

# Peeling Back the Curtain to Unmask the Wizard of AI: Considering the Collaborative Relationship Between Non-Technical Subject Matter Experts and Artificial Intelligence

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## **Abstract**

“Will robots steal our jobs?” Contrary to concerns about job displacement, this paper argues that the integration of artificial intelligence (AI) in various industries creates new career opportunities for non-technical subject matter experts (SMEs), such as historians, educators, and ethicists. The role of these experts is crucial in shaping and fine-tuning AI models and addressing challenges like hallucinations and the lack of human nuance. Through case studies in historical research and legal domains, this paper draws upon research and recent articles from industry experts to demonstrate how AI, when complemented by non-technical SMEs, enhances productivity, accuracy, and innovation.

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## Introduction: The Great & Powerful

In L. Frank Baum's seminal 1900 classic "The Wizard of Oz", Toto, Dorothy's scrappy little dog, peels back the curtain to reveal the truth behind the 'great and powerful Oz.' To everyone's surprise, it was a mere mortal that was behind the illusion. Much like Toto's insightful revelation, this paper endeavors to illuminate the role of non-technical professionals – an invisible cadre encompassing subject matter experts, domain experts, and ethicists. These experts, akin to Toto's quiet unveiling, wield influence behind the scenes, actively shaping the formidable engine of generative artificial intelligence (AI). The argument presented posits that this symbiotic

collaboration will usher in new career opportunities across diverse professions, ranging from political scientists and early childhood education specialists to health and fitness experts, as the demand for seasoned professionals in their respective fields intensifies.

While both the Wizard and the invisible cadre of experts represent unseen forces that the general public has little knowledge of, in sharp contrast to Baum's Wizard character, the various types of non-technical experts behind AI bring actual value from multiple perspectives and are critical to AI's development and ongoing success. Baum's Wizard was proven to be a charlatan, but non-technical experts are the real deal. They regularly collaborate with AI and technical experts behind the scenes on everyday tasks such as content creation, language translation, fact and reference checking, and predictive modeling on a wide range of topics and domains.

## So What? The 10,000 ft. View

*So, why examine the relationship between non-technical experts and AI?* The rapid evolution of generative AI technologies, in particular large language models such as Chat GPT, has triggered dialogue about its role in society. In particular, discussion about AI's impact on the job market, such as how AI will integrate with humans in the workforce on a day-to-day basis, has garnered much media attention. Both the literature and researchers, such as Wang and Ringel, express opinions that run contrary to much of the media hype. Instead of predicting how AI will take over the workforce, these sources mention the need for non-technical subject matter expertise in navigating this transformative landscape.<sup>1</sup> This need is bolstered by data supported by the U.S.

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<sup>1</sup> Wang, Weiguang, et al. "Knowledge Trap: Human Experts Distracted by Details When Teaming with AI." University of Miami Business School Research Paper No. 4395858, 21 Mar. 2023, SSRN: <http://dx.doi.org/10.2139/ssrn.4395858>, pg. 6., Ringel, Daniel. "Creating Synthetic Experts with Generative Artificial Intelligence." Kenan Institute of Private Enterprise Research Paper No. 4542949, 5 Dec. 2023, SSRN: <https://ssrn.com/abstract=4542949> or <http://dx.doi.org/10.2139/ssrn.4542949>, pg. 2.

Bureau of Labor Statistics (BLS) which forecasts that jobs like data scientist are expected to grow by 35% until 2032, which is much faster than the average occupation.<sup>2</sup>

*How can a non-technical expert bring value to artificial intelligence?* Non-technical experts bring value by collaborating with AI and computer specialists to grow and shape current and new iterations of AI by helping organizations develop valuable AI tools relevant to their respective fields. These experts may work on tasks such as evaluating the model's response for accuracy and quality and systematically implementing improvements to the model. Other experts, such as an AI ethicist, will also work together with AI and technical specialists on projects such as improving algorithms to address social biases and ensuring inclusivity.

*Is AI a threat to the job market?* While concerns about job displacement persist, a closer examination reveals that AI's true potential lies in supplementing human expertise, not replacing it. As generative AI evolves, so should the role of the non-technical SME. This tandem evolution shapes the adoption and ethical application of artificial intelligence. The research and literature review endeavors to shed light on the notion that there are non-technical experts who can move the needle forward if given the opportunity to do so. By leveraging the power of domain expertise, non-technical experts like political scientists, urban planners, poets, and musicians can usher in a new era of generative AI that is tailored, efficient, and truly transformative to their respective fields.<sup>3</sup>

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<sup>2</sup> The US Bureau of Labor Statistics does not have a labor classification for AI Subject Matter Experts, Domain Experts, or AI Ethicists. Data analyst/data scientist was chosen as a proxy due to its similarity in job description and because the Occupational Outlook Handbook classifies occupations based on tasks and skills, not expertise in specific fields. According to the BLS, the average occupation will grow by 3% from 2022 to 2032., but social scientists and related workers will grow by 5%. Employment of management analysts is projected to grow 10 percent, and employment of political scientists is projected to grow 7 percent from 2022 to 2032. / "Data Scientists : Occupational Outlook Handbook." *U.S. Bureau of Labor Statistics*, U.S. Bureau of Labor Statistics, 6 Sept. 2023, [www.bls.gov/ooh/math/data-scientists.htm](http://www.bls.gov/ooh/math/data-scientists.htm).

