Volume 1, No. 2 | March–April 2018

The Journal of Robotics, Artificial Intelligence & Law

fastcase FULL COURT PRESS

RAIL
The Journal of Robotics, Artificial Intelligence & Law
Volume 1, No. 2 | March–April 2018

THE JOURNAL OF ROBOTICS, ARTIFICIAL INTELLIGENCE & LAW (ISSN 2575-5633 (print) /ISSN 2575-5617 (online) at $495.00 annually is published six times per year by Full Court Press, a Fastcase, Inc., imprint. For customer support, please contact Fastcase, Inc., 711 D St. NW, Suite 200, Washington, D.C. 20004, 202.999.4777 (phone), 202.521.3462 (fax), or email customer service at support@fastcase.com.

Publishing Staff
Publisher: Morgan Morrissette Wright
Journal Designer: Sharon D. Ray
Cover Art Design: Juan Bustamante

Cite this publication as:

The Journal of Robotics, Artificial Intelligence & Law (Fastcase)

A Full Court Press, Fastcase, Inc., Publication

Editorial Office

711 D St. NW, Suite 200, Washington, D.C. 20004
https://www.fastcase.com/

POSTMASTER: Send address changes to THE JOURNAL OF ROBOTICS, ARTIFICIAL INTELLIGENCE & LAW, 711 D St. NW, Suite 200, Washington, D.C. 20004.

Articles and Submissions

Direct editorial inquires and send material for publication to:

Steven A. Meyerowitz, Editor-in-Chief, Meyerowitz Communications Inc., 26910 Grand Central Parkway, #18R, Floral Park, NY 11005, smeyerowitz@meyerowitzcommunications.com, 718.224.2258.

Material for publication is welcomed—articles, decisions, or other items of interest to attorneys and law firms, in-house counsel, corporate compliance officers, government agencies and their counsel, senior business executives, scientists, engineers, and anyone interested in the law governing artificial intelligence and robotics. This publication is designed to be accurate and authoritative, but neither the publisher nor the authors are rendering legal, accounting, or other professional services in this publication. If legal or other expert advice is desired, retain the services of an appropriate professional. The articles and columns reflect only the present considerations and views of the authors and do not necessarily reflect those of the firms or organizations with which they are affiliated, any of the former or present clients of the authors or their firms or organizations, or the editors or publisher.

QUESTIONS ABOUT THIS PUBLICATION?

For questions about the Editorial Content appearing in these volumes or reprint permission, please call:

Morgan Morrissette Wright, Publisher, Full Court Press at mwright@fastcase.com or at 202.999.4878

For questions or Sales and Customer Service:

Customer Service
Available 8am–8pm Eastern Time
866.773.2782 (phone)
support@fastcase.com (email)

Sales
202.999.4777 (phone)
sales@fastcase.com (email)
ISSN 2575-5633 (print)
ISSN 2575-5617 (online)

AI's Transformational Role in Making HR More Objective While Overcoming the Challenge of Illegal Algorithm Biases

Garry Mathiason*

The development of mature artificial intelligence programs for human resources data collection, predictive analytics, and cognitive computing will accelerate and is unstoppable. The author of this article discusses the role of artificial intelligence in human resources decision-making and the dark side of the use of algorithms in making critical decisions.

The "Fearless Girl" statue was installed on the eve of International Women's Day in early March 2017. It stands on Wall Street as a symbol of female empowerment and gender equality. It was commissioned by State Street Global Advisors ("SSGA"), the investment arm of the 225-year-old Boston-based State Street Corporation.

