THE FUTURE IS NOW
ARTIFICIAL INTELLIGENCE IN THE WORKPLACE

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I. Introduction

Artificial Intelligence (AI) is on the forefront of what is referred to as the Fourth Industrial Revolution – a revolution involving changes to the way people live, work, and relate to one another due to advances in technology. While the notion of AI changing the world has been considered abstractly in philosophy and entertainment, little guidance is offered by federal and state policies, regulations, and laws.\(^1\) Given the amount of AI already in the market, the expected exponential pace of development, and the novel questions presented by the use of learning machines performing tasks previously unique to humans, understanding and planning for the legal aspects of AI is advisable.\(^2\) This white paper provides an overview of AI, describes some examples of its applications, and highlights labor and employment considerations that may be relevant to consider.

II. What is AI?

AI, stated simply, involves machines performing tasks in a way that is “intelligent.” It has been defined as “that activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment.”\(^3\) There are many forms of AI. Recent applications of AI fall into two general categories: (1) “Mobile AI,” like Autonomous Vehicles,\(^4\) and (2) “static AI,” such as computer programs performing legal services.\(^5\) AI can also be distinguished between: (1) “narrow AI,” related to specific application areas such as strategic game playing, autonomous cars, image recognition and language translation, and (2) “general AI,” defined as “intelligent behavior at least as advanced as a person across the full range of cognitive tasks.”\(^6\) Recent developments in AI applications have been in narrow AI; experts believe progress on general AI is still at least decades away.\(^7\)

III. How Does AI Work?

The branch of AI that is most commonly incorporated into the modern workplace is machine learning. Machine learning techniques, where AI systems learn by examples or teach themselves to carry out tasks based on pattern recognition, can be broken down into four categories.\(^8\)

1. **Deep learning:** is the “use of software algorithms to analyze large datasets in what are called neural networks as they seek to mimic the way the human brain works.”

2. **Supervised learning:** is the method of training an AI system “with a restricted dataset of labeled examples.”

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\(^2\) Id.


\(^5\) *Artificial Intelligence and Life in 2030*, supra note 2 at 14.

\(^6\) *Preparing for the Future of Artificial Intelligence*, Executive Office of the President National Science and Technology Council Committee on Technology, at 7 (October 2016).

\(^7\) Id.

\(^8\) Kemp, * supra note 13 at 3.*
3. **Unsupervised learning**: is when AI systems are exposed to huge volumes of unlabeled data; in unsupervised learning, the system makes up its own rules for what to look for, allowing the AI to discover otherwise hidden correlations in data.

4. **Reinforcement learning**: is a combination of supervised and unsupervised learning where machine-learning starts training by examples and reduced datasets, and then the AI learns by itself with unlabeled data.

Large-scale machine learning involves scaling machine learning by introducing algorithms to larger datasets “so that algorithms need only operate once (as opposed to several times) on all, or even part of, the data to achieve a faster response.”

The benefits of AI include improved efficiency, lower costs of products and services, improved quality, and less errors. But machine learning AI is not perfect. Developing and improving AI requires training data and inputs. The biases embedded in the selection by people of or the nature of the data used to train AI can result in false positives and false negatives, leading to decreased public confidence in the positive potential of AI. Indeed, media attention has recently centered on allegedly sexist chatbots, facial recognition algorithms that misidentify people, as well as complaints that privately developed risk score algorithms for criminal defendants licensed for use by law enforcement agencies are racist.

In 2016, the Executive of Office of former President Obama issued a report on algorithmic systems, AI opportunity, and potential civil rights issues, highlighting the potential for positive impact from AI, while underscoring issues about “the potential of encoding discrimination in automated decisions.” Among other concerns flagged in the report are concerns that machine-learning systems have an inherent “black box” problem wherein many users do not understand how the system operates and the processes that undergird “decisions” made by AI. The report identified as one example of an error of an AI system “[d]ecision-making systems that assume correlation necessarily implies causation” – in other words, situations in which a programmer or algorithmic system assumes that because two factors frequently occur together, there is necessarily a causal relationship between them – this, according to the report’s authors, could potentially lead to unlawful discrimination. The report flags as potential legal risks disparate treatment and disparate impact liability under relevant state and federal anti-discrimination laws. The Executive Office encouraged companies to emphasize transparency, accountability, and due process mechanisms in an effort to ensure AI systems used in the workplace are accurate and fair.