<sup>3</sup> Ravinutala, R. "The Power of Domain-Specific LLMs in Generative AI for Enterprises." *Forbes*, 5 Oct. 2023, <https://www.forbes.com/sites/forbestechcouncil/2023/07/20/the-power-of-domain-specific-llms-in-generative-ai-for-enterprises/?sh=5159a82c1e50>.

*So, what's the takeaway?* It is important to recognize that AI is going to increase the demand for non-technical subject matter experts in the long run for many industries. This, in turn, will foster job creation and contribute to the sustained success of generative AI.

## Generative AI: Not a Hallucination

Artificial intelligence is not anything new - as a technology, it has been in use since the advent of computers. In 1955, John McCarthy was credited for coining the term.<sup>4</sup> Generative artificial intelligence, on the other hand, AI that can produce new content, became part of our social fabric with the launch of Open AI's ChatGPT on November 30, 2022.<sup>5</sup> By December 5th, ChatGPT had attracted over one million new users, and seven months later, by the summer of 2023, Open AI was valued at \$29 billion.<sup>6</sup> Generative artificial intelligence was an immediate success and within months competing generative AI platforms began to emerge such as Google's Bard and Microsoft's Copilot.

Specialized AI platforms have also emerged to cater to specific consumer and business requirements, exemplified by Open AI's DALL-E 2 for graphic applications, Tome AI and Gamma for presentations, and Midjourney and Play.ht for text-to-speech tasks. Numerous others are currently in the developmental stages. The current generation of AI Large Language Models (LLMs) exhibit remarkable abilities in producing textual content that spans a wide range of

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<sup>4</sup> Mitchell, Molly. "Humans at the Heart of AI." Darden Report Online, University of Virginia, 4 Oct. 2023, news.darden.virginia.edu/2023/09/22/humans-at-the-heart-of-ai/.

<sup>5</sup> Marr, Bernard. "A Short History of Chatgpt: How We Got to Where We Are Today." Forbes, Forbes Magazine, 5 Oct. 2023, www.forbes.com/sites/bernardmarr/2023/05/19/a-short-history-of-chatgpt-how-we-got-to-where-we-are-today/?sh=74031911674f.

<sup>6</sup> Ibid.

topics, however, they often lack the nuance and depth required for specific domains such as law, literature, and history.<sup>7</sup>

Another ongoing challenge currently facing AI is hallucinations. These occur when the model fabricates incorrect information it believes is true.<sup>8</sup> Sometimes it is fact-based, but as AI's knowledge base continues to expand, fact-based errors will persist, despite constant efforts to ensure accuracy.

Frequently, AI struggles to comprehend human emotion accurately and often can misinterpret human intention. An example from the research involves the insurance domain in which an SME would understand the nuance when clients refer to the process of modifying certain terms in their policies as "policy endorsement". However, that exact language may not be universally understood by the generic LLM and as a result, the customer is then left with a negative experience<sup>9</sup>

The lack of human nuance, the hallucinations, and the struggle to discern human emotion represent examples of where a non-technical subject matter or domain expert can come in to help bridge the gap between AI and the intricate details of a particular domain or industry.

## Subject Matter & Domain Experts: Semantics

So what exactly are subject matter experts? Are they any different than domain experts? A non-technical subject matter expert (SME) has rich expertise and specialized knowledge in a particular field, industry, or subject area. such as law, construction, healthcare, or history. SMEs

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<sup>7</sup>Ravinutala, *The Power of Domain-Specific LLMS*.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

are known for their subject mastery and are considered specialists in their respective domains. In the broader context, pundits like Lakhani contend that the march of progress is inevitable. For non-technical subject matter experts to thrive in a digital environment, they need the support of an organization that has made the transition toward a digital mindset.<sup>10</sup>

The literature often uses the terms “Domain Expert” and “Subject Matter Expert” interchangeably, but generally tends to associate domain experts as specialists with deep knowledge and experience in areas related to information technology.<sup>11</sup> In Yingqiang Ge’s research, “*OpenAGI: When LLM Meets Domain Experts*,” the term ‘domain expert’ is more closely aligned with computer science parlance, as Ge explains that a skill is referred to as a “domain expert ‘model’ – a reusable tool, module, network, plugin, or API with a defined function.”<sup>12</sup> Since both the ‘domain expert’ and ‘subject matter expert’ terms are used indistinguishably in the literature, this piece will align with the prevailing convention, referring to them as ‘subject matter experts’.

