



**The Journal of Robotics,
Artificial Intelligence & Law**

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Everything Is Not *Terminator* Is China's Social Credit System the Future?

John Frank Weaver*

In 2014, the central government of the People's Republic of China announced a "social credit" system, which will monitor the behavior of the nation's population and rank each person based on his or her social credit, *i.e.*, how well each person behaves as a citizen. The term social credit dates to 2002, when the central government was looking at establishing a system to measure the creditworthiness of its citizens, but ultimately wanted the system to be compatible with the social services system.¹ Forty-three municipalities are currently testing versions of the system, and the program is scheduled to be operational nationwide by 2020.² To track citizens, the municipalities' systems rely on huge amounts of personal data from a wide variety of sources, including social networks, smart phone apps, and video cameras already installed by the central government. Those cameras are part of "Skynet," the Chinese government's video surveillance system, the public purpose of which is to track criminal behavior, but which has more than 20 million cameras in public spaces across the country.³ The end goal is to rely on sophisticated artificial intelligence ("AI") to review all of this data and add and deduct points from citizens based on how well they engage in lawful behavior.⁴

The Future with AI

Not surprisingly, this has prompted a great deal of criticism.⁵ However, I can't help but wonder if this is the natural development of the future with AI.

One theme that I have returned to frequently when writing and speaking about AI is what laws and regulations should do in response to fundamental changes in society introduced by

technological changes.⁶ In particular, the century of legal changes in the wake of the American Industrial Revolution is a useful (albeit slow) example of what government can do to spread widely the benefits of massive technological advancements.⁷ The introduction of the factory system moved unprecedented numbers of people from rural communities to urban communities and shifted their work from farming to manufacturing, from work hours based on the seasons and the sun to work hours based on the company clock. In response, Congress and state legislatures enacted legislation that instituted a minimum wage, limited how many hours a person could work in a week, mandated workplace and environmental standards, and prohibited children from working.⁸ Essentially, elected representatives recognized that the Industrial Revolution had changed America and used laws and regulations to shape the new country into a version that was better for their constituents.

If AI is going to introduce as much change as many experts predict, as much as the Industrial Revolution,⁹ then we should wonder what that changed world will look like. In the same way that it would have been hard but not impossible for leaders at the beginning of the Industrial Revolution to predict how the world was going to change, it is difficult but not impossible for us to predict how AI is going to change the world. Systems like China's social credit system might be what it looks like.

That should not be too surprising. There are other versions of it in place already. In the United States, credit-rating agencies score and rank individuals based on their creditworthiness, a system that the Chinese central government relied on when it created its social credit system.¹⁰ In the United Kingdom, there are systems in place to score individuals using data from a variety of sources, like credit score, phone usage, and rent payments; based on those scores, individuals are ranked by preference for job applications, access to social services, etc.¹¹ Similarly, in Germany there are systems in place to track data and rank individuals based on creditworthiness and healthy lifestyle.¹² China's proposal is therefore not unique because of the theory it relies on, but because of its scope.¹³ That suggests that the world we live in is already marching toward national governments accepting that AI systems should analyze the vast amounts of personal data available to them and score citizens based on that analysis.

The Future of AI Does Not Have to be a Bad One

If that is likely the future, does it have to be a bad one? Read any of the articles in the footnotes of this column and you are likely to see the terms “dystopian,” “chilling,” and “Black Mirror” tossed around. That threat is real, and the possibility of a social credit system arbitrarily hurting already vulnerable populations is strong. It is all too easy to find stories of people in China who have been barred from jobs or schools,¹⁴ prohibited from purchasing certain train tickets,¹⁵ and banned from vacationing¹⁶ due to low social credit scores with no due process and for seemingly arbitrary or capricious reasons. However, I do not believe that is the inevitable result for two reasons.

First, the goal of the Chinese system and copycats in other nations is to reward good behavior and promote good citizenship, essentially through gamification.¹⁷ By assigning points to certain kinds of behavior, social credit AI systems incentivize that behavior, possibly making people better citizens, maybe without realizing they are becoming better citizens.¹⁸ On its face, that is not necessarily a bad idea. There have been numerous socially engineered methods of encouraging good behavior—Social Security numbers that make it harder to escape past bankruptcies and criminal behavior, civic awards, publication of police logs in newspapers, etc.—and this is arguably the next evolution of that. If successfully implemented, the gamification of good citizenship could lead to improved quality of life and civic engagement. However, the rules governing the behavior that is rewarded and punished, appeals of points awarded or deducted, and the transparency of the system are all vitally important.

