the Robinson-Patman Act and the Sherman Antitrust Act.[70] Neither can address risks consumers face when a company prices goods using data-driven AI algorithms. The Robinson-Patman Act is only applicable to the sale of goods and not services, therefore the Act does not cover the hotel industry.[71] Whereas the Sherman Antitrust Act addresses concerns about practices firms implement that "may exert monopolistic or oligopolistic restraints on trade."[72] Since companies may implement AI-based pricing without exerting "widespread market influence," the Sherman Act is powerless to limit unfair behavior.[73]

B. One Federal Standard Will Aid Compliance and Facilitate Technology Development

The Federal government needs to institute one national standard for AI regulation to promote competition, foster technology development, and minimize legal uncertainty. One central regulation, as opposed to a patchwork of state-by-state standards, will minimize legal uncertainty in the field.[74] With one set of standards, AI companies will have less compliance obligations when developing AI technology. In turn, AI companies looking to invest in new AI features can make a better-informed decision as to whether the new feature is legally compliant and thus worthy of the investment.

When AI companies understand the legal regulation governing their work, investors can financially support companies with more confidence and drive growth in the industry. The longer the U.S. waits to implement

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https://www.nytimes.com/2024/10/04/podcasts/hard-fork-newsom-ai-fertility.html. (discussing recent regulatory trends by individual states).

70. *See* Gerlick & Liozu, *supra* note 34, at 89 (first referencing Hagit Bulmash, *An Empirical Analysis of Secondary Line Price Discrimination Motivations*, 8 J. COMP. L. & ECON. 361,362 (2012); and then referencing Douglas M. Kochelek, *Data Mining and Antitrust*, 22 HARV. J. L. & TECH. 516, 523 (2009)).

71. *See Price Discrimination: Robinson-Patman Violations*, FEDERAL TRADE COMMISSION (last visited Mar. 31, 2025), https://www.ftc.gov/advice-guidance/competition-guidance/guide-antitrust-laws/price-discrimination-robinson-patman-violations.

72. Gerlick & Liozu, *supra* note 34, at 89 (quoting 15 U.S.C. §§ 1-2).

73. *Id.*

74. *See European Commission Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonized Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, at 6, SEC (2021) 167 final (Apr. 21, 2021).

legislation governing AI technology, the longer investors may be less willing to invest in American companies governed by an uncertain legal regime and defer to a more certain regulatory framework like the EU. Therefore, innovation in the U.S. may be thwarted with investors choosing a safer investment abroad. To attract investors back, American companies may of course simply extend the EU governance standards to their global operations to offer a more secure investment because of regulatory compliance with international regulation.[75]

While EU legislation as a global standard is not a negative outcome per se, the world's leading hotel companies are U.S.-based and would benefit from legislation aimed at fostering innovation and competition tailored to the American legal system and market.[76] In fact, Congress' duty to regulate the hotel industry in the U.S. falls squarely within Congress' constitutional power to regulate interstate commerce.[77]

Congress should act as a response to former-President Biden's Executive order from October 30, 2023, which calls for advancing American leadership in AI technology and oversight.[78] The Executive Order calls for action to ensure a "safe, secure, and trustworthy" AI system.[79] The Executive Order recognizes that comprehensive American AI legislation can help U.S. legislators set the tone for regulating AI on the global stage. AI's use in national security and military aspects most highlights the need for Congress to act. While price personalization has significantly less critical risks than AI's military capabilities, civil liberties still need protection on both global and national scales. Notably, the Executive Order explicitly calls for action to address algorithmic discrimination in AI systems.[80]

75. *See generally* ANU BRADFORD, BRUSSELS EFFECT: HOW THE EUROPEAN UNION RULES THE WORLD (2020) (stating EU's laws may prevail as the global governance standard in AI due to the Brussels Effect).

76. *See 2022 Hotel Management Survey: Top Hotel Companies*, 237 HOTEL MGMT., Sept. 2022, at 48; BRAND FINANCE, HOTELS 50 2022: THE ANNUAL REPORT ON THE MOST VALUABLE AND STRONGEST HOTEL BRANDS 11 (2022), https://static.brandirectory.com/reports/brand-finance-hotels-50-2022-preview.pdf.