## The Role of the AI Ethicist: Human Values

Unlike the SME, an AI Ethicist is an expert who specializes in the ethical considerations and implications of artificial intelligence. An ethicist makes sure that technology is being used in a way that respects human values and social well-being. The AI ethicist also oversees that AI is being developed conscientiously. Depending on the organization and its mission, AI ethicists

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<sup>10</sup> Lakhani, Karim. "AI Won't Replace Humans - But Humans With AI Will Replace Humans Without AI." Harvard Business Review, 4 Aug. 2023,

[hbr.org/2023/08/ai-wont-replace-humans-but-humans-with-ai-will-replace-humans-without-ai](https://hbr.org/2023/08/ai-wont-replace-humans-but-humans-with-ai-will-replace-humans-without-ai).

<sup>11</sup> Yin, H. "The Importance of Domain Knowledge." Machine Learning Blog | ML@CMU | Carnegie Mellon University, 24 Aug. 2020, <https://blog.ml.cmu.edu/2020/08/31/1-domain-knowledge/>.

<sup>12</sup> Ge, Yingqiang, et al. "OpenAGI: When LLM Meets Domain Experts." Computer Science: Artificial Intelligence, 10 Apr. 2023. Cornell University - ArXiv, <https://arxiv.org/abs/2304.04370>.

can be responsible for a variety of functions, but some of their most important responsibilities include promoting ethical guidelines and policies, risk assessment, collaborating with stakeholders, and corporate responsibility advisement. A typical task for this type of expert would be to identify potential biases in an LLM and collaborate with a team to mitigate them.

Like Toto sniffing out the truth behind the Wizard's curtain, subject matter experts, domain experts, and ethicists work quietly behind the scenes, ensuring the quality and accuracy of generative AI. These experts highlight the crucial role of often-unseen contributors in achieving impressive results. While their work may not be noticed, their domain knowledge often provides results that have been proven to be quantifiably precise and accurate.<sup>13</sup>

## Automation and AI: Supplant or Support?

Whether the industry is information technology, transportation, or entertainment, non-technical experts bring in-depth knowledge to help address the myriad challenges and regulations of their respective fields. From healthcare to legal, from automotive manufacturing to eco-tourism, the question of what tasks to automate is crucial for the successful integration of AI into various industries. SMEs can play a vital role in answering this question by helping AI to identify opportunities and take actionable measures for generative AI to demonstrate solutions that are aligned with organizational goals and objectives.

AI, however, is not a workforce cure-all.

A haphazard deployment of AI can undervalue the unique skills of human workers and adversely affect morale, ultimately creating conditions that sub-optimize organizational goals. The

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<sup>13</sup> Yin, *The Importance of Domain Knowledge*.

attention should be on automating routine and repetitive tasks, such as directing customer service inquiries on an automated system, therefore allowing humans to leverage their intrinsic strengths such as creativity, decision-making, and experimental thinking.

The coming years will see increased demand for occupations that historically have experienced slow to average growth (relative to other professions) such as physical and life scientists, social scientists, and experienced human resources professionals because organizations will need non-technical experts to ensure that AI is applied thoughtfully and is aligned with human expertise rather than replaced with it.

Unfortunately, however, not every occupation will see new career pathways open as a result of generative AI. According to the U.S. Bureau of Labor Statistics, other than “personal financial advisors”, “interpreters and translators”, and “surgeons, except ophthalmologists”, the top ten jobs that are “considered high risk for automation” until 2029 are also some the largest sectors for employment.<sup>14</sup> These occupations are:

- Fast food and counter workers
- Janitors and cleaners
- Maids and housekeeping cleaners
- Landscaping and groundskeeping workers
- Heavy and tractor-trailer truck drivers
- Industrial truck and tractor operators
- Laborers and freight, stock, material moving<sup>15</sup>

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<sup>14</sup> “Growth Trends for Selected Occupations Considered at Risk from Automation : Monthly Labor Review.” *U.S. Bureau of Labor Statistics*, U.S. Bureau of Labor Statistics, July 2022, [www.bls.gov/opub/mlr/2022/article/growth-trends-for-selected-occupations-considered-at-risk-from-automation.htm](http://www.bls.gov/opub/mlr/2022/article/growth-trends-for-selected-occupations-considered-at-risk-from-automation.htm)

<sup>15</sup> Ibid.



What these ten occupations have in common is that they all involve repetitive “complex perceptual and cognitive tasks” such as extracting information from documents, operating machinery, or inputting data. According to researchers, jobs that include these types of repetitive tasks will be the most vulnerable to substitution or displacement by machines.<sup>16</sup>

Organizations still need and value people who are creative and can connect with others on a personal level. SMEs showcase their value to organizations by virtue of their unique qualities and life experiences. Unlike machines, non-technical experts possess extensive experience in making nuanced judgment calls and deftly navigating uncertain situations. Their reliability extends to providing insightful reflective analysis, setting them apart from machines as indispensable resources.

