



KOREAN STUDIES IN THE ARTIFICIAL INTELLIGENCE ERA

**VOLUME 2: ADOPTION INSIGHTS IN HOSPITALITY,
CULTURE, COMMUNICATION, MUSIC,
AND PHILOSOPHY**

Edited by
Seok Kang, Wookjae Heo, Woo Hyoung Lee,
Jangwoon Lee, and Young B. Choi



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Korean Studies in the Artificial Intelligence Era

This two-volume book offers an in-depth exploration of Korea's multidisciplinary advancements in Artificial Intelligence (AI). It showcases how Korean and Korean American scholars utilize diverse methodologies, including systematic literature reviews, empirical research, and industry case studies, to illustrate AI's transformative impacts across fields like engineering, business, health, and education. It bridges a gap in global AI literature and provides comprehensive insights into AI's trajectory, ethical considerations, and prospects, aiming to establish Korea's AI research as a vital topic on the global academic stage.

The editors offer a unique, interdisciplinary exploration of AI research, distinctly focusing on Korea's significant contributions. It highlights how Korea has achieved milestones across diverse fields like engineering, business, humanities, and healthcare. Key advantages include its spotlight on Korean innovations, filling a crucial gap in global literature and offering insights into an underrepresented yet influential context. Its interdisciplinary perspective spans five major fields, integrating rigorous methodologies, from systematic reviews to empirical analysis, ensuring robust, evidence-based insights. With real-world relevance derived from practical case studies, it bridges theory and application. This book ensures global accessibility, making Korea's AI advancements widely recognized and fostering crucial cross-cultural academic exchange. This is a critical addition to the global AI discourse serving as a catalyst for further research and collaboration.

This book targets the industry practitioner with rigorous AI insights and real-world applications, serving as a useful guide. With high research standards and diverse methodologies, this book can be used for graduate-level studies, serving as a useful reference resource.



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Foreword

As the copyeditor of the two volumes of *Korean Artificial Intelligence Research in the Global Landscape*, I had both the pleasure and privilege of learning about the state of AI in Korean studies—not only within academia but also across various aspects of modern life. The chapters, written by some of the most distinguished minds in their respective fields, impressed me with their intellectual depth and real-world applicability. Reading the chapters in Volume 1, which focuses on STEM disciplines, was fascinating—even though it lies outside my own background in the humanities and arts.

The chapters in Volume 2 discuss AI as it relates to the humanities, arts, and social sciences. Most educated readers will find them equally fascinating, too. To briefly summarize the chapters, the early ones explore AI's expanding role in Korea's financial and healthcare systems. Jinhee Choi examines how machine learning reshapes personal finance and challenges conventional models of financial planning, while Yong Hwan Kim extends the discussion to public welfare, analyzing AI's ethical and operational implications in medical diagnostics and predictive analytics. Together, they illustrate Korea's ability to channel innovation toward socially responsive applications, balancing efficiency with equity.

Subsequent chapters move from economics and welfare to communication, culture, and theory. Seok Kang situates Korea within global debates on AI-mediated information flows, while studies by Byung Gwun Choy, Paul Hong, and Dal Yong Jin demonstrate how AI technologies amplify Korea's soft power through K-pop, film, and broadcasting. Moon-Sook Park and Dasaem Jeong show how AI revitalizes traditional art forms, using composition tools to reconstruct lost 15th-century Korean court music. The closing chapters by Bomi Kang, Bong Keun Jeong, Wooyang Kim, C. Anthony Di Benedetto, and Donald A. Hantula turn to organizational and theoretical perspectives, integrating innovation and adoption models to reveal how cultural contexts shape the spread of generative AI. Collectively, these contributions position Korea at the forefront of AI's technological and humanistic frontiers.

The chapters in Volume Two represent some of the finest research on AI in Korean studies to date. Together with those in Volume One, they illuminate the current state and potential of AI applications, the challenges surrounding its use, and the inevitable ethical issues it raises. One of the greatest strengths of these volumes is the diversity of contributors—from the United States, Canada, South Korea, and beyond—which allows readers to gain a

bird's-eye view of one of the most transformative technological developments of the 21st century. Such a comprehensive perspective would be difficult to achieve in a monograph authored by a single scholar or even a small team. The depth, rigor, and insight found throughout the chapters testify to the contributors' scholarly dedication.

