HUMAN-ARTIFICIAL INTELLIGENCE COLLABORATION FATIGUE: CAUSES, CONSEQUENCES, AND MITIGATION STRATEGIES

İNSAN-YAPAY ZEKÂ İŞBİRLİĞİ YORGUNLUĞU: NEDENLERİ, ETKİLERİ VE AZALTMA STRATEJİLERİ

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ABSTRACT

This study aims to examine the multidimensional fatigue experienced by employees in organizational settings as a result of human-artificial intelligence (AI) collaboration. While traditional technostress research focuses primarily on the cognitive or emotional demands created by digital technologies, the integration of AI as an active and autonomous component in decision-making processes introduces new forms of fatigue. This paper provides a comprehensive conceptual framework by synthesizing fragmented approaches in the literature and exploring human-AI collaboration fatigue across physical, cognitive, motivational, and social dimensions. The findings indicate that collaboration with AI increases cognitive load particularly in tasks that require continuous verification and contextual evaluation; diminishes autonomy and heightens perceptions of professional threat, leading to motivational exhaustion; and reduces interpersonal interactions, contributing to workplace loneliness and emotional strain. Additionally, the study highlights the critical role of human-centered AI design, explainability, ergonomic arrangements, and organizational support mechanisms in mitigating such fatigue. By emphasizing the need to evaluate human-AI interactions not only through productivity and performance lenses but also through employee well-being perspectives, this research provides an important contribution to the field. Finally, the study proposes future research directions and strategic guidelines for developing more sustainable and human-aligned AI-collaboration systems.

Keywords: Artificial intelligence, Collaboration fatigue, Technostress, Cognitive load, Organizational behavior.

ÖZET

Bu çalışma, insan-yapay zekâ (YZ) işbirliğinin örgütsel bağlamda çalışanlarda ortaya çıkardığı çok boyutlu yorgunluk süreçlerini incelemeyi amaçlamaktadır. Geleneksel technostress literatürü çoğunlukla dijital teknolojilerin yarattığı bilişsel veya duygusal yükleri ele alırken, YZ'nin karar alma süreçlerine aktif ve özerk bir bileşen olarak entegre olması yeni türden yorgunluk biçimlerini ortaya çıkarmaktadır. Bu çalışma, insan-YZ işbirliği yorgunluğunu fiziksel, bilişsel, motivasyonel ve sosyal boyutlarıyla kavramsal bir çerçevede ele alarak literatürdeki parçalı yaklaşımları bütünleştirmektedir. Çalışmada, işbirliğinin özellikle sürekli doğrulama ve değerlendirme gerektiren görevlerde bilişsel yükü artırdığı; özerklik kaybı ve mesleki tehdit algısının motivasyonel tükenmeye yol açtığı; sosyal etkileşimlerin azalmasının ise yalnızlık ve duygusal yıpranmayı tetiklediği ortaya konulmaktadır. Ayrıca, insan merkezli YZ tasarımı, açıklanabilirlik, ergonomi ve örgütsel destek mekanizmaları gibi müdahalelerin yorgunluğu azaltmada kritik rol oynadığı vurgulanmaktadır. Araştırma, insan-YZ etkileşimlerinin yalnızca verimlilik ve performans bağlamında değil, çalışan refahı perspektifinden de değerlendirilmesi gerektiğini ortaya

koyarak literatüre önemli bir katkı sağlamaktadır. Son olarak çalışma, gelecekte yapılacak ampirik araştırmalar için yeni araştırma alanları önermekte ve insan-YZ işbirliğinin sürdürülebilir biçimde tasarlanmasına yönelik stratejik öneriler sunmaktadır.

Anahtar Kelimeler: Yapay zekâ, İşbirliği yorgunluğu, Technostress, Bilişsel yük, Örgütsel davranış.

1. INTRODUCTION

The concept of Human-Artificial Intelligence Collaboration Fatigue has emerged as a new organizational concern as AI systems increasingly shift from providing mere instrumental assistance to functioning as active "team members" interacting with humans in the workplace. Unlike traditional forms of digital fatigue, this type of exhaustion arises from employees' continuous need to evaluate, verify, and revise AI-generated recommendations, which requires substantial cognitive and emotional resources. Although human-AI collaboration offers potential gains in efficiency and creativity, a systematic examination reveals that such interactions may also lead to adverse psychological consequences.