In recent decades, current AI has emerged as a pivotal technological step forward, transforming how numerous industries work; automated customer service features are a prime example of a previous generation. While previous iterations of AI sought to replace human workers with machines, the prevailing trend in AI implementation revolves around human-AI collaboration, wherein AI functions as a team member, broadening human intelligence. Wang reports that this shift is primarily driven by the imperfections inherent in contemporary AI.<sup>17</sup> According to Wang’s research, limitations in interpretability, common sense, and long-term memory prevent current AI from reaching the theoretical singularity point where Artificial General Intelligence (AGI) surpasses human intelligence.<sup>18</sup>

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<sup>16</sup> Ibid.

<sup>17</sup> Wang, et al., *Knowledge Trap*, pgs. 30-31.

<sup>18</sup> Ibid.

# What Does the Data Say? Possibilities

The U.S. Bureau of Labor Statistics (BLS) does not yet have a labor classification for AI subject matter experts, domain experts, or AI ethicists, so data scientists, management analysts, and political scientists were examined as proxies. Of the three, data scientist most closely aligns with the role of a subject matter expert in a general sense. According to the BLS, the average occupation will grow by 3% in the ten-year period from 2022 to 2032, but the job outlook for data scientists is expected to grow by 35% over that same period of time.<sup>19</sup> The BLS projects that most new job openings will be due to a result of displacement and worker retirements. Being a data scientist is a particularly lucrative career, as according to the BLS, in 2022, the median pay was \$103,500 annually, or \$49.76/hour.<sup>20</sup>

Management analysts are SMEs who focus on understanding business needs and translating them into AI requirements, and policy and ethics experts, are SMEs who help organizations navigate the ethical and policy implications of AI use (these experts are classified by the BLS as political scientists). According to the BLS, in 2022, the median wage for a management analyst was \$95,290 and job opportunities should be plentiful as it is expected to grow by 10% annually until 2032.<sup>21</sup> Political scientists will also see their occupation grow faster than the average at 7% till 2032 and a median salary in 2022 of \$128,020.<sup>22</sup>

In addition to the U.S. Bureau of Labor Statistics, the November 2023 Forbes article, “*Elon Musk Says AI Will Take Jobs Away. Here’s Why That Won’t Happen*”, provides an alternative and

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<sup>19</sup> “Data Scientists : Occupational Outlook Handbook.”

<sup>20</sup> Ibid.

<sup>21</sup> “Management Analysts : Occupational Outlook Handbook.” *U.S. Bureau of Labor Statistics*, U.S. Bureau of Labor Statistics, 6 Sept. 2023, [www.bls.gov/ooh/business-and-financial/management-analysts.htm](http://www.bls.gov/ooh/business-and-financial/management-analysts.htm).

<sup>22</sup> “Political Scientists : Occupational Outlook Handbook.” *U.S. Bureau of Labor Statistics*, U.S. Bureau of Labor Statistics, 6 Sept. 2023, [www.bls.gov/ooh/life-physical-and-social-science/political-scientists.htm](http://www.bls.gov/ooh/life-physical-and-social-science/political-scientists.htm).

fresher perspective on the labor market. Rachel Wells reports that “The job market appetite is increasing for roles that require leadership skills and strategic problem-solving.”<sup>23</sup> Wells further illustrates the evolving landscape of job demands driven by technological innovation. Emerging roles include positions such as people managers, program managers, AI research scientists, prompt engineers, deep learning engineers, AI chatbot developers, AI ethics and bias analysts, directors of responsible AI, and AI ethics program managers.<sup>24</sup>

## Challenges for Generalized AI: Credibility

Despite the advancements in AI content generation, challenges persist, especially in terms of how AI publishes and circulates content online.<sup>25</sup> SEO alignment, or search engine optimization alignment, is the process of combining an organization’s identity with its online efforts.

AI-generated content may not align seamlessly with search engine guidelines, raising concerns about its credibility and potential spammy nature. Google's stance on AI-generated content underscores the need for a cautious approach, emphasizing the importance of SMEs in ensuring content quality, relevance, and adherence to SEO standards.<sup>26</sup>

In their article, "*Why AI Is Never Going To Replace Subject Matter Experts and How To Choose The Right SMEs*", Raymond explains how the current dynamics of online content publication, circulation, and the assessment of credibility necessitate a collaborative effort between AI and

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<sup>23</sup> Wells, Rachel. "Elon Musk Says AI Will Take Jobs Away. Here's Why That Won't Happen." Forbes, Forbes Magazine, 7 Nov. 2023, [www.forbes.com/sites/rachelwells/2023/11/06/inside-elon-musks-future-of-work-there-is-none-thanks-to-ai/?sh=397811b351fb](https://www.forbes.com/sites/rachelwells/2023/11/06/inside-elon-musks-future-of-work-there-is-none-thanks-to-ai/?sh=397811b351fb).