Also in 2017, the company announced State Street Quantextual Idea Lab, combining advanced machine learning (artificial intelligence) with human expertise to address the challenges and opportunities provided by today's Big Data.[1]

Fearless Girl and Quantextual are representative of two of the most powerful forces reinventing and redefining business, the workplace, and work itself. The automation of the last century is rapidly being augmented and replaced by intelligent self-learning machines and systems driven by cloud computing, breakthroughs in sensor technology, and creation of new algorithms that harness the power of "Big Data." At the same time, female and minority empowerment and pay equity are increasingly becoming key social and corporate values. Sex, race, and many other forms of protected category discrimination in hiring, promotions, and terminations have been prohibited by federal and state statues, regulations, and executive orders, some dating back 50 or even 75 years.[2] More recently, pay equity between "similarly situated employee groups" has become a leading initiative of government, public and private employers, civil rights organizations, and the American workforce

Robotics, Artificial Intelligence & Law / March–April 2018, Vol. 1, No. 2, pp. 91–99

ISSN 2575-5633 (print) /ISSN 2575-5617 (online)

generally. Since January 1, 2016, with the application of California's Fair Pay Act prohibiting paying women and minorities in similarly situated employee groups from being paid less even if the actual work performed is different, every state but two has similar legislation enacted or under active consideration.[3]

Now for the rest of the story: on October 6, 2017, *The New York Times* reported, "[t]he firm that commissioned the popular 'Fearless Girl' statue in New York's financial district has agreed to pay $5 million, mostly to settle claims that it discriminated against 305 top female employees by paying them less than men in the same positions. The U.S. Labor Department also 'alleged discrimination against 15 of its black vice presidents by paying them less than white employees in the same positions.'"

Significantly, SSGA does not admit liability and the matter was never litigated. The Company explained that it "is committed to equal pay practices and evaluates on an ongoing basis our internal processes to be sure our compensation, hiring and promotions programs are nondiscriminatory," according to The Associated Press.[4] This author does not doubt that the Company intended to comply with pay equity statutes, is committed to female empowerment and gender equality, and strongly supported nondiscrimination in compensation, hiring, and promotion.

We don't know the details of the Company's compliance procedures or its full deployment of artificial intelligence in the form of predictive analytics accumulating and evaluating human resources ("HR")–related big data, including compensation equity. Nonetheless, this experience raises the vital importance of every employer reviewing how its personnel decisions are made, especially the use of predictive analytics and big HR data in compensation decision-making. This should include checking for possible unintentional biases coded into the algorithms. At the same time, employers should be evaluating the enormous advantages of deploying bias-tested artificial intelligence systems in ensuring legal compliance with, for example, pay-equity requirements.

AI's Transformation of the Workplace Is Unstoppable and Necessarily Includes HR Decision-Making and Reporting

Predictive analytics and "big data" already have been embraced by businesses worldwide as essential for survival. Yet only now is

artificial intelligence being aggressively introduced to HR departments and the hiring, compensation, and termination of employees, as well as the recruiting and retention of freelancers as part of the "gig" economy. According to Deloitte's Global Human Capital Trends 2014 survey of over 2,500 HR leaders, just 14 percent of HR departments were then seriously using HR data analytics. That compares to 77 percent of operations organizations, 58 percent of sales organizations, and 56 percent of marketing organizations.[5]

Deloitte's 2017 Global Human Capital Trends issued February 27, 2017, indicated significant change had taken place in only three years.[6] "Organizations face a radically shifting context for the workforce, the workplace, and the world of work. Our survey of more than 10,000 business and HR leaders from 140 countries reveals 10 areas for businesses to focus on to better organize, manage, develop, and align people at work." The Report continues, "It is abundantly clear that technology is advancing at an unprecedented rate. Technologies such as artificial intelligence (AI), mobile platforms, sensors, and social collaboration systems have revolutionized the way we live, work, and communicate—and the pace is only accelerating."[7] Quantifying the progress, the Deloitte report concludes: "This year [2017], 41 percent of companies reported they have fully implemented or have made significant progress in adopting cognitive and AI technologies within their workforce."[8]

Michael Housman, Co-Founder and Chief Data Science Officer for RapportBoost.AI, Faculty Member at Singularity University, and overall artificial intelligence expert responsible for following broad industry trends in AI and robotics, projected that by 2020, over 50 percent of the world's HR departments will use tools that employ some form of AI in making or advising regarding hiring, performance, and compensation decisions as well as many other HR reporting or decision-making functions.[9]