In the contemporary technological landscape, leadership, organizational structures, and workforce management are rapidly diverging from traditional paradigms, accompanied by a significant expansion of literature on concepts such as technostress. Prior research has documented the effects of technology-induced stress on job performance, motivation, burnout, and turnover intentions (Rademaker et al., 2025). However, recent empirical findings also demonstrate that AI-supported collaboration can generate negative outcomes such as workplace loneliness, emotional exhaustion, and counterproductive work behaviors (Bai et al., 2024; Meng et al., 2025). Furthermore, AI-related technostress has been shown to influence employees' quality of life through emotional mechanisms, including decreased positive affect and increased negative affect (Lițan, 2025). Other studies suggest that employees with high AI awareness may experience emotional exhaustion due to job insecurity concerns and reduced work-family interaction (Xu et al., 2023; Zheng & Zhang, 2025).

While existing research addresses the psychosocial consequences of "collaboration with AI," it predominantly focuses on isolated variables; thus, a comprehensive and systematic framework for Human-AI Collaboration Fatigue remains underdeveloped. For example, even though leadership influences have been systematically examined within the technostress literature (Rademaker et al., 2025), these effects have not been analyzed specifically in relation to AI-driven fatigue mechanisms. Moreover, the potential for AI-human collaboration to generate not only cognitive strain but also social resource depletion (loneliness), emotional erosion, and behavioral deterioration (e.g., counterproductive behaviors) has yet to be conceptually integrated in a robust manner (Tang et al., 2023; Teng et al., 2023).

The primary aim of this study is to present a comprehensive literature review that conceptualizes fatigue arising from human-AI collaboration. By systematically synthesizing existing research findings, this study seeks to consolidate the cognitive, emotional, and social dimensions of such fatigue under a unified theoretical model and clarify its organizational consequences, particularly loneliness, emotional exhaustion, and counterproductive behaviors. Additionally, this paper aims to identify gaps in the current literature and offer strategic recommendations regarding leadership practices, job design principles, and institutional arrangements that may help mitigate the burden created by human-AI collaboration.

The originality of this theoretical study lies in its focus on the psychological risks and fatigue associated with AI-human interaction, rather than its performance-enhancing benefits. In doing so, the study offers a timely and holistic contribution to the management and organization literature by addressing the "dark side" of AI use. Moreover, it deepens the theoretical discourse and provides a conceptual foundation and direction for future quantitative and qualitative research efforts.

2. CONCEPTUAL FRAMEWORK, FUNDAMENTAL DEFINITIONS, AND HUMAN-AI COLLABORATION

Artificial intelligence (AI) is broadly defined as a collection of systems capable of performing specific tasks by mimicking the cognitive functions of the human mind. In this sense, AI technologies model human-specific mental processes, such as learning, reasoning, problem-solving, and generating context-appropriate responses, through algorithmic structures. One of the seminal early studies in the field, Nilsson (1971), described AI as machines that can interact with the external environment, learn from experience to make decisions, and autonomously execute complex tasks. Contemporary approaches characterize AI as software-based systems capable of processing human-like cognitive functions, extracting patterns from online data, and producing adaptive decisions across various contexts (Jackson, 2019; Marr, 2021). With these capabilities, AI has moved beyond simple automation tools and has evolved into a technological structure that supports or, in some cases, substitutes, human performance in tasks requiring cognitive competence.

Human-AI collaboration refers to the process through which employees directly interact with AI systems, share tasks, evaluate AI-generated recommendations in decision-making processes, and develop joint working dynamics. In this regard, "collaboration" does not merely denote the use of automation; rather, it signifies a coordinated and mutually interdependent mode of working between humans and AI (Meng et al., 2025). However, such collaboration does not always yield positive outcomes; on the contrary, it may lead some employees to experience cognitive and emotional depletion, social isolation, and various negative organizational behaviors (Meng et al., 2025; Bai et al., 2024).