<sup>24</sup> Ibid.

<sup>25</sup> Raymond, Kelsey. "Why AI Is Never Going To Replace Subject Matter Experts and How To Choose The Right SMEs." Martech Zone, 3 Feb. 2023, [martech.zone/ai-vs-sme-generated-content/](https://martech.zone/ai-vs-sme-generated-content/).

<sup>26</sup> Ibid

SEO.<sup>27</sup> However, as of now, they do not seamlessly integrate. Raymond reports that Google executive John Mueller has explicitly indicated that AI-generated content contradicts the webmaster guidelines, and Google views it as spam.<sup>28</sup>

In the Forbes article “*The Power of Domain-Specific LLMs in Generative AI for Enterprises*”, Ravinutala explains how the current generation of generative AI models demonstrate impressive text generation capabilities across various subjects, however, they often lack the necessary depth and nuance required for specific domains, making them more susceptible to hallucinations.<sup>29</sup> In “*How AI, ML, and SMEs Shape Document Intelligence*,” organizations discuss how trust in AI-generated content is still a “tricky point” and that they are adapting by following a “human-in-the-loop approach” where non-technical SMEs validate information.<sup>30</sup>

Ravinutala provides an example from the insurance sector in which clients frequently use the term “policy endorsement” to describe the process of adjusting certain terms in their policies.<sup>31</sup> Despite that, a generic language model may not universally grasp this specific terminology. On the other hand, Ravinutala explains that LLMs have specialized knowledge of terminology specific to particular use cases, ensuring an accurate understanding of industry-specific concepts.<sup>32</sup>

Contrary to Google's position on machine-generated content, Raymond asserts that the company is actively engaged in efforts to discern AI-generated content.<sup>33</sup> Ravinutala delineates the specialized proficiency of domain-specific language models in adapting terminology to particular

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<sup>27</sup> Ibid.

<sup>28</sup> Ibid.

<sup>29</sup> Ravinutala, *The Power of Domain-Specific LLMs*.

<sup>30</sup> “*How AI, ML, and SMEs Shape Document Intelligence: Legal Blog*.” Thomson Reuters Law Blog, 20 Sep. 2023, <https://legal.thomsonreuters.com/blog/ai-spotlight-on-document-intelligence/>.

<sup>31</sup> Ravinutala, *The Power of Domain-Specific LLMs*.

<sup>32</sup> Ibid.

<sup>33</sup> Raymond, “*Why AI Is Never Going To Replace Subject Matter Experts*”.

use cases, ensuring a meticulous grasp of industry-specific concepts.<sup>34</sup> This methodology serves as an effective approach for AI in mitigating hallucinations.

Furthermore, researchers argue that there simply are natural restrictions on the output achievable by a machine.<sup>35</sup> Take content that entails ‘thought leadership’, content authored by genuine experts in the field, imparting unique insights derived from personal experiences and knowledge. While a tool like ChatGPT has the potential to contribute to or accentuate subject matter expertise, it is impossible for a machine to replicate the authentic human experience.

Researchers are undaunted by this challenge, as various undertakings are underway to replicate the human experience. For example, in “*Creating Synthetic Experts with Generative Artificial Intelligence*”, Ringel has found that synthetic experts offer a scalable solution for the intricate task of comprehending extensive data repositories.<sup>36</sup> From a societal perspective, the integration of synthetic experts has the potential to greatly streamline public sector operations, such as assisting in the processing and analysis of public opinions on policy matters.<sup>37</sup>

A shared characteristic among these challenges and proposed solutions is the potential benefit obtained through the engagement of non-technical subject matter experts.

## SMEs and AI as Partners: A Harmonious Collaboration

Producing effective content necessitates a seamless partnership between non-technical SMEs and generative AI. SMEs, chosen for their industry knowledge and capacity to offer distinctive

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<sup>34</sup> Ravinutala, *The Power of Domain-Specific LLMs*.

<sup>35</sup> Raymond, “*Why AI Is Never Going To Replace Subject Matter Experts*”.

<sup>36</sup> Ringel, Daniel. “*Creating Synthetic Experts with Generative Artificial Intelligence*.” Kenan Institute of Private Enterprise Research Paper No. 4542949, 5 Dec. 2023, SSRN: <https://ssrn.com/abstract=4542949> or <http://dx.doi.org/10.2139/ssrn.4542949>.