As a university professor and administrator, I became aware of AI's relevance to the humanities only two or three years ago. As in many universities across North America, faculty members began to detect AI-assisted plagiarism in student papers, prompting discussions on how best to address it. My institution has since established its own AI policy, and the faculty continues to explore ways to manage AI-related challenges. At the same time, we also consider how AI might enhance teaching and learning. As expected, some faculty members resist AI, while others are more open to its possibilities. What has become increasingly clear is that AI usage is inevitable, even in higher education. Students must learn not only how to use AI responsibly but also when *not* to use it—both during their college years and beyond. AI is here to stay, and it is the responsibility of educators to understand how it is reshaping our world and to keep students informed about its growing role across various sectors of life.

In addition to the wide-ranging developments in AI across various industries, as discussed by the contributors to Volume Two, its presence in daily life is increasingly easy to notice. Two years ago, I observed a robot running an errand at Seoul-Incheon International Airport. It frequently paused before proceeding slowly, and at first, I was puzzled by its behavior. Then, it dawned on me that it was an intelligent tool performing tasks humans usually do. While attending a conference at the University of Mississippi in March 2025, I saw another robot delivering items between buildings—its movement both amusing and fascinating. At restaurants in both the United States and East Asia, orders are now often placed using kiosk screens, a process that can confuse old-fashioned customers like me. By contrast, younger generations seem to enjoy AI-assisted ordering. For aging populations, the minimization of human interaction can feel strange, though some may prefer it.

Despite the risks associated with AI, it can serve as a remarkably useful and efficient tool for creative activities. A colleague of mine, though generally disdainful of AI, nevertheless uses it to generate bedtime stories for his seven-year-old son. He provides a rough outline, and the program produces a narrative with a plausible plot and engaging characters. Unlike grandmothers in premodern times, who had to rack their brains to invent stories, people today can summon one in less than a minute with a simple prompt. Another colleague's mother once used ChatGPT to generate a short novel, which she printed and gave to her husband as a gift. It was not intended for publication but was simply "a fun thing to do" as a loving spouse.

As for me, I recently collaborated with ChatGPT to create a 12-stanza Japanese-style poem. The first six stanzas are as follows:

Missouri's Four Seasons

A junichō renku [12-stanza Japanese-style poem], by John J. Han, in collaboration with ChatGPT (OpenAI). *ChatGPT contributed stanzas 2, 4, 6, 8, 10, and 12. Han suggested revisions to several of ChatGPT's lines.*

1
as light
as the spring breeze...
mom's ashes

2
new buds trembling
a hummingbird hovers
above the fence

3
after the fireflies
the depths of
the darkness

4
crickets chorus
in the tall grass—
evening hums along

5
late autumn chatter
a squirrel pauses
mid-hoard

6
fog drifts low
over the pumpkin patch—
silent tractors

I insisted that ChatGPT be listed as my co-author, but it declined, explaining that it cannot serve as an author. Instead, it suggested that I acknowledge its contribution with the phrase “in collaboration with ChatGPT,” as reflected in the note beneath the poem's title.

Truly, we are entering a new technological age in human history. The rapid expansion of AI has profoundly reshaped the landscape of human

knowledge, creativity, and social organization. As a native of South Korea who has lived in the United States for nearly 40 years, I find Korea's leadership in this global transformation both exhilarating and deeply meaningful. It fills me with pride for the country that so many in my generation once sought to leave in search of a better life elsewhere.