Human-AI collaboration fatigue can be understood as a state of cognitive, emotional, and social exhaustion or strain that employees experience due to the continuous demands of working collaboratively with AI. This concept extends beyond traditional "technostress," emerging particularly in scenarios where AI is perceived not merely as a tool but as a "coworker." In the literature, this type of fatigue has been associated with outcomes such as loneliness, emotional exhaustion, and counterproductive work behavior (CWB) (Meng et al., 2025).

Moreover, employees' AI awareness may constitute a significant component of this fatigue process. High levels of AI awareness may heighten perceptions of job insecurity and contribute to work-family conflict, both of which have been linked to emotional exhaustion (Zheng & Zhang, 2025). Within the framework of Conservation of Resources (COR) theory, this process suggests that perceived resource loss naturally generates stress and strain among employees (Jia et al., 2025).

In the social context, collaboration with AI may reduce traditional human-to-human workplace interactions. Theoretically, this increases both emotional and social (communication-related) risks associated with workplace loneliness (Kreye et al., 2025). Loneliness may, in turn, lead to emotional resource depletion and ultimately impair performance. Taken together, human-AI collaboration, AI-related fatigue, COR theory, AI

awareness, and workplace loneliness, these concepts collectively demonstrate that human-AI interaction encompasses both opportunities and risks. Systematically understanding and defining these risks is critical for employee well-being, organizational effectiveness, and technology design.

3. TYPES OF FATIGUE IN HUMAN-ARTIFICIAL INTELLIGENCE COLLABORATION AND CONTRIBUTING FACTORS

Human-artificial intelligence collaboration has the capacity to accelerate work processes and enhance decision quality; however, it also introduces a multidimensional interaction environment that may expose employees to various forms of fatigue. The physical, cognitive, and motivational dimensions of fatigue involve mutually reinforcing dynamics, making them critical for understanding the psychosocial outcomes of human-AI interaction. Based on the literature, these three core fatigue types are explained below.

Physical fatigue refers to physiological issues such as eye strain, neck and shoulder tension, and musculoskeletal complaints that arise from prolonged and repetitive interactions with AI interfaces. In tasks that rely heavily on screens, the continuous monitoring of AI-supported systems, attention-intensive tracking activities, and inadequate ergonomic arrangements increase physical strain. Research shows that increasing screen exposure intensifies symptoms of "computer vision syndrome" (Coles-Brennan et al., 2019; Yao et al., 2023). Similarly, AI-based monitoring systems used in industrial production may lengthen periods of static posture and increase musculoskeletal strain (You et al., 2025). These findings indicate that physical fatigue is associated not only with ergonomics but also with task design and user-interface interaction.

Cognitive fatigue in the context of human-AI collaboration refers to mental exhaustion resulting from decision-making processes, attention management, and tasks requiring continuous cognitive effort. The constant evaluation of AI-generated recommendations, interpretation of uncertainties, and contextual adaptation of outputs rapidly deplete employees' cognitive resources (Fügener et al., 2022). In such interactions, employees do more than simply accept or reject a recommendation; they must also judge the model's limitations, potential biases, and reliability. This additional evaluation cost increases decision fatigue and susceptibility to errors (Westphal et al., 2023). Moreover, the lack of transparency in algorithmic systems and the unpredictability of their outputs create fluctuations in user trust and further elevate cognitive load. This effect becomes more pronounced under time pressure or in situations with high error costs (Hopko et al., 2021; Fahnenstich et al., 2024; Kalatzis et al., 2025).

Motivational fatigue refers to the loss of psychological motivation experienced by employees who work continuously in collaboration with AI. When AI takes on a dominant role in work processes, employees may experience negative emotional reactions such as perceived threats to competence, loss of control, and reduced professional value. Particularly, when employees experience algorithmic decisions in a merely "approving" role, their sense of autonomy declines, leading to motivational exhaustion (Wu et al., 2025). Moreover, intensive interaction with AI may reduce social interactions, resulting in decreased organizational commitment and diminished perceptions of meaningful work. Studies indicate that AI collaboration can weaken employees' sense of professional belonging and lead to motivational decline (Mirbabaie et al., 2021; Kong et al., 2021; Bai et al., 2024). Motivational fatigue is often intertwined with cognitive and emotional processes. As employees perceive AI as threatening, controlling, or excessively dominant, the tendency toward motivational exhaustion increases.