<sup>37</sup> Ibid.

insights, play a central role as the architects of content creation. Simultaneously, AI serves as a valuable assistant, augmenting idea generation and supporting the creative process. The synergy between human intuition and AI capabilities yields content that is both well-informed and innovative, catering to the evolving needs of dynamic industries. This alliance between AI and the non-technical SME is further sustained as feedback from the SME is used to augment the model and make it more robust.<sup>38</sup>

**The Social Studies Domain Example.** *So, what does this collaboration look like?* Consider the symbiotic relationship between a non-technical subject matter expert in history and AI, working together to assess the excellence of historical research, analysis, and content creation. In this collaborative endeavor, AI contributes to data collection and analysis, aiding the history SME in identifying patterns, trends, and correlations within extensive historical datasets. The history SME guides the AI in selecting relevant sources, ensuring accurate data interpretation, and providing essential context to historical events. Employing AI for automated fact-checking accelerates the process, allowing the history SME to focus on intricate analysis, validation, and correction of historical information.

Furthermore, AI assists in content creation by drafting initial content, summaries, or analyses based on historical data, enabling the history SME to refine and enhance perspectives. Language models within AI aid in translating historical documents written in various languages, expanding the range of accessible sources for the history SME. Automated citation and reference checking by AI streamline the process, permitting the history SME to review and maintain academic rigor in historical research.

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<sup>38</sup> Chen, V., Bhatt, U., Heidari, H., Weller, A., & Talwalkar, A. "Perspectives on Incorporating Expert Feedback Into Model Updates." *Patterns*, vol. 4, no. 7, 2023, <https://doi.org/10.1016/j.patter.2023.100780>.

In the realm of education, the non-technical SME ensures that educational content aligns with accepted historical narratives, making it accurate and engaging. Ethical considerations in handling sensitive historical topics are guided by the non-technical SME, providing insights into potential biases, cultural sensitivities, and ethical dilemmas.

In summary, the collaborative process between a historical non-technical SME and AI leverages the strengths of both, enhancing the quality, accuracy, and depth of historical research and analysis. The historian was selected as an example because many of the professional skills and responsibilities associated with this occupation such as researching, writing, and fact-checking are shared across industries. Furthermore, according to the BLS, historians and social scientists and related workers are occupations in demand through 2032.<sup>39</sup>

Across a wide range of industries, the non-technical SME's expertise is pivotal in guiding the AI, interpreting results, and ensuring the final output meets the standards of historical scholarship.

Artificial Intelligence, especially models like Bard and Copilot, has emerged as a valuable asset for content marketers, assisting in tasks like brainstorming, email drafting, and headline generation. Nevertheless, the true advantages of AI in content creation are most evident when it collaborates with human expertise. Non-technical SMEs, regardless of domain or industry, contribute personal experiences, distinctive insights, and industry-specific knowledge, which are elements that AI alone cannot duplicate. The synergy between AI and non-technical SMEs is imperative for crafting a well-rounded and impactful content strategy that resonates with target audiences.

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<sup>39</sup> “Historians : Occupational Outlook Handbook.” *U.S. Bureau of Labor Statistics*, U.S. Bureau of Labor Statistics, 6 Sept. 2023, [www.bls.gov/ooh/life-physical-and-social-science/historians.htm#tab-6](http://www.bls.gov/ooh/life-physical-and-social-science/historians.htm#tab-6).