77. U.S. CONST. art. 1, § 8, cl. 3.

78. *See* White House Fact Sheet, *supra* note 68.

79. *Id.*

80. *See id.*

C. Consumers Faced with Fewer Choices Cannot Opt out of Algorithmic Pricing

Past examples of companies offering different prices to individual consumers, show market forces can discourage companies' bad behavior.[81] In 2000, an Amazon customer deleted a browser cookie, and saw a lower price for an item on Amazon.[82] Consumers responded with anger, and Amazon admitted to experimenting with "random discounts."[83] Even though Amazon did not use first degree price differentiation, consumers, as forces in the market, reacted negatively to an observable difference in price.[84] Some, including the federal government, believe that such "consumer backlash" serves itself as a market force to discourage companies from personalizing pricing.[85]

Consumers will boycott hotels they do not trust, which may serve to discourage companies from pursuing disfavored strategies such as price differentiation. Hotel services are not only unique but difficult to grasp in advance.[86] Therefore, the image or idea the market has of a hotel company can affect the hotel's performance more than the actual service the hotel offers.[87] When a hotel's image is tarnished, its performance will suffer because consumers make their buying decisions not based on actual quality of service, but rather on the perception of quality of service the hotel offers.[88] Research shows that when different prices stem from personalized pricing, consumers lost trust in the company—a key component of a company's

81. *See* Gerlick & Liozu, *supra* note 34, at 92 (referencing William W. Fisher III, *When Should We Permit Differential Pricing of Information*, 55 UCLA L. REV. 1, 30 (2007)); *see also* Zuiderveen Borgesius & Poort, *supra* note 7, at 349 (referencing Press Release, Amazon, Amazon.com Issues Statement Regarding Random Price Testing, (Sept. 27, 2000), https://press.aboutamazon.com/2000/9/amazon-com-issues-statement-regarding-random-price-testing (listing Amazon as an example)).

82. *See* Zuiderveen Borgesius & Poort, *supra* note 7, at 349.

83. *See id.* (referencing Paul Krugman, *Reckonings; What Price Fairness?*, N.Y. TIMES (Oct. 4, 2000), https://www.nytimes.com/2000/10/04/opinion/reckonings-what-price-fairness.html).

84. *See id.* (referencing Press Release, Amazon, Amazon.com Issues Statement Regarding Random Price Testing (Sept. 26, 2000)).

85. *See id.* (referencing OFFICE OF FAIR TRADING, ONLINE TARGETING OF ADVERTISING AND PRICES: A MARKET STUDY, 2010, at 48 (UK); and then EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES, BIG DATA AND DIFFERENTIAL PRICING 13 (2015)).

86. *See* Juan Luis Nicolau & Ricardo Sellers, *The Quality of Quality Awards, Diminishing Information Asymmetries in a Hotel Chain*, 63 J. BUS. RSCH. 832, 833 (2010).

87. *See id.* (referencing Sundar G. Bharadwaj & Anil Menon, *Determinants of Success in Service Industries: A PIMS-Based Empirical Investigation*, 7 J. SERVS. MKTG. 19, 23 (1993)).

88. *See id.* (referencing Bharadwaj & Menon, *supra* note 87, at 19, 23, 24).

image.[89] Therefore, one can argue that the market itself will serve as a balancing means to discourage unfair practices in price personalization whether by public outcry or company boycott—decreasing the importance of AI regulation.

However, when a market presents limited choices, consumers will be forced to accept personalized pricing.[90] Even though competition can serve as a market force that limits bad company behavior,[91] not all markets in the hotel industry are arguably competitive enough. Some markets for hotel rooms offer comparatively few choices to consumers. For example, if you wish to visit Sequoia National Park, only four lodging accommodations with a total of 165 rooms exist inside the park.[92] Such a limited amount of lodging inventory severely impacts a consumer's ability to opt out of differential pricing if all four options use data-driven algorithmic pricing.