Algorithms Acting Badly—Cognitive Biases and Lack of Transparency (e.g. Trade Secrets)

There is a clear dark side to the use of algorithms in making or recommending critical HR decisions such as hiring, compensation, promotion, and termination. The challenges are (1) biases from programmers that are a part of the coding process, and, (2) the failure or inability to determine how an algorithm makes a decision

involving advanced self-learning or cognitive computing. Regarding the lack of transparency, it could come from the absence of an identifiable source when machine learning advances without disclosing the patterns it has detected, or a refusal to disclose known factors used in decision-making on the grounds that it is a trade secret.

Several researchers have confirmed the existence of bias in algorithms.[10] Wikipedia reports a list of over 175 cognitive biases. Several would include illegal biases under existing employment laws.

"Biased Algorithms Are Everywhere, and No One Seems to Care: The big companies developing them show no interest in fixing the problem" published in the July 12, 2017 issue of *MIT Technological Review* reports on biased algorithms and the severe harm this can cause. The senior editor of AI for the *Review,* Will Knight, announces "[a]lgorithms that may conceal hidden biases are already routinely used to make vital financial and legal decisions. Proprietary algorithms are used to decide, for instance, who gets a job interview, who gets granted parole, and who gets a loan." He concludes, such biased algorithms are especially harmful "for poorer communities and minorities."

The illegal biases will often be unintended, such as using the zip codes of applicants to influence hiring decisions (based on past experience), yet this could likely favor higher-wealth white applicants over lower-wealth minorities.

Even names more associated with a particular race can result in machine-created bias. Harvard professor, Latanya Sweeny, entered her name in the Google search engine. Next to the list of relevant websites was an ad for a background search firm that read "Latanya Sweeny arrested?" It was discovered that names common among African Americans such as Trevon, Lakisha, or Latanya, were far more likely to draw the "arrested" question than traditional names more associated with Caucasians. Citing this and other examples, Andrew McAfee and Erik Brynjolfsson, in their 2017 treatise, *Harnessing Our Digital Future: Machine Platform Crowd,* conclude, "A real risk of turning over decisions to machines is that bias in algorithmic systems can perpetuate or even amplify some of the pernicious biases that exist in our society."[11]

The second great concern is the lack of transparency due to the complexity of the algorithms, especially if the transaction was the result of machine learning and the decision-making process used unknown patterns.

Another transparency challenge is a deliberate failure to disclose, for example, claiming a trade secret. This is the issue recently litigated before the Wisconsin Supreme Court in *State v. Loomis*.[12] Eric Loomis was sentenced to six years in prison following the use of proprietary, closed-source risk assessment software. In discovery, Mr. Loomis' counsel sought to learn the factors the software considered in making its decision. Providing this information was refused by the software developer on the grounds it was a trade secret, and disclosure would destroy the value of the secret software if learned by a competitor.

Defendant Loomis contended that his right to due process was violated because: (1) he was prevented from challenging the scientific validity and accuracy of the algorithm, (2) gender and race were allegedly taken into account, and (3) a risk-assessment instrument, whose workings are protected as a trade secret, was used by the State.

The court was critical of the lack of transparency, but denied the appeal. It ruled that the staff making the sentencing recommendation, as well as the court, were able to access information in addition to what was provided by the risk-assessment instrument, as well as the "static" information that may have been considered by the technology. Second, the court ruled that the defendant was given full knowledge of the use of the instrument so it could review, for example, outside reports on the accuracy of the instrument. Also, no recommendation was made or considered regarding the actual sentence, as opposed to the risk rating of future violent crime.

The U.S. Supreme Court denied the writ of certiorari brought by defendant Loomis, thus declining to hear the case, on June 26, 2017.[13] Clearly, this is not the end of transparency in criminal sentencing cases or HR decision-making. However, until there is a split among the state supreme courts or circuit courts, the U.S. Supreme Court is likely to remain silent.