These three types of fatigue demonstrate that human-AI collaboration is not merely a technical process but one that involves psychological and organizational dimensions. Physical strain, cognitive load, and motivational exhaustion reinforce each other and have significant impacts on employee well-being, work quality, and organizational performance. Therefore, evaluating these dynamics within a holistic framework is critically important for ensuring that human-AI collaboration is designed in a sustainable and healthy manner.

It is well established that human-AI partnerships do not always produce superior outcomes compared to processes handled solely by humans or solely by AI. Performance declines are frequently observed, especially in decision-making tasks. These losses are often associated with employees placing either excessive or insufficient trust in AI systems, increased cognitive difficulty of tasks, or decreasing user engagement (Hopko et al., 2021; Vaccaro et al., 2024). Furthermore, the resulting fatigue can weaken the quality of human-AI interaction and reduce trust, adaptability, and situational awareness. This issue is especially critical in environments with low tolerance for error, such as safety-critical operations, emergency response, or healthcare services, where it may lead to severe mistakes and increased safety risks (Chhetri et al., 2024; Jeon et al., 2024).

4. STRATEGIES FOR REDUCING HUMAN-ARTIFICIAL INTELLIGENCE COLLABORATION FATIGUE

The increasing centrality of human-artificial intelligence interaction in work processes creates new forms of pressure on employees' cognitive, emotional, and motivational resources, which makes it essential for organizations to develop strategies that render human-AI collaboration more sustainable. The literature indicates that fatigue arising from human-AI collaboration can be managed not only through technology design, but also through trust calibration, training practices, job design, ergonomics, organizational support, and continuous monitoring mechanisms (Okamura and Yamada, 2020; Arslan et al., 2021; Hilmi et al., 2024; Meng et al., 2025). The strategies developed within this scope aim to strengthen both employee well-being and joint human-AI performance. In particular, principles such as transparency, explainability, workload regulation, adaptive automation, and user-centered design play a critical role in reducing fatigue (Vössing et al., 2022; Li, 2025; Urrea, 2025). Therefore, adopting a holistic approach to human-AI collaboration environments and implementing human-centered interventions in a systematic manner have become fundamental requirements for managing fatigue risk. The strategies proposed in the literature to mitigate human-artificial intelligence collaboration fatigue are presented in the table below.

Table 1. Strategies for Reducing Human-Artificial Intelligence Collaboration Fatigue

Strategy	Description	Studies
Dynamic Task Allocation	Real-time adjustment of tasks between humans and AI/robots to minimize physical fatigue	(Messeri et al., 2022; Chand and Lu, 2023; You et al., 2025; Yao et al., 2023)
Fatigue-Aware Scheduling	Personalized scheduling that considers individual fatigue and recovery needs	(Chand and Lu, 2023; You et al., 2025; Urrea, 2025; Yao et al., 2023)
Human Digital Twin Modeling	Use of digital models to assess and predict human fatigue for adaptive task planning	(You et al., 2025)
Sub-Second Fatigue-Aware Allocation	Rapid, real-time task allocation based on continuous fatigue monitoring	(Urrea, 2025)
Adaptive Robotic Assistance	Robots adjusting their behavior based on human fatigue cues and taking over demanding tasks when necessary	(Peternel et al., 2017; Roveda et al., 2020)
Communication and Feedback Channels	Proactive AI communication and feedback to build trust, awareness, and reduce cognitive fatigue	(Zhang et al., 2023; Arslan et al., 2021; Meng et al., 2025)
Training and Organizational Support	Training programs and supportive environments to reduce anxiety and emotional fatigue	(Arslan et al., 2021; Meng et al., 2025)
Flexible Autonomy Frameworks	Switching between automated, augmented, and collaborative modes to balance workload and alleviate fatigue	(Chhetri et al., 2024; Steyvers and Mayer, 2025; Parks and Allison, 2023)
Early Detection of Human Intentions	Using sensors and AI to detect human states and adjust collaboration to prevent fatigue	(Lin and Lukodono, 2021)
Leader Emotional Support	Managerial support to alleviate emotional fatigue and maintain motivation	(Meng et al., 2025)