Furthermore, hotel markets are unique in the way that even choice-rich markets can shrink over time, limiting competition which forces consumers to choose from an extremely limited number of offerings and at times accept personalized prices. For example, cities often host city-wide conferences—such as the Consumer Electronics Show (CES) in Las Vegas. In 2022, Las Vegas had 150,857 hotel rooms available in the city.[93] However, when CES attendees flood Las Vegas every year in early January, lodging options are severely diminished for non-convention attendees.[94] In 2023, over 115,000 people attended the conference, which materially decreased available room inventory in the Las Vegas market. A prospective consumer looking at lodging options in Las Vegas during CES, would have extremely limited hotel choices. If the only available hotels use algorithm-driven AI pricing models, that consumer does not have a meaningful choice to opt out of personalized prices during her travel dates.

89. *See* Gerlick & Liozu, *supra* note 34, at 92 (referencing Ellen Garbarino & Olivia F. Lee, *Dynamic Pricing in Internet Retail: Effects on Consumer Trust*, 20 PSYCH. & MKTG. 495, 495-97 (2003)).

90. *See* Zuiderveen Borgesius & Poort, *supra* note 7, at 363.

91. *See id.* at 349.

92. *See* Nat'l Parks Serv., *Sequoia & Kings Canyon: Lodging*, https://www.nps.gov/seki/planyourvisit/lodging.htm (last visited Mar. 31, 2025).

93. *See* LVCVA*, Number of available rooms in Las Vegas in the United States from 2000 to 2022*, STATISTA (July 2, 2025), https://www.statista.com/statistics/221045/room-inventory-in-las-vegas/.

94. *See* Consumer Tech. Ass'n, ATTENDANCE AUDIT SUMMARY: CES 2023, at 2 (2023), https://cdn.ces.tech/ces/media/pdfs/attendee-audit-summary-2023.pdf.

D. Societal Stigma Associated with Personalized Pricing Will Not Work to Discourage Hotel Companies from Implementing Personalized Pricing

When personalized pricing economically benefits the consumer, consumers may be more likely to accept personalized pricing as a business practice. Negative consumer opinions about personalized pricing may be partially due to the extremely negative outcomes personalized prices can produce. Consumers do not want to pay higher prices simply because the hotel predicts the consumer can pay more. However, some studies show that in a competitive market, AI-enabled price differentiation can produce better competition in the market, potentially leading to an incentive to reduce prices since the seller knows better the limits of what the consumer will pay.[95] Rather optimistically, other studies contend that even in a monopolistic market with little competition, AI-determined prices will be lowered to meet the consumer at their reservation price.[96] Regardless of how AI-algorithms actually behave in the market, the mere possibility that consumers will not serve as a barrier to wide-spread adoption means legislators must act.

Hotels are in a unique advantage to implement personalized pricing because hotel consumers highly value personalization. A 2018 Deloitte study evaluated how hotels increase the value of their services in consumers' eyes.[97] Consumers identified five needs that move hotel services beyond basics and "provide excellent guest experiences:" (1) know me, (2) hear me, (3) engage me, (4) empower me, and (5) delight me.[98] Hotel guests actually value and want hotel companies to know and remember their preferences and needs, as shown by sixty-five percent of survey respondents.[99] Sixty-six percent of respondents want hotels to "engage [them] in a personalized authentic, and attentive way."[100] The survey results show the hotel industry is uniquely positioned where consumers want a hotel to obtain, retain and use personal data to enhance their experience at the hotel.[101]

The high-value consumers place on hotel services translates to increased tolerance for personalized hotel pricing. Hotel guests may be more open to

95. *See* Li et al., *supra* note 1, at 57 (referencing OECD, *Personalised Pricing in the Digital Era*, at 20 (Nov. 28, 2018)); Gerlick & Liozu, *supra* note 34, at 89 (referencing EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES, BIG DATA AND DIFFERENTIAL PRICING 17 (2015)).

96. *See* Li et al., *supra* note 1, at 57 (referencing Botta & Wiedemann, *supra* note 39).