AI Used In HR Decision-Making and Reporting Promises Greater Objectivity, Yet Introduces Potential Hidden Biases: Practical Compliance Solutions for the Digital Future

While biases are present in algorithm decision-making, it is also true that algorithms make decisions that are far more objective than

human decision-making by itself. This process improves the more situations are submitted to matching intelligence for decisions or recommendations.[14] In the first decades of the twenty-first century, the compliance solution requires finding a workable balance between the objectivity of AI-enhanced HR processes and the risk of hidden bias.

The Equal Employment Opportunity Commission ("EEOC") is currently going through the process of deciding how to respond to AI decision making. "We know at the EEOC that the use of Big Data and artificial intelligence is fundamentally changing how employment decisions are made," said former EEOC Chair Jenny Yang, while she was still Chair. "What we are doing right now is considering how do we best apply our existing antidiscrimination protections to this area." Simultaneously, she said, "*the EEOC recognizes the importance of promoting innovation in the use of Big Data to affect personnel decisions for the better by, for example, improving targeted recruitment of minority candidates* [emphasis added.]."[15]

An important legal question is whether the EEOC, or a court in private litigation, can support a finding of unlawful discrimination under Title VII or a violation of a pay equity statute based on a bias within an algorithm, even if the overwhelming majority of AI decisions better protect minorities from unlawful discrimination and are far more objective than comparable human decisions. This is not a difficult question. If an unlawful bias is proven in an algorithm by a plaintiff (or a class of plaintiffs), and this AI is relied upon to make a discriminatory decision, it is virtually certain that both governmental agencies and courts would find liability.

A serious challenge is to identify bias without discouraging innovation and the great benefits that can come from AI's potential to be objective and less biased than human decision makers acting alone. Ms. Yang addressed this issue when she observed, "[b]ig data has the potential to drive innovations that reduce bias in employment decisions and help employers make better decisions in hiring, performance evaluations, and promotions." This powerful statement came with an equally powerful disclaimer: "[a]t the same time, it is critical that these tools are designed to promote fairness and opportunity, so that reliance on these expanding sources of data does not create new barriers to opportunity."

The strong recommendation from McAfee and others regarding a compliant AI decision-making process is to include human

review. This does not mean that every decision and all the supporting data need to be surveyed by a human. The introduction of a human in the decision-making process brings "common sense" into the system.

Turning to how the courts will likely permit and support the growing use of AI in positive HR decision-making, the Wisconsin Supreme Court provides a two-part road map. First, keep a human review as part of the AI-enabled HR decision-making process. In deciding against Mr. Loomis, the court reasoned that the staff's sentencing recommendation and trial judge's decision were made when they had access to information in addition to the risk assessment rating. Second, disclose that AI is being used as part of the HR decision-making process. Like in the Loomis case, this disclosure should be sufficient to allow a "general" review of the accuracy of the algorithm(s) being used by the industry. For example, if the AI procedure or product has been generically tested or audited for bias results, that information could be potentially used, even though the internal operation of the algorithm is not reviewable because of machine learning or a reasonable risk of disclosure of a valid trade secret.

Another compliance solution is to do an audit of the AI decision-making outcomes. If possible, this review should be done under attorney-client privilege with the understanding that underlying facts are not subject to the privilege. This reduces concern that the audit's "findings" would be subpoenaed and disclosed without the employer's agreement. At the NYU EEOC presentation, Professor Pauline Kim[16] speculated that if an employer undertakes a credible audit of AI decision-making regarding HR matters, this could allow the EEOC to create a safe harbor from future litigation. A safe harbor would certainly encourage more quality employer audits of whether the AI-assisted decision-making process had created a disparate impact on a protected category.

Returning to the "Fearless Girl" and the concern that an employer may not know whether its pay equity policies and procedures are fully compliant with the multiple federal and state statutes and regulations that now and in the future mandate pay equity among similarly situated employee groups, not just for sex, but including race and potentially many other protected categories, there is a solution. The use of AI could be invaluable in doing a pay equity review or audit.