Second, it is possible to implement laws and regulations that properly police a social credit system and provide reassurances to the public that (a) the right behavior is being rewarded, (b) the AI is not biased, and (c) there are appropriate safeguards for people to appeal and confirm their social credit scores. Here are a few suggestions for government regulations and policies that would result in a fairer, more beneficial social credit systems:

1. *Require Transparency:* The source code of the AI developed to evaluate data and issue social credit scores must be open to review and sandbox testing by the public.

All datasets and databases used to train the AI must be publicly available. All personal data used to determine actual social credit scores must be anonymized and made publicly available. Transparency is the first step toward reassuring the public that the social credit system is a public good and is being fairly administered.

2. *Establish a Governance Group:* Any central government that decides to develop a social credit system should also form a governance group that reviews all elements of that system: how behavior is classified as beneficial or not, how points are awarded, how individuals may appeal their points, etc. Populated by high-ranking officials—cabinet secretaries, key legislative leaders, etc.—and AI experts, this group should hold public meetings, accept public comment, and publish reports on its findings and recommendations.
3. *Require and Promote the Testing and Training of the AI:* The governance group should regularly test the social credit system's AI, train it so that the system more accurately rewards the appropriate behavior, and encourage third parties to test and train the sandbox version of the AI. This will both make the AI better and give public reassurances of the AI strengths and remediated shortcomings.¹⁹
4. *Require Ex-Post Analysis:* Ex-post analysis is a form of policing AI in which the developers use tools like cryptographic commitments and zero knowledge proofs to provide auditable evidence that the AI is performing key analyses correctly. Requiring that social credit AI uses these benchmarks will give private and government auditors another method to assess the operation of the AI.²⁰
5. *Institute an Appropriate Appeals Process:* In addition to the opaque and seeming arbitrariness of the Chinese social credit system, its most common complaint appears to be that there is no easy way to challenge or appeal the rewarding or deduction of points. Creating an appropriate administrative process for the appeal and review of points will be an important part of creating a social credit system that fairly promotes better citizenship. The system must be easy to navigate, administer, and police.

Obviously, the suggestions above are intended as broad ideas for making a social credit system consistent with the requirements of due process and the rule of law. But they also demonstrate that like many other governing inventions, including the development of regulatory and administrative legal models, the creation of a social credit system does not automatically mean that due diligence and responsible government are doomed. If political leaders look at where technology is trending, the social credit system can help to form a prosperous AI middle class in the 21st century, like legal reforms in reaction to the Industrial Revolution created America's prosperous industrial middle class in the mid-20th century.

Notes

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1. Alexandra Ma, "China has started ranking citizens with a creepy 'social credit' system—here's what you can do wrong, and the embarrassing demeaning ways they can punish you," *Business Insider* (October 29, 2018), <https://www.businessinsider.com/china-social-credit-system-punishments-and-rewards-explained-2018-4>.

2. *Id.*; Rene Raphael & Ling Xi, "Discipline and Punish: The Birth of China's Social-Credit System," *The Nation* (January 23, 2019), <https://www.thenation.com/article/china-social-credit-system/>.

3. Xinmei Shen, "What is 'Skynet,' China's massive video surveillance network," *Abacus News* (October 4, 2018), <https://www.abacusnews.com/who-what/skynet-chinas-massive-video-surveillance-network/article/2166938>. 20 million cameras is a conservative number. Other sources report as many as 200 million, "a figure set to triple" by 2020. Megan Palin, "China's 'social credit' system is a real-life 'Black Mirror Nightmare,'" *New York Post* (September 19, 2018), <https://nypost.com/2018/09/19/chinas-social-credit-system-is-a-real-life-black-mirror-nightmare/>. I should also point out that when writing about a national surveillance program called Skynet, the name of this column seems either a little too on the nose or a bad parody of itself.

4. See Paul Wallis, "Op-Ed: Chinese 'Social Credit,' or how AI can rule your life right now," *Digital Journal* (September 18, 2018), <http://www.digitaljournal.com/tech-and-science/technology/op-ed-chinese-social->

credit-or-how-ai-can-rule-your-life-right-now/article/532386; Karen Hao, “Is China’s social credit system as Orwellian as it sounds?,” *MIT Technology Review* (February 26, 2019), <https://www.technologyreview.com/f/613027/chinas-social-credit-system-isnt-as-orwellian-as-it-sounds/>.