97. *See Next-gen Hotel Guests Have Checked In: The Changing Guest Experience*, DELOITTE 7, https://www2.deloitte.com/us/en/pages/consumer-business/articles/hotel-guest-experience-strategy.html (last visited Apr. 7, 2025).

98. *Id.*

99. *Id.*

100. *Id.*

101. *See id.* (listing the guest satisfaction scores in the hotel industry).

personalized service offerings such as service add-ons when they book hotels because these pricing methods demonstrate that the hotel knows the guest well. In fact, studies support that when hotels anticipate guest needs and offer individualized packages, guests will respond positively.[102] It follows then, that hotels using individualized packages in pricing AI algorithms will not face consumer backlash since personalization is key to the hotel industry already. As a healthy market behavior, consumer behavior and opinion will shape how companies serve their consumers.

However, limited governmental regulation in a healthy market can ensure an individual consumer's liberties are not abused by companies in pursuit of consumer needs and wants.[103] The largest hotel companies[104] are publicly traded[105] and aim to increase shareholder value, therefore the companies' primary purpose of any new process is presumably revenue maximization. Often companies can maximize revenue when they address consumers' needs and wants. Personalized pricing can lead to increased revenues in hotels[106] and aligns with consumers' need for personalized interactions in the hotel industry. This perfect convergence of interests requires governmental oversight to protect consumers from inherent risks present in personalized pricing because it is unlikely hotels will have enough incentive to self-govern against violations.

V. HOW THE FEDERAL GOVERNMENT SHOULD ACT

U.S. legislators should use the EU's risk-based approach and implement regular third-party algorithmic audits to govern AI in the United States. The EU AI Act's risk-based approach adjusts the stringency of regulation depending on possible risk in AI application.[107] The varied levels of regulatory oversight will not inhibit AI technology growth while protecting

102. *See id.*

103. *See* Gerlick & Liozu, *supra* note 34, at 88 ("[M]any foundational proponents recognize limited government intervention as an antecedent to preserve individual liberty.").

104. Hotel Management, *Leading hotel companies worldwide as of June 2023, by number of properties*, STATISTA (May 22, 2024), https://www.statista.com/statistics/197869/us-hotel-companies-by-number-of-properties-worldwide/.

105. *Wyndham Hotels & Resorts Inc.*, GOOGLE FINANCE, https://g.co/finance/WH:NYSE (last visited Mar. 24, 2025) (trading under 'WH'*); Marriott International Inc*., https://g.co/finance/MAR:NASDAQ (last visited Mar. 24, 2025) (trading under 'MAR'); *Choice Hotels Inc*., GOOGLE FINANCE, https://g.co/finance/CHH:NYSE (last visited Mar. 24, 2025) (trading under 'CHH'); and *Hilton Hotels Corporation Common Stock*, GOOGLE FINANCE, https://g.co/finance/HLT:NYSE (last visited Mar. 24, 2025) (trading under 'HLT').

106. *See* Li et al., *supra* note 1, at 56, 57 (referencing MORAG CUDDEFORD-JONES, EFFECTIVE REVENUE MANAGEMENT IN THE HOSPITALITY INDUSTRY 9 (Carlos Marquez Salazar ed., 2013)).

107. *See generally* EU AI Act, *supra* note 4.

against risks. Third party algorithmic audits will effectively regulate opaque and complex autonomous technology by focusing on outcomes, rather than simple transparency in data used.

A. The EU's AI Act Framework

The EU AI Act governs AI technologies depending on the risks associated with uses in each sector and provides for a voluntary code of conduct for non-high-risk AI systems.[108] In 2021, EU proposed, and subsequently enacted, AI legislation (The EU AI Act) and outlined the broad strokes for the purpose and the regulatory framework.[109] The framework takes a risk-based approach that categorizes AI technology into: (i) unacceptable risk, (ii) high risk, (iii) transparency risk, and (iv) minimal risk.[110] The Act lays out various requirements and obligations for development, placing on the market and use of AI systems in the EU."[111]

