

China's AI Path Forward: Governance, Empowerment, and the Reconstruction of Emerging Technology Ecosystems

Aihua Zelinsky, Abigail Modino, and Joaquin Gonzalez III

The global business community continues to adjust to the changes, promises, missteps, and risks posed by the rapid rise of artificial intelligence. This JIDS Summer 2026 Special Issue, themed “China Trends in Artificial Intelligence and Other Emerging Technologies,” curates blind peer-reviewed practical research from doctoral students who are also working professionals at the frontlines of industries in China. They share emerging, evolving, and disruptive real-world, real-time research aligned with the leadership and service mission of Golden Gate University and EBU Luxembourg.

As these emerging technologies continue to evolve and reshape industries, it is imperative for Doctor of Business Administration (DBA) researchers not merely to observe and analyze the transformation, but also to help rectify dysfunctions by proposing adaptive frameworks and management practices — frameworks that define ethical boundaries, clarify regulatory compliance pathways, promote responsible deployment and governance, and strike an appropriate balance between human-in-the-loop oversight and the careful calibration of machine autonomy, even as some