# Job Transformation and Job Creation: Are the Robots Going to Take Our Jobs?

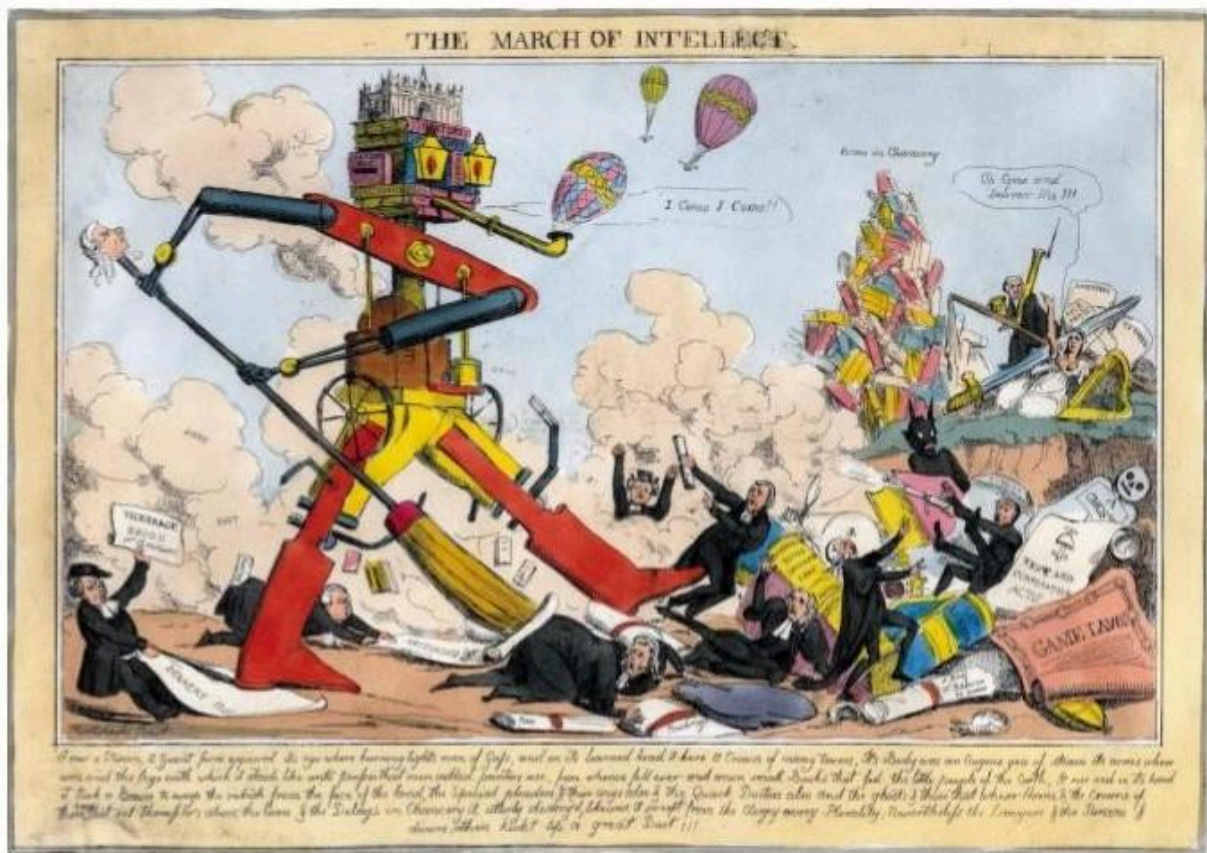


Image: Robert Seymour, "The March of Intellect (1828)."

In "Elon Musk Says AI Will Take Jobs Away. Here's Why That Won't Happen", Rachel Wells reports that in November 2023, noted tycoon Elon Musk conveyed to Rishi Sunak, the Prime Minister of Great Britain that in regards to generative AI, "I think we are seeing the most disruptive force in history; we will have something that for the first time is smarter than the smartest human...There will come a point where no job is needed."<sup>40</sup> While Musk's prediction

<sup>40</sup> Wells, "Elon Musk Says AI Will Take Jobs Away."



about workforce transformation may eventually come to pass, according to the U.S. federal government, it won't happen before 2029.<sup>41</sup> The BLS provides scant backing for the notion of a widespread increase in job losses or a fundamental departure from trends predating the AI revolution.<sup>42</sup>

Even so, as AI continues to permeate the workforce, some occupations will be negatively affected by this new technology, particularly those jobs that involve repetitive or procedural tasks and include jobs such as fast food and counter workers, janitors and cleaners, maids and housekeeping cleaners, and heavy and tractor-trailer truck drivers.<sup>43</sup> In particular, repetitive, systematic jobs that have a higher degree of associated risks like those in transportation and manufacturing will be more susceptible to job displacement by AI.

While the Bureau of Labor Statistics (BLS) does recognize the looming possibility of extensive job displacement in the near future, it's crucial to highlight that the report titled '*Growth Trends for Selected Occupations Considered at Risk from Automation*' is as of July 2022, virtually a generation ago in the rapidly evolving timeline of AI.<sup>44</sup> Nevertheless, this outcome will stem from individuals transitioning between jobs rather than facing job losses, a shift driven by the adoption of new technologies.

In the meantime, companies are currently allocating resources to enhancing and retraining programs - essentially upskilling their existing employees because they recognize the crucial role of human expertise in adapting to a landscape augmented by AI. Cusak describes how in this new way of working, having one technical expertise alone isn't enough for a professional to be

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<sup>41</sup> "Growth Trends for Selected Occupations Considered at Risk from Automation"

<sup>42</sup> Ibid.

<sup>43</sup> Ibid.

<sup>44</sup> Ibid.

truly effective in organizations - the new dynamic requires multidisciplinary skillsets in their subject matter knowledge. On top of technical expertise, professionals in this new type of environment need to understand human behavior as well as organizational processes to meet the ever-changing challenges.<sup>45</sup>

**The Legal Domain Example.** In a highly specialized field such as law, according to Haddad, the use of comprehensive and current datasets, including statutes, regulations, and case law, is imperative for training machine-learning algorithms.<sup>46</sup> Additionally, the inclusion of lawyer-generated data, such as contracts, memoranda, and prior work product, is crucial for achieving reliable outcomes with AI tools. In "*Generative AI and the Small Law Firm: The Value of Legal Domain Expertise*," Haddad describes how artificial intelligence does not replace the expertise of professionals such as lawyers; rather, it serves as a powerful platform for these non-technical subject matter experts to enhance and extend their domain knowledge. Haddad reports how this augmentation allows legal professionals to achieve higher levels of productivity and provide superior service to their clients and firms.