IV. **AI Use Cases**

The increasing importance of AI to the modern workforce was emphasized by a February 2019, executive order signed by President Trump titled "Maintaining American Leadership in Artificial Intelligence," also known as the American AI Initiative, that aims to increase the use of artificial intelligence (AI) nationwide. The executive order identifies various federal AI-related policies, principles, objectives, and goals, including: increased federal investment in AI research and development, better education of workers relating to AI, promotion of national trust in AI systems, an emphasis on improved access to the cloud

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9 Id.
computing services and data needed to build AI systems, the creation of technical and regulatory standards relating to AI, and the promotion of AI-related cooperation with foreign powers. According to Michael Kratsios, deputy assistant to the president for technology policy, the executive order, and the policies underlying it, are designed to "prepare America’s workforce for [the] jobs of today and tomorrow."

As noted in the Executive Order, AI has applications in every sector of the American workforce. The following highlights some examples of how AI is being incorporated into a variety of disparate American workplaces and in human resources:

1. **Automotive.** Today's semi-autonomous vehicle systems, and “cobot” drones and robots used in warehouses, are expected to become tomorrow's fully autonomous intelligent transportation systems, and online-purchase revolutionizing delivery drones.  

2. **Law.** The legal services industry in the United States is approximately a $275 billion market annually. AI systems continue to develop in this sector, with companies like ROSS and LegalMation, offering AI to assist in the performance of early stage litigation services.

3. **Medicine.** Healthcare and medical applications of AI systems are expected to improve quality of life for millions. AI systems in medicine are already assisting with "clinical decision support, patient monitoring and coaching, automated devices to assist in surgery or patient care, and management of healthcare systems." 

4. **Agriculture and food preparation.** AI systems in agriculture and food preparation are predominantly mobile AI incorporating robotic hardware, and are beginning to work alongside human employees.

5. **Government uses of AI.** From criminal justice, to health and welfare, AI is being used in scoring systems and algorithms to inform decision makers on life-changing decisions, such as granting bail, sentencing, and prioritizing services.

6. **AI in Human Resources.** Employers are increasingly turning to AI to support and augment human resources functions. Perhaps the most common area where AI is being used in human resources (HR) is with talent acquisition – recruiting and hiring. But HR AI applications are much broader, including: the use of chatbots to communicate with employees; harnessing data analytics to assess employee compensation; deploying augmented analytics to assist with identifying high performers and employee satisfaction; analyzing employee social media and emails to determine employee satisfaction; and combining wearable technology with AI to identify inefficiencies in the workplace.

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12 See generally supra note 2.
14 See generally supra note 2 at 25.
15 Id.
16 See generally Lapowsky, note 80; and Levendowski, supra note 55 (giving the examples of a Boston man who sued a registry after having his license revoked when it falsely identified him, and the Taiwanese student who was stranded in an Australian airport when he couldn’t renew his passport because AI incorrectly identified his eyes as being closed).
V. A Legal Use Case – LegalMation

In the legal services industry, litigation automation tools are being deployed into the marketplace. As noted, LegalMation is an example of those tools. It provides litigation document automation; LegalMation can automatically create standard litigation documents such as: draft answers with affirmative defenses, discovery requests, and discovery objections and responses. These documents, which are in draft form and must be reviewed by legal counsel, can be created in approximately two minutes. LegalMation is able to produce these draft documents after extensive jurisdiction- and subject matter- training of their system through the use of machine learning.

VI. Questions to Consider

As AI expands into modern workplaces, employers may want to consider the following questions to ensure legal and regulatory compliance from a labor and employment perspective:

1. **Through the technology, is data being collected, stored, or transmitted?** As the examples discussed above highlight, many AI systems collect, store, and/or transmit enormous amounts of data—often sensitive data. Various international, federal, and state rules and common law govern the collection, storage, and movement of data, as well as privacy rights. This area of the law is evolving, so employers may want to carefully review their obligations and stay up to date.