An examination of the table shows that strategies for reducing human-artificial intelligence collaboration fatigue have a multidimensional structure. These strategies include not only technically oriented approaches, such as dynamic task allocation, planning based on personal fatigue awareness, and human digital twin modeling, but also more human-centered and organizational components, such as communication, feedback, training, and leadership support. Technological solutions, particularly real-time fatigue monitoring, adaptive robotic assistance, and flexible autonomy frameworks, aim to reduce physical and cognitive load, whereas training programs and emotional support initiatives contribute to strengthening employees' psychological resilience. This holistic perspective highlights the importance of addressing multidimensional interventions simultaneously to ensure that human-AI interaction is sustained and conducted efficiently.

5. CONCLUSION AND DISCUSSION

This study demonstrates that the growing intensity of human-artificial intelligence (AI) collaboration in work environments can generate fatigue at physical, cognitive, and motivational levels, and it presents a conceptual framework that addresses this phenomenon in a comprehensive manner. In line with the research questions, the evaluation indicates that human-AI interactions create new forms of cognitive load, risks of social isolation, and motivational declines within collaboration-based decision-making processes, extending beyond the traditional technostress framework. In this regard, the study shows that human-AI collaboration fatigue yields critical implications not only in the context of performance and productivity but also within the fields of organizational behavior and employee well-being. By revisiting long-emphasized dynamics of human-AI alignment and trust (McGrath et al., 2025) through the lens of fatigue, the study offers a novel contribution to the literature.

The findings suggest that cognitive fatigue in human-AI collaboration is particularly evident in decision support systems and is associated with users' continuous need for evaluation, verification, and contextual adaptation. This result aligns with the findings of Hao and colleagues (2024), indicating that the cognitive load in human-AI hybrid decision structures is higher than expected for employees. Similarly, the motivational fatigue findings support previous research suggesting that AI can threaten employee autonomy and weaken professional identity (Corvite et al., 2023). However, this study also highlights the relatively understudied dimension of "social fatigue" and demonstrates that human-AI collaboration can trigger loneliness and emotional exhaustion to the extent that it reduces human-to-human interaction. In this respect, the study draws attention to social dynamics, shifting the literature toward a broader theoretical framework compared to earlier research that focused more heavily on technical and cognitive outcomes.

The practical implications of the study show that reducing human-AI collaboration fatigue requires not only technical design improvements but also work design, organizational support, leadership approaches, and the preservation of employee autonomy. Features such as explainable AI design, trust calibration mechanisms, load-balancing processes, and human-centered ergonomic practices are strategically important for organizations. Moreover, considering the potential of AI use to weaken social relationships, organizations need to integrate social design components that support human-to-human interaction into institutional structures. In this sense, the study presents findings that are consistent with the literature emphasizing the necessity of a "sociotechnical" approach in technology integration (Arslan et al., 2021; Kolbjørnsrud, 2023; Kolomaznik et al., 2024).

Among the limitations of the study, the foremost is its reliance on a theoretical framework without empirical validation. This highlights the need for future research that examines complex human-AI interaction processes using specific samples. Additionally, because the study focuses primarily on knowledge-intensive and technology-supported work environments, it should be noted that dynamics may differ in other sectors such as industrial production, healthcare services, or public administration. Comparative studies across sectors will therefore be essential for future research. Finally, considering that human-AI collaboration fatigue may be influenced by cultural context, examining employee perceptions across different countries would provide valuable contributions to the literature.