John J. Han



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Introduction: Korean Artificial Intelligence Research in the Global Landscape—Usages, Impacts, and Future Prospects in Business, Humanities, and Social Sciences

Seok Kang and Wookjae Heo

1.1 Transnational Impact of AI Technology

Artificial intelligence (AI) now permeates nearly every sector of today's society, both at the micro and macro levels. Industries, organizations, and individuals use AI daily, and its future impacts are immeasurable. Transnational data attest to this widespread adoption. According to a global AI report, which surveyed industry professionals worldwide, 87% of them viewed AI as a top priority in their organizations. Over 76% of their organizations utilize some form of AI, ranging from systems to generative tools (Minevich, 2025). As an innovative engine, AI—a machine-based ability to implement human-like learning, problem-solving, and decision-making—encompasses multiple areas from natural language processing (NLP) to speech recognition, to generative AI (GAI), and to robotics (Zehnle et al., 2025). Several nations currently lead in AI innovation and technological transformation. Recent global AI power rankings demonstrate that the United States, China, the United Kingdom, India, the United Arab Emirates, France, Korea, Germany, Japan, and Singapore rank among the top ten countries in AI research, development, and infrastructure (Stanford HAI, 2025). As such, South Korea is at the center of these AI revolutions.

A single search in the Web of Science database using the keywords “Korea” and “Artificial Intelligence” yields 34,844 academic works. Another scholarly database, Academic Search Complete, which primarily focuses on the humanities and social sciences, shows 10,283 research articles in a single search. These results clearly indicate Korea's position in the AI domain compared to Japan and the United States, where a slightly larger number of

results is expected, given the country's size and volume. Korea, in fact, stands at the forefront of AI development in today's humanities and social sciences. As a part of its effort to shape the global landscape of AI, Korea has invested in balancing AI advancement with ethical principles (Baig & Gardezi, 2025). Its goal is to promote human-centered AI through transparent governance.

1.2 KAUPA's Contribution to the Book

Founded in 1986 as a nonprofit scholarly organization, the Korean American University Professors Association (KAUPA) has been a powerhouse for Korean researchers, faculty, and students in North America. They have met, discussed, and implemented academic initiatives to establish a forum among scholars of Korean descent. KAUPA's strengths lie in its multidisplinary, enabling its members to conduct research and professional projects that draw on cross-disciplinary expertise. From the humanities to AI to medical science, KAUPA has been a forerunner in leveraging intellectual resources the members provide.

In this edited collection, the authors' competencies are well presented as they articulate AI development and future outlook in both Korean and global contexts. Volume 2 focuses on social science, humanistic, liberal arts, business, and philosophical aspects of Korean AI. Furthermore, the implications of Korean AI research are contextualized in the global community. This collection has been made possible by the rich pool of KAUPA scholars contributing from their respective fields.

1.3 Overview of This Book Project

This book project was initiated to commemorate the 40th anniversary of KAUPA in 2026. In September 2024, the planning committee submitted a grant proposal to the Academy of Korean Studies in South Korea for conference and workshop support. The proposal, titled "Korean Studies in the Artificial Intelligence Era: Multidisciplinary Research by Korean Scholars Transforming the World," set the project period from February 1, 2025, to January 31, 2026. As a result, the proposal was approved, and the project received funding to host KAUPA's 40th Anniversary Conference.

From two broad disciplinary categories—natural science and engineering, as well as the humanities and social sciences—the committee accepted

extended abstracts from KAUPA scholars. Papers from the fields of the humanities and social sciences are collected in this volume. The chapters address topics such as AI and machine learning in personal finance, the use of AI in Korea's public health sector, the revival of Chosun-era music through AI, the role of AI in human capital in stock valuation, AI-driven competitiveness and adoption, creativity in the age of AI, and AI-enhanced knowledge.

A book contract with CRC Press provided a structured framework for the volume through relevant categorization and allocation. Several guidelines were provided to the authors. First, we encouraged them to focus on the status of Korean AI in their fields. Second, the authors were asked to link the impact of AI in Korea to global implications. Third, to balance knowledge with responsible AI, we also asked the authors to incorporate ethical considerations of AI into their work.