2. **Is the technology changing employees’ terms and conditions of employment?** AI is changing employees’ working conditions, from minor workflow alterations to more significant changes like the displacement of employees through layoffs or reductions in force. In a unionized workforce, many changes to the terms and conditions of employment are subject to the collective bargaining process. Moreover, regardless of whether a union is in place, changes to employees’ working conditions may implicate other state and federal laws like the Worker Adjustment and Retraining Notification Act of 1988, which mandates notification obligations before certain types of workplace employee reductions, and relevant discrimination statutes, such as the Age Discrimination in Employment Act of 1967. Employers may want to ensure before any changes are made to employees’ conditions of employment – including terminations, demotions, etc. – that they review whether any applicable rules may arguably be violated.

3. **Is the technology changing the physical working environment?** Under the Occupational Safety and Health Act, employers have a legal duty to maintain a safe workplace. The Occupational Safety and Health Administration has developed specific standards for employers utilizing robotics to ensure that the technology is safe for employees. Depending on the nature and function of the technology at issue, various additional federal and state workplace safety laws may also be implicated. Employers may want to be mindful of these rules and ensure compliance with them.

4. **Is the technology affecting employment-related decision-making?** Employers are increasingly using AI to analyze job applicants and make day-to-day employment-related decisions. For example, some employers are using AI-powered software programs to auto-screen resumes as a traditional recruiter
would, and others are using AI recruiting assistants to communicate with applicants through messaging apps. The information used to structure an AI algorithm could be unintentionally biased, which could potentially lead to discrimination claims by employees and/or applicants. If employers are using AI either directly or indirectly to make employment-related decisions, employment discrimination risks should be evaluated and mitigated against, if possible, by, for example, understanding the data used to build out and/or train the AI at issue and regularly auditing decisions made through the use of AI.

In addition to the legal concerns identified above, the advance of AI and advanced technologies into the workplace presents equally weighty employee relations challenges. Employees are often curious, concerned, or anxious about what technological developments will mean for their jobs. Moreover, retraining and “upskilling” will become increasingly common buzzwords with advanced technologies in the workforce. Careful consideration surrounding communication, timing, and information sources are important components of human resources professionals’ role relating to technology in the workplace.
The Future Is Now: Artificial Intelligence in the Workplace

Presenters
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What is AI and why should we care?
AI is a Collection of Technologies

AI as a Classification System
Siri – Apple iPhone

Alexa – Amazon Echo

Assistant – Google Home

Google Duplex – Next Gen Assistant

“Hi, I’m calling to book a women’s haircut for a client.”
Google Duplex – Next Gen Assistant

- Natural sounding voice
- “Um”
- “Sure give me one second.”
- “Mm-hmm”
- “Sure, what time are you looking for around?”
- “Depending on what service she would like. What service is she looking for?”

Why is AI important now?
AI Can Drive Efficiency, Error Reduction, and Better Products
Knowledge Management Perspective

- Quality
  - Better
- Consistency
  - Stronger
- Efficiency
  - Faster

Knowledge Management Perspective

AI Tools

Know

Share
AI for Litigation – LegalMation

Robust Amount of Overt and Latent Data/Information

- Type of claim
- Basis for claim
- Amount in controversy
- Types and extent of damages
- Location
- Plaintiff attorney information
- Venue/jurisdiction
- 2000 data points/relationships (500 in each domain)

Humans + Machines = Success

Division of Labor as Share of Hours Spent (%)

<table>
<thead>
<tr>
<th></th>
<th>Human</th>
<th>Machines</th>
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<tbody>
<tr>
<td>2018</td>
<td>71%</td>
<td>29%</td>
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<tr>
<td>2022</td>
<td>58%</td>
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<tr>
<td>2025</td>
<td>48%</td>
<td>52%</td>
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Potential pitfalls with AI
Combating Ai Bias

May 23, 2016

[Graph showing Black Defendants' Risk Scores and White Defendants' Risk Scores]

These charts above that serve for white defendants were deemed lower-risk categories. Scores for black defendants were much higher, probably a result of the race. (Reed Islands County, Pa.)

Hi! I'm the Google Assistant calling to make a reservation for a client.

This automated call will be recorded. Can I book a table for Tuesday, the 12th?
Key Questions for L&E Compliance

1. Through the tech, is data being collected, stored, or transmitted?
2. Is the tech changing employees’ terms and conditions of employment?
3. Is the tech changing the physical working environment?
4. Is the tech affecting employment-related decision-making?
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