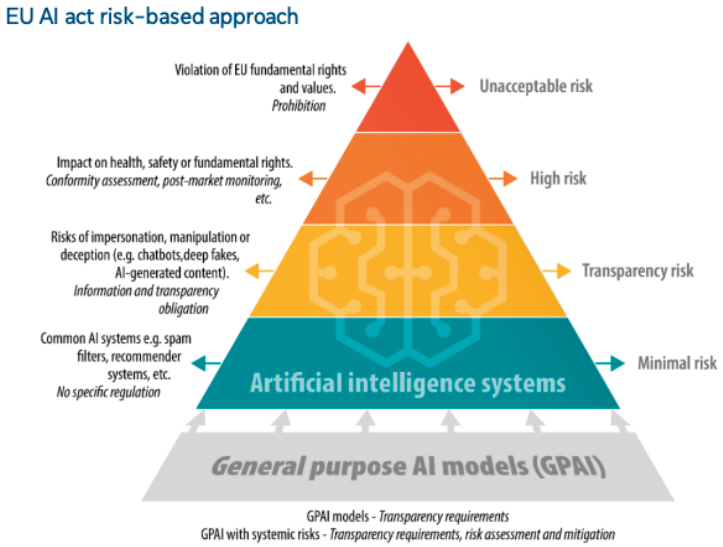

Figure 1 [112]

108. *See generally id.*

109. *See European Commission Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonized Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, at 1.1, SEC (2021) 167 final (Apr. 21, 2021).

110. EU Legislation in Progress, *supra* note 9, at 8, 9.

111. *See id.* at 3.

112. *See id.* at 8 (citing *Shaping Europe's Digital Future*, EUR. COMM'N, https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai) (last visited Apr. 7, 2025)).

Under the EU framework, risks associated with each AI system dictate the extent of regulation.

1. Unacceptable Risk

Systems in the 'unacceptable risk' category are "a clear threat to people's safety, livelihoods and rights, because of the 'unacceptable risk' they create."[113] Some examples in this category are: systems that exploit specific vulnerable groups, or governmental social scoring systems (such as those employed in China where the government assigns a social score based on a person's behavior).[114] Systems in this category are completely prohibited under the EU AI Act.[115]

2. High Risk

Systems in the 'high risk' category "create adverse impact on people's safety or their fundamental rights."[116] There are two general groups: (i) systems used in safety component products or those under the "health and safety harmonization legislation,"[117] such as medical devices; and (ii) systems containing biometric data, and those that manage critical infrastructure, used in education, employment, "essential private and public services," law enforcement, immigration, and justice.[118] Systems in this category are subject to more stringent regulation that requires ex-ante conformity assessment.[119] A high-risk system provider must register within an EU-wide database before deploying the system and carry out a fundamental rights impact assessment.[120]

3. Transparency Risk

Systems in the 'transparency risk' category are systems which interact with humans, recognize human emotion, categorize biometric data and "generate or manipulate image, audio or video content."[121]

113. *See id.* at 3.
114. *See id.*
115. *See id.*
116. *Id.*
117. *Id.*
118. *See id.* at 12 n. 13.
119. *See id.* at 9.
120. *See id.*
121. *See id.*

4. Minimal Risk

Systems in the 'minimal risk' category do not have any regulatory obligations, however the EU envisions creation of "codes of conduct."[122] Codes of conduct would serve to encourage the voluntary application of high-risk AI system's mandatory requirements.[123]

The EU AI Act creates administrative guidance for governance, enforcement, and sanctions.[124] Most notably, the Act establishes fines of varying scale which can reach "up to thirty-five million euros or seven percent of the total worldwide annual turnover" depending on the severity of infringement.[125]

The EU AI Act's risk-based structure aims to govern an ever-evolving technology while protecting EU values, fundamental rights, and principles.[126] The EU places the most stringent and restrictive regulation on technologies that most threaten EU values, fundamental rights, and principles. Such an approach allows regulators to protect citizens even without being able to anticipate future uses of AI technologies. The regulatory framework also leaves room for the EU member states' needs or wants, such as to implement more stringent regulation in the AI technology areas relevant to their regions.