1.4 Introduction to the Chapter

Chapter 2, authored by HS Chris Choi, Minwoo Lee, Woojin Lee, and Bomi Kang, maps the AI-driven transformation of Korea's tourism and hospitality sector. The authors survey core technologies—from generative and multimodal AI to robotics, computer vision, and agentic systems—and show how they reconfigure customer experience, operations, marketing, and sustainability across hotels, airlines, airports, and smart-destination projects. Case illustrations highlight service robots, voice and chat assistants, dynamic pricing, and AI-enhanced destination platforms, framing AI as an augmentation of human service rather than its replacement. At the same time, the chapter confronts the hard problems: privacy, bias, and fairness in recommendations and pricing, workforce transitions, and regulatory alignment. Building on these tensions, the authors propose a six-pillar strategic framework (governance, human-centered design, industry collaboration, sandbox regulation, academic partnership, and consumer empowerment) and outline a future research agenda that prioritizes longitudinal evidence, cross-cultural acceptance, small and medium-sized enterprises (SME) adoption, and ethical safeguards. Together, these arguments position Korea as a living laboratory for responsible, human-centered AI in tourism and hospitality.

Chapter 3, by Wooyang Kim, C. Anthony Di Benedetto, and Donald A. Hantula, develops a multilevel theoretical framework for understanding the adoption and diffusion of GAI. Building on diffusion of innovation theory (DIT), the Technology Acceptance Model (TAM), the Technology Readiness Index (TRI), and Innovation Resistance Theory (IRT), the chapter integrates these perspectives into a unified conceptual model. The authors argue that

while GAI is often seen as a globally homogeneous phenomenon, in reality, its adoption and diffusion are deeply shaped by local sociocultural contexts. The chapter applies this integrated framework to the case of South Korea, examining how consumer attitudes, organizational readiness, and national policies converge to shape adoption patterns. It highlights the ambivalence surrounding GAI: optimism about efficiency and creativity coexists with anxieties about resistance, ethical dilemmas, and sociocultural misalignment. By positioning Korea as a key case study, Kim, Di Benedetto, and Hantula provide insights that extend beyond national borders, offering a comprehensive framework for analyzing GAI diffusion in other diverse social systems.

Chapter 4 by Bomi Kang and Bong Keun Jeong provides a systematic literature review on AI adoption and diffusion in Korea, framed within the Technology–Organization–Environment (TOE) model. The chapter synthesizes over 50 empirical and theoretical studies to identify the technological, organizational, and environmental factors that facilitate or hinder the adoption of AI. Key drivers include Korea’s strong digital infrastructure and government investment in innovation, while barriers include organizational readiness, ethical concerns, and cultural resistance to change. Importantly, this chapter not only catalogs existing studies but also establishes a forward-looking research agenda. It highlights gaps in organizational-level research, emphasizes the need for longitudinal studies on GAI, and calls for more integrative frameworks to capture Korea’s rapidly evolving AI landscape. By presenting a meta-analysis of adoption drivers and barriers, Kang and Jeong provide a foundation for policymakers and researchers to design more effective AI strategies that align with both Korea’s national ambitions and global best practices.

In Chapter 5, Dal Yong Jin discusses the role of AI in the Korean cultural industries and its global impact. The chapter offers critical insights into how AI influences the Korean cultural industries, particularly in popular culture, AI technology, and AI-driven cultural products. Jin addresses the critical understanding of AI-embedded popular culture with respect to creativity and diversity. Finally, the chapter foresees the role of AI in cultural products in the future of the Korean and global media industries. The chapter introduces AI use in the Korean broadcasting industry, the film industry’s adoption of AI, and popular culture connotations through a critical understanding of AI. Jin is convinced that AI provides opportunities for cultural corporations and creators. He emphasizes that AI use in the cultural industries is a global trend but warns of a growing divide within the sector.

Turning to Chapter 6, Moon-Sook Park and Dasaem Jeong affirm the role of AI in shaping the humanities field. By combining history, music, and AI, they reconstructed the missing elements of Korea’s 15th-century court music. The authors employed AI technology to restore the lost verses of Chihwapyeong

(치화평), Chwipunghyeong (취풍형), and Yeominrak (여민락), resulting in a multidimensional revival that bridges historical reconstruction with contemporary artistic interpretation. This collaborative production, incorporating AI into music, enables the embedding of Sejong the Great's (a king who led the renaissance of Korean history with the creation of Hangeul and cultural prosperity) foundational philosophy of Aemin Sasang (애민사상, "loving and caring for one's nation and people"). This chapter attests to the evidence of how AI can serve as a technology for cultural revitalization and reimagination.