Concluding Predictions

The development of mature AI programs for HR data collection, predictive analytics, and cognitive computing will accelerate and is unstoppable. Employers who refrain from implementing a mature AI system as part of the HR department for function will, within five to 10 years, cause not only the department to fail, but the entire enterprise. Within this same time period, it will be overwhelmingly recognized that AI leads to more objective and less biased HR decision-making. Likewise, employers will be required to recognize at least the unlawful bias associated with algorithms and embark upon compliance solutions. Welcome to Workplace 2025 and the Digital Future!

Notes

* Garry G. Mathiason is a shareholder at Littler Mendelson P.C., where he is the founder and co-chair of the firm's Robotics, AI and Automation Industry Group and a class action litigator and strategist. A member of the Board of Editors of *The Journal of Robotics, Artificial Intelligence & Law,* Mr. Mathiason may be reached at gmathiason@littler.com.

1. Julie Kane, *State Street Combines Quantitative Power of Machine Learning with Human Expertise to Launch Quantextual Idea Lab* (Sept. 20, 2017), http://newsroom.statestreet.com/press-release/corporate/state-street-combines-quantitative-power-machine-learning-human-expertise-la.

2. The Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, and the Age Discrimination in Employment Act of 1968 were enacted when AI and AI-empowered collaborative robotics were strictly the domain of science fiction. In June 1941, 76 years ago, on the eve of World War II, President Franklin D. Roosevelt signed Executive Order 8802, prohibiting government contractors from engaging in employment discrimination based on race, color or national origin. This order is the first presidential action ever taken to prevent employment discrimination by private employers holding government contracts.

3. In Massachusetts, SB 2119, which prohibits employers from discriminating on the basis of gender in the payment of wages, including benefits or other compensation, or paying any person a salary or wage rate less than the rates paid to employees of a different gender for comparable work; in Maryland, HB 1003/SB 481, which expands Maryland's Equal Pay for Equal Work law to prohibit wage discrimination based on gender identity, and bans Maryland employers from prohibiting employee inquiries, discussions or disclosures of their wages; in New York, SB 1/AB 6075, which provides new worker protections relating to asking about, discussing, or disclosing wages.

4. Matt Stevens, *The New York Times,* Firm Behind "Fearless Girl" Statue Underpaid Women, U.S. Says," (Oct. 6, 2017), https://www.nytimes.com/2017/10/06/business/fearless-girl-settlement.html.

5. Michael Stephan, Henri Vahdat, Hugo Walkinshaw, and Brett Walsh, Deloitte University Press, *Global Human Capital Trends 2014: Engaging the 21st-century workforce* (2014), https://www2.deloitte.com/content/dam/Deloitte/ar/Documents/human-capital/arg_hc_global-human-capital-trends-2014_09062014%20(1).pdf.

6. Jeff Schwartz, Laurence Collins, Heather Stockton, Darryl Wagner and Bretty Walsh, Deloitte University Press, 2017 Global Human Capital Trends: Rewriting the rules for the digital age (2017), https://www2.deloitte.com/us/en/pages/human-capital/articles/introduction-human-capital-trends.html.

7. *See* pp. 1-2.

8. *See* p. 119.

9. Mr. Housman made this statement as part of an interview conducted by the author.

10. *See* Rolf Dobelli, The Art of Thinking Clearly, Chapter 99 (2013).

11. *See* p. 51.

12. 371 Wis. 2d 235 (2016).

13. *Loomis,* 137 S.Ct. at 2290.

14. *See* McAfee and Brynjolsson, *Harnessing Our Digital Future: Machine Platform Crowd,* at p. 81.

15. Former chair of the EEOC, Jenny R. Yang, November 3, 2016 at New York University.

16. The author attended the NYU presentation at which Professor Pauline Kim was a panelist. Professor Kim is a nationally recognized expert on the law governing the workplace. Her current work focuses on the use of big data in the workplace and the implications for employee privacy and workplace discrimination. She co-directs Washington University's Center for Empirical Research in the Law and is Past-President of the Society for Empirical Legal Studies.