While the EU AI Act seems to require auditing only of high-risk AI systems,[127] the EU makes up for its auditing gap of transparency-risk system with the Digital Services Act (DSA).[128] The DSA calls for annual independent audits of "very large online platforms,"[129] some of which could qualify as a transparency-risk system. Under the DSA, EU's regulatory reach for audits expands to platforms with at least forty-five million average monthly active users in the European Union.[130]

122. *See id.* at 3.

123. *See id.*

124. *See id.*

125. *Id.* at 13 n. 19.

126. *See European Commission Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonized Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, at 1, SEC (2021) 167 final (Apr. 21, 2021).

127. *See id.* at 14.

128. *See* Goodman & Trehu, *supra* note 46, at 291.

129. *See* Johann Laux et al., *Taming the Few: Platform Regulation, Independent Audits, and the Risks of Capture Created by the DMA and DSA*, 43 COMPUT. L. & SEC. REV. 3 (2021) (first quoting Commission Regulation 2022/2065, art. 25, 2022 O.J. (L 277); then quoting Commission Regulation 2022/2065, art. 37, 2022, O.J. (L 277)).

130. *See id.* (quoting Commission Regulation 2022/2065, art. 25, 2022 O.J. (L 277)).

B. U.S. Should Adopt EU's Risk-Based Approach with Algorithmic Audits and Require an Option for Consumers to Opt out of AI Pricing

EU's risk-based approach can serve to strike a balance between proactive regulation and innovation in the U.S. Regulating solely for existing AI systems today will be too narrow to capture future AI development. Therefore, the EU's risk-based approach offers general risk categories that aim at minimizing potential risks by looking at outcomes. This framework protects society from bad actors yet leaves room for risk-free or risk-minimum growth. Specifically, the regulation proscribes or heavily regulates certain AI uses but leaves the door open to innovation where such risk does not exist.

An effective AI regulation in the U.S. must require regular independent algorithmic audits for any AI system capable of discrimination or discriminatory impact. The EU Commission suggests that audits are required only for high-risk system.[131] However any system that has the potential to discriminate or have discriminatory outcomes should be regularly audited as this is arguably the most effective method to prevent discrimination.[132] While the EU may have addressed some part of this gap in the Digital Services Act,[133] the U.S. lacks a corresponding legislation and must expand any proposed AI regulation.

Independent algorithmic audits serve as the most effective tool for regulatory oversight because regulators can ensure fair outcomes despite the opacity of machine learning algorithms.[134] Algorithmic auditing is the process used to "review algorithmic processing systems."[135] The audit can entail checking governance documentation or testing an algorithm's outputs and inspecting the system's inner workings.[136] The overall goal in any algorithmic audit is to assure an algorithm's "safety, legality, and ethics."[137]

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131. *See European Commission Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonized Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, at 14, SEC (2021) 167 final (Apr. 21, 2021).

132. *See* Goodman & Trehu, *supra* note 46, at 335.

133. *See id.* at 306.

134. *See id.* at 296-97.

135. *See id.* at 291 (quoting DIGITAL REGULATION COOPERATION FORUM (DRCF), AUDITING ALGORITHMS: THE EXISTING LANDSCAPE, ROLE OF REGULATORS AND FUTURE OUTLOOK 2 (2022)).

136. *See id.* (quoting DIGITAL REGULATION COOPERATION FORUM (DRCF), AUDITING ALGORITHMS: THE EXISTING LANDSCAPE, ROLE OF REGULATORS AND FUTURE OUTLOOK 2 (2022)).

137. *See id.* (quoting Adriano Koshiyama et al., *Towards Algorithm Auditing: A Survey on Managing Legal, Ethical and Technological Risks of AI, ML and Associated Algorithms* SSRN ELEC. J. 1, 2 (2021)).