Overall, this study fills an important gap by demonstrating that human-AI collaboration should be evaluated not only in terms of efficiency and performance but also in relation to employee well-being and organizational behavior outcomes. By offering a conceptual model of human-AI collaboration fatigue, it establishes a solid theoretical foundation for future quantitative and qualitative studies and emphasizes the need for

organizations to prioritize human-centered design principles in technology integration processes. Accordingly, the study advances the human-AI collaboration literature toward a more balanced and critical direction that centers the human experience rather than focusing solely on technological success.

REFERENCES

Arslan, A., Cooper, C., Khan, Z., Golgeci, I., & Ali, I. (2021). Artificial intelligence and human workers interaction at team level: a conceptual assessment of the challenges and potential HRM strategies. *International Journal of Manpower*. https://doi.org/10.1108/ijm-01-2021-0052

Bai, S., Zhang, X., Yu, D., & Yao, J. (2024). Assist me or replace me? Uncovering the influence of AI awareness on employees' counterproductive work behaviors. *Frontiers in Public Health, 12*. https://doi.org/10.3389/fpubh.2024.1449561

Chand, S., & Lu, Y. (2023). Dual task scheduling strategy for personalized multi-objective optimization of cycle time and fatigue in human-robot collaboration. *Manufacturing Letters*. https://doi.org/10.1016/j.mfglet.2023.08.064

Chhetri, M., Tariq, S., Singh, R., Jalalvand, F., Paris, C., & Nepal, S. (2024). Towards Human-AI Teaming to Mitigate Alert Fatigue in Security Operations Centres. *ACM Transactions on Internet Technology, 24*, 1 - 22. https://doi.org/10.1145/3670009

Coles-Brennan, C., Sulley, A., & Young, G. (2019). Management of digital eye strain. *Clinical and experimental Optometry, 102*(1), 18-29.

Corvite, S., Roemmich, K., Rosenberg, T., & Andalibi, N. (2023). Data Subjects' Perspectives on Emotion Artificial Intelligence Use in the Workplace: A Relational Ethics Lens. *Proceedings of the ACM on Human-Computer Interaction, 7*, 1 - 38. https://doi.org/10.1145/3579600

Fahnenstich, H., Rieger, T., & Roesler, E. (2024). Trusting under risk-comparing human to AI decision support agents. *Computers in Human Behavior*, 153, 108107.

Fügener, A., Grahl, J., Gupta, A., & Ketter, W. (2022). Cognitive challenges in human–artificial intelligence collaboration: Investigating the path toward productive delegation. *Information Systems Research, 33*(2), 678-696.

Hao, X., Demir, E., & Eyers, D. (2024). Exploring Collaborative Decision-Making: A Quasi-Experimental Study of Human and Generative AI Interaction. *Technology in Society*. https://doi.org/10.1016/j.techsoc.2024.102662

Hilmi, A., Hamid, A., & Ibrahim, W. (2024). Advancements in Cognitive Ergonomics: Integration with Human-Robot Collaboration, Workload Management, and Industrial *Applications. Malaysian Journal of Ergonomics (MJEr)*. https://doi.org/10.58915/mjer.v6.2024.1368

Hopko, S., Khurana, R., Mehta, R., & Pagilla, P. (2021). Effect of Cognitive Fatigue, Operator Sex, and Robot Assistance on Task Performance Metrics, Workload, and Situation Awareness in Human-Robot Collaboration. *IEEE Robotics and Automation Letters, 6*, 3049-3056. https://doi.org/10.1109/lra.2021.3062787

Jackson, P. C. (2019). Introduction to artificial intelligence. Courier Dover Publications.

Jeon, H., Jin, D., Choi, S., Cho, H., Lee, K., & Koo, Y. (2024). AI-assisted Work Services Utilizing human-AI Collaboration Levels : The Case of Ward Nurses. *Archives of Design Research*. https://doi.org/10.15187/adr.2024.11.37.5.353

Jia, J., Ning, X. & Liu, W. The consequences and theoretical explanation of workplace AI on employees: a systematic literature review. *J. Digit. Manag. 1*, 14 (2025). https://doi.org/10.1007/s44362-025-00016-3

Kalatzis, A., Prabhu, V., & Stanley, L. (2025). Identifying the Contributors of Intrinsic, Extraneous, and Germane Load in Human-Robot Collaboration Through Interview Questions. *AHFE International*. https://doi.org/10.54941/ahfe1006374