Youn B. Choi, in Chapter 7, explores the interdisciplinary creativity and Zeitgeist of Gani Choi Rip (崔崧, 1539–1612)—a scholar-official, poet, diplomat, and practical thinker of mid-Joseon—arguing that his "philosophy of action" offers a historically grounded model for creativity in the age of AI. Moving across philosophy, literature, diplomacy, administration, and education, the chapter shows how Choi integrated Confucian ethics with pragmatic governance, elevated diplomatic writing into a literary practice, curated knowledge through the Gani-jip, and anticipated early Silhak orientations toward practical learning. Through comparative frames (e.g., Leonardo, Michelangelo, Jeong Yak-yong) and close readings of poetry and prose, it positions Choi as a Korean Renaissance figure whose creativity was not merely aesthetic but institution-shaping. The chapter closes by translating these historical insights into contemporary strategies for cultivating creativity—interdisciplinarity, ethical judgment, knowledge stewardship, and human-centered problem-solving—so that AI serves cultural depth and social good rather than abstraction alone.

Chapter 8, authored by Byung Gwun Choy and Paul Hong, examines Korea's soft power in the digital age, with a particular focus on the AI-enabled diffusion of cultural exports such as K-pop and K-movies. The chapter situates Korea as a cultural powerhouse that leverages both creativity and technology to amplify its influence. AI-powered recommendation systems, translation tools, and virtual idols are identified as core mechanisms through which Korean culture transcends linguistic and geographic boundaries. At the same time, the chapter highlights the dilemmas that AI introduces: issues of authenticity, ethics, and cultural legitimacy. By analyzing case studies of BTS, Blackpink, Parasite, and Squid Game alongside AI-driven platforms like Netflix and YouTube, the authors illustrate how Korea's cultural exports operate within algorithmically mediated networks of diffusion. They argue that AI functions not as a replacement for creativity but as a force multiplier of soft power. This positioning makes Korea both a pioneer and a testbed for global debates about AI and culture. The chapter concludes by suggesting that Korea's experience provides lessons for other nations seeking to navigate the opportunities and dilemmas of AI-driven cultural diplomacy.

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2

AI-Driven Transformation of Tourism and Hospitality in Korea: Opportunities, Challenges, and Strategic Pathways

HS Chris Choi, Minwoo Lee, Woojin Lee, and Bomi Kang

2.1 Introduction

Artificial intelligence (AI) is revolutionizing industries worldwide, with tourism and hospitality at the forefront of this transformation. In South Korea, a global leader in technology adoption, AI is reshaping how travel experiences are designed, delivered, and experienced. This chapter pursues four clear objectives: first, to identify the AI technologies most relevant to tourism; second, to map their deployment across Korea's visitor economy; third, to weigh the opportunities and risks that arise; and fourth, to propose actionable strategies for business and policy. South Korea's unique position as a tech-savvy nation with world-class digital infrastructure, a vibrant startup ecosystem, and strong government support for the Fourth Industrial Revolution makes it an ideal case study for examining AI-driven innovation in tourism. As of July 2025, Korea's tourism industry is leveraging cutting-edge AI advancements to enhance personalization, streamline operations, and promote sustainable practices, positioning the country as a global model for smart tourism. Recently, the Lee Jae-Myung government pledged a monumental 100-trillion-won investment to bolster the AI and robotics industries, emphasizing the development of sovereign AI tailored to the Korean language, culture, and societal needs. This ambitious initiative aims to position Korea among the top three global AI powerhouses, accelerating AI adoption in tourism and related sectors.

Since late 2024, AI technologies have advanced rapidly, with multimodal models integrating text, image, and voice processing, and generative AI enabling dynamic content creation, such as personalized travel itineraries and immersive virtual tours. These innovations build on Korea's robust