An inherent issue in regulating AI technology is that data transparency alone considers only a limited component of an AI algorithm.[138]

Scholars argue that a well-designed audit can serve as a substitute for lack of transparency in AI by focusing on outcomes.[139] Machine learning uses data both to train and to make decisions, however how the machine converts what it learns into predictions and then decisions is not easy to render transparent.[140] In a previously discussed example where a machine algorithm recommended extra medical care less frequently to Black patients than to White patients because of bias in data, researchers only uncovered the issue by conducting a meaningful inquiry into the data.[141] Some scholars caution that even algorithmic audits may not always be feasible in practice because companies will fiercely protect the intellectual property behind the algorithms.[142] Therefore, U.S. regulators must ensure that the proprietary information companies seek to protect remains confidential. Without a meaningful inquiry into the AI system, regulators will not recognize nor mitigate discrimination or bias.

C. AI Technology: Addressing Discrimination in Hotel Industry Personalized Pricing

Hotels employing AI systems to set personalized prices qualify as high-risk systems and require regular algorithmic audits. The EU AI Act defines high-risk systems as those which "create adverse impact on people's safety or their fundamental rights," such as those that control "access to and enjoyment of essential private services and public services and benefits."[143] Since pricing algorithms can meaningfully impact access to hotel facilities for some under-represented racial and ethnic groups or because of existing data bias, such systems may adversely impact people's fundamental rights of equal treatment. Under Title II of the Civil Rights Act of 1960, places of "public accommodation" cannot discriminate "based on race, color, religion, or national origin."[144] In *Heart of Atlanta*, the Supreme Court held that hotels qualify under the provisions of this act.[145] Thus, an AI system violates fundamental rights when it disproportionally prevents access to hotel rooms

138. *See id.* at 300.
139. *See id.*
140. *See id.* at 300-01.
141. *See* Slaughter et al., *supra* note 40, at 16-17.
142. *See* OXERA, *supra* note 1, at 30.
143. *See* EU Legislation in Progress, *supra* note 9, at 3, 12 n.13.
144. Heart of Atlanta Motel, Inc. v. United States, 379 U.S. 241, 245 (1964).
145. *See id.* at 249.

(because it sets the price too high) based on race, color, religion, or national origin.

Since AI systems employed in hotel pricing are high-risk systems, such systems would be subject to regular algorithmic audits. Algorithmic audits of systems used in the hotel industry would need to review outcomes with special attention to disparate impact on groups with any of the protected characteristics, race, color, religion, or national origin.

While algorithmic audits may exist as a periodic system health check against regulatory compliance, a stronger protection to fundamental human rights is to require an opt-out option. Some companies' Human Resources departments use AI to assist in resume screenings but allow the candidate to opt-out of AI review at no disadvantage to the applicant.[146] So it seems that giving consumers the power to completely take AI out of the pricing decision is a flexible way for companies to both prevent discriminatory outcomes and implement AI and observe early performance. This may not be ideal for hotels, however with AI technology being new to the market, a "fail-safe button" that allows users to opt out of AI pricing, may be just the remedy to give both consumers and legislators the time to observe outcomes and legislate with less uncertainty.

VI. CONCLUSION

United States Congress should look to the EU AI Act to implement a proactive regulatory framework for AI regulation in the United States that can protect consumers from discriminatory treatments when hotels implement personalized pricing strategies. With clear risks in AI usage such as under-represented populations in training data resulting in discriminatory outcomes and biased data outputs, it is up to legislators to protect consumers. While currently hotels do not automatically set prices for individual customers, AI systems will soon allow hotels to increase their revenues by setting a hotels' prices at a consumer's willingness to pay. If proper regulation is set in place, such hotel pricing systems will be subject to governmental oversight and regular independent algorithmic audits. Algorithmic audits are arguably one of the most effective tools to police AI systems, and in the context of hotels, audits can flag discriminatory outcomes for AI system developers to mitigate. Additionally, legislators should require that in the early adoption of AI in the new realm of consumer pricing, hotels

146. Caitlin Andrews, *How the US is Handling AI-Driven Hiring Practices*, IAPP (Dec. 4, 2024), https://iapp.org/news/a/how-the-us-is-handling-ai-driven-hiring-practices (stating that state-level regulations mandate opt-out provisions when companies use AI during as part of hiring processes).

give consumers the choice to opt out of AI pricing. As AI systems rapidly change, only forward-looking regulation will survive the test of time to foster growth in this exciting technological development.