Kolbjørnsrud, V. (2023). Designing the Intelligent Organization: Six Principles for Human-AI Collaboration. *California Management Review, 66*, 44 - 64. https://doi.org/10.1177/00081256231211020

Kolomaznik, M., Petrik, V., Slama, M., & Juřík, V. (2024). The role of socio-emotional attributes in enhancing human-AI collaboration. *Frontiers in Psychology, 15*. https://doi.org/10.3389/fpsyg.2024.1369957

Kong, H., Yuan, Y., Baruch, Y., Bu, N., Jiang, X., & Wang, K. (2021). Influences of artificial intelligence (AI) awareness on career competency and job burnout. *International Journal of Contemporary Hospitality Management*. https://doi.org/10.1108/ijchm-07-2020-0789

Kreye, F., Hynes, J., & Koç, H. (2025). *Factors and consequences of loneliness in the digital workplace: A systematic literature review and framework for empirical testing*. 24th International Conference on Perspectives in Business Informatics Research (BIR 2025), September 17-19, 2025, Riga, Latvia.

Li, Z. (2025). *Enhancing Human-AI Collaboration through Adaptive Interaction and Explainability*. Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society , 26-27. https://doi.org/10.1609/aies.v7i2.31900

Lițan, D. E. (2025). The Impact of Technostress Generated by Artificial Intelligence on the Quality of Life: The Mediating Role of Positive and Negative Affect. *Behavioral Sciences, 15*(4), 552.

Lin, C., & Lukodono, R. (2021). Sustainable Human-Robot Collaboration Based on Human Intention Classification. *Sustainability, 13*, 5990. https://doi.org/10.3390/su13115990

Marr, N. (2021). *Yapay zekâ devrimi, Dijital dönüşüm işinizi nasıl etkileyecek*, Çev: Ümit Şensoy, Optimist Yayıncılık

McGrath, M. J., Duenser, A., Lacey, J., & Paris, C. (2025). Collaborative human-AI trust (CHAI-T): A process framework for active management of trust in human-AI collaboration. *Computers in Human Behavior: Artificial Humans*, 100200.

Meng, Q., Wu, T., Duan, W., & Li, S. (2025). Effects of Employee-Artificial Intelligence (AI) Collaboration on Counterproductive Work Behaviors (CWBs): Leader Emotional Support as a Moderator. *Behavioral Sciences, 15*. https://doi.org/10.3390/bs15050696

Messeri, C., Bicchi, A., Zanchettin, A., & Rocco, P. (2022). A Dynamic Task Allocation Strategy to Mitigate the Human Physical Fatigue in Collaborative Robotics. *IEEE Robotics and Automation Letters, 7*, 2178-2185. https://doi.org/10.1109/lra.2022.3143520

Mirbabaie, M., Brünker, F., Frick, N., & Stieglitz, S. (2021). The rise of artificial intelligence - understanding the AI identity threat at the workplace. *Electronic Markets, 32*, 73 - 99. https://doi.org/10.1007/s12525-021-00496-x

Nilsson, N. J. (1971). *Problem-solving methods in artificial intelligence*. New York: McGraw-Hill.

Okamura, K., & Yamada, S. (2020). Adaptive trust calibration for human-AI collaboration. *PLoS ONE, 15*. https://doi.org/10.1371/journal.pone.0229132

Parks, M., & Allison, M. (2023). *Autonomy and Fatigue in Human-Robot Teams. In 2023 IEEE International Performance*, Computing, and Communications Conference (IPCCC) (pp. 158-159). IEEE.