5. See Palin, *supra* note 3 (“If your best friend or dad says something negative about the government, you’ll lose points too”); Maya Wang, “China’s Chilling ‘Social Credit’ Blacklist,” *Human Rights Watch* (republished from the *Wall Street Journal*) (December 12, 2017), <https://www.hrw.org/news/2017/12/12/chinas-chilling-social-credit-blacklist> (noting that penalties assessed due to the social credit system “were exacted in wildly arbitrary and unaccountable manners”).

6. John Frank Weaver, *Robots Are People Too* (Praeger Publishing, 2013), 46-48 (“Robots Are People Too”); Brendan McKinnon, “Should Artificial Intelligence Be a Legal Person?,” *BC Law Magazine* (September 11, 2018), <http://lawmagazine.bc.edu/2018/09/should-artificial-intelligence-be-a-legal-person/>; John Frank Weaver, “We Need to Pass Legislation on Artificial Intelligence Early and Often,” *Slate* (September 12, 2014), <https://slate.com/technology/2014/09/we-need-to-pass-artificial-intelligence-laws-early-and-often.html>.

7. *Robots Are People Too*, *supra* note 6, at 46-50.

8. Lewis C. Solmon and Michael Tierney, “Education,” in Glenn Porter, ed., *Encyclopedia of American Economic History*, vol. 3 (New York: Charles Scribner’s Sons, 1980), 1015-1016; Arthur M. Johnson, “Economy Since 1914,” in Glenn Porter, ed., *Encyclopedia of American Economic History*, vol. 1 (New York: Charles Scribner’s Sons, 1980), 117 & 127-128; Thomas K. McCraw, “Regulatory Agencies,” in Glenn Porter, ed., *Encyclopedia of American Economic History*, vol. 1 (New York: Charles Scribner’s Sons, 1980), 803-804.

9. Klaus Schwab, *The Fourth Industrial Revolution* (Currency, 2017); Elizabeth Schulze, “Everything you need to know about the Fourth Industrial Revolution,” *CNBC* (January 17, 2019), <https://www.cnbc.com/2019/01/16/fourth-industrial-revolution-explained-davos-2019.html>; Bernard Marr, “The 4th Industrial Revolution is Here—Are You Ready?,” *Forbes* (August 13, 2018), <https://www.forbes.com/sites/bernardmarr/2018/08/13/the-4th-industrial-revolution-is-here-are-you-ready/#4d44105a628b>.

10. Raphael & Xi, *supra* note 2.

11. Miranda Hall & Duncan McCann, “What’s Your Score?,” *New Economics Foundation* (July 10, 2018), <https://neweconomics.org/2018/07/whats-your-score>.

12. Cathrin Schaer, “Germany edges toward Chinese-style rating of citizens,” *Handelsblatt Today* (February 17, 2018), <https://www.handelsblatt.com/today/politics/big-data-vs-big-brother-germany-edges-toward-chinese-style-rating-of-citizens/23581140.html?ticket=ST-234038-NWJa3mpyHbTbfsifGTBh-ap4>.

13. Nicole Kobie, "The complicated truth about China's social credit system," *Wired* (June 7, 2019), <https://www.wired.co.uk/article/china-social-credit-system-explained>.

14. Ma, *supra* note 1.

15. Wang, *supra* note 5.

16. Karen Chiu, "China's social credit system is becoming a reality," *Abacus News* (July 10, 2019), <https://www.abacusnews.com/digital-life/chinas-social-credit-system-becoming-reality/article/3017971>.

17. Hao, *supra* note 4; Raphael & Xi, *supra* note 2; See Miriam A. Cherry, "The Gamification of Work," 40 *HOFSTRA L. REV.* 851, 852 (2012).

18. See Cherry, *supra* note 17, at 852 (The "idea that people could be working while they play a video game—in some instances *without even knowing that they are working*—is becoming part of our reality").

19. See John Frank Weaver, "Evidencing a Lack of Bias: Using Artificial Intelligence to Promote the Rule of Law," *Journal of the World Artificial Intelligence Conference* (forthcoming). This article discusses points 1-3 in the general context of AI used by governments.

20. See Deven R. Desai & Joshua A. Kroll, "Trust but Verify: A Guide to Algorithms and the Law," 31 *HARV. J. L. & TECH.* 1, 39-41 (2017).