Haddad argues that the idea that generative AI will diminish the contributions of human lawyers is baseless.<sup>47</sup> On the contrary, generative AI heavily depends on legal domain expertise and skills, which it lacks but are inherent in human lawyers. Instead of displacing legal professionals, AI complements their capabilities, highlighting the collaborative synergy between technology and human expertise in the legal domain.<sup>48</sup>

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<sup>45</sup> Cusak, A. "Case Study: *The Impact of Emerging Technologies on Cybersecurity Education and Workforces*." *Journal of Cybersecurity Education Research and Practice*, vol. 2023, no. 1, 2023, pp. 1–12. <https://doi.org/10.32727/8.2023.11>. pg.3.

<sup>46</sup> Haddad, M. "*Generative AI and the Small Law Firm: The Value of Legal Domain Expertise*." Thomson Reuters Institute, 28 Nov. 2023, <https://www.thomsonreuters.com/en-us/posts/legal/generative-ai-small-law-domain-expertise/>.

<sup>47</sup> Ibid.

<sup>48</sup> Ibid.

The AI expert Ravinutala reminds us how the realm of generative AI has experienced significant strides in recent months, exemplified by groundbreaking models such as GPT-4.<sup>49</sup> Nevertheless, Ravinutala argues that the key to authentic success in generative AI for enterprises lies in the cultivation of domain-specific LLMs, which is when organizations create AI solutions specifically customized to their industries' unique needs. Findings from a recent survey on LLMs indicate that nearly 40% of surveyed enterprises are contemplating the construction of their own enterprise-specific language models, underlining the growing importance of tailored solutions and non-traditional SMEs that will work with them.<sup>50</sup>

Thomson Reuters illustrates how the synergy of non-technical SMEs, AI, and business needs come together in an article by Eric Revell.<sup>51</sup> In December 2023, Thomson Reuters released a generative AI platform specifically tailored to the needs of both non-technical subject matter experts and businesses. Revell reports that Shawn Malhotra, Head of Engineering at Thomson Reuters, assessed the landscape as "When we look across our customer bases in legal professionals, tax professionals, corporations or Reuters News, we see a huge amount of opportunity to apply generative AI."<sup>52</sup> According to Revell, to help increase the pool of workers who can help find groundbreaking AI-driven solutions using the platform, Thomson Reuters' generative AI platform plans to facilitate the task for those who are not computer programmers or developers to create those AI building blocks.<sup>53</sup> Revell highlights that, in an effort to expand the community of individuals capable of contributing to innovative AI-driven solutions through

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<sup>49</sup> Ravinutala, *The Power of Domain-Specific LLMs*.

<sup>50</sup> Ibid.

<sup>51</sup> Revell, E. "'AI Skills Factory' Created by Thomson Reuters for Non-Engineers to Build Expertise." Fox Business, 21 Dec. 2023, <https://www.foxbusiness.com/technology/ai-skills-factory-created-by-thomson-reuters-non-engineers-build-expertise>.

<sup>52</sup> Ibid.

<sup>53</sup> Ibid.

the platform, Thomson Reuters' generative AI platform is designed to simplify the process for non-software engineers or developers, enabling them to effortlessly create “essential AI building blocks.”<sup>54</sup>

## Conclusion

In conclusion, this article has explored the symbiotic relationship between non-technical subject matter experts (SMEs) and artificial intelligence (AI), emphasizing their collaborative role in shaping the trajectory of generative AI. As AI, particularly large language models (LLMs) like ChatGPT Copilot, and Bard, becomes an integral part of various industries, the demand for non-technical experts has surged, debunking fears of widespread job loss and instead fostering new career opportunities for a wide range of occupations.

The analogy to Toto peeling back the curtain in "The Wizard of Oz" serves as a metaphor for the transparency brought about by non-technical SMEs in the realm of AI. Unlike the Wizard, these experts are not charlatans; they are indispensable team members who contribute domain knowledge, ethical considerations, and nuanced perspectives to enhance the precision and quality of AI-generated content.

Concerns about AI's impact on the job market were addressed by emphasizing the pivotal role of non-technical experts in navigating the transformative landscape. It argues that AI is not a threat to jobs but rather a tool that, when harnessed collaboratively, enhances human expertise. The article provided a specific example, such as the collaboration between historical SMEs and AI in research and content creation, highlighting the synergies that lead to well-informed and

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<sup>54</sup> Ibid.

innovative outcomes. The historical and legal SMEs were selected as case studies because the roles have transferable skills, such as fact-checking and content generation, that are relatable across a wide spectrum of vocations. The partnership between AI and SMEs has been portrayed as a harmonious collaboration, where each entity contributes unique strengths to achieve content that is both impactful and well-rounded.

This article strongly asserts that the synergy between non-technical subject matter experts and artificial intelligence stands as a fundamental pillar for attaining authentic success, fostering innovation, and ensuring sustained growth in this era of generative AI.

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