Peternel, L., Tsagarakis, N., Caldwell, D., & Ajoudani, A. (2017). Robot adaptation to human physical fatigue in human-robot co-manipulation. *Autonomous Robots, 42*, 1011 - 1021. https://doi.org/10.1007/s10514-017-9678-1

Rademaker, T., Klingenberg, I. & Süß, S. Leadership and technostress: a systematic literature review. *Manag Rev Q 75*, 429-494 (2025). https://doi.org/10.1007/s11301-023-00385-x

Roveda, L., Maskani, J., Franceschi, P., Abdi, A., Braghin, F., Tosatti, L., & Pedrocchi, N. (2020). Model-Based Reinforcement Learning Variable Impedance Control for Human-Robot Collaboration. *Journal of Intelligent & Robotic Systems, 100*, 417 - 433. https://doi.org/10.1007/s10846-020-01183-3

Steyvers, M., & Mayer, L. (2025). When not to help: planning for lasting human-AI collaboration. *arXiv preprint* arXiv:2508.01837.

Tang, P., Koopman, J., Mai, K., De Cremer, D., Zhang, J., Reynders, P., Ng, C., & Chen, I. (2023). No person is an island: Unpacking the work and after-work consequences of interacting with artificial intelligence. *The Journal of applied psychology*. https://doi.org/10.1037/apl0001103

Teng, R., Zhou, S., Zheng, W., & , C. (2023). Artificial intelligence (AI) awareness and work withdrawal: evaluating chained mediation through negative work-related rumination and emotional exhaustion. *International Journal of Contemporary Hospitality Management*. https://doi.org/10.1108/ijchm-02-2023-0240

Urrea, C. (2025). Fatigue-Aware Sub-Second Combinatorial Auctions for Dynamic Cycle Allocation in Human-Robot Collaborative Assembly. *Mathematics, 13*(15), 2429. https://doi.org/10.3390/math13152429

Vaccaro, M., Almaatouq, A., & Malone, T. (2024). When combinations of humans and AI are useful: A systematic review and meta-analysis. *Nature Human Behaviour, 8*, 2293 - 2303. https://doi.org/10.1038/s41562-024-02024-1

Vössing, M., Kühl, N., Lind, M., & Satzger, G. (2022). Designing Transparency for Effective Human-AI Collaboration. *Information Systems Frontiers, 24*, 877 - 895. https://doi.org/10.1007/s10796-022-10284-3

Westphal, M., Vössing, M., Satzger, G., Yom-Tov, G. B., & Rafaeli, A. (2023). Decision control and explanations in human-AI collaboration: Improving user perceptions and compliance. *Computers in Human Behavior, 144*, 107714. https://doi.org/10.1016/j.chb.2023.107714

Wu, S., Liu, Y., Ruan, M., Chen, S., & Xie, X. (2025). Human-generative AI collaboration enhances task performance but undermines human's intrinsic motivation. *Scientific Reports, 15*. https://doi.org/10.1038/s41598-025-98385-2

Xu, G., Xue, M., & Zhao, J. (2023). The Association between Artificial Intelligence Awareness and Employee Depression: The Mediating Role of Emotional Exhaustion and the Moderating Role of Perceived Organizational Support. *International Journal of Environmental Research and Public Health, 20*. https://doi.org/10.3390/ijerph20065147

Yao, B., Li, X., Ji, Z., Xiao, K., & Xu, W. (2024). Task reallocation of human-robot collaborative production workshop based on a dynamic human fatigue model. *Computers & Industrial Engineering, 189*, 109855. https://doi.org/10.1016/j.cie.2023.109855

You, Y., Cai, B., Pham, D. T., Liu, Y., & Ji, Z. (2025). A human digital twin approach for fatigue-aware task planning in human-robot collaborative assembly. *Computers & Industrial Engineering, 200*, 110774., 200, 110774. https://doi.org/10.1016/j.cie.2024.110774

Zhang, R., Duan, W., Flathmann, C., Mcneese, N., Freeman, G., & Williams, A. (2023). Investigating AI Teammate Communication Strategies and Their Impact in Human-AI Teams for Effective Teamwork. *Proceedings of the ACM on Human-Computer Interaction, 7*, 1 - 31. https://doi.org/10.1145/3610072

Zheng, J., & Zhang, T. (2025). Association Between AI Awareness and Emotional Exhaustion: The Serial Mediation of Job Insecurity and Work Interference with Family. *Behavioral Sciences, 15*. https://doi.org/10.3390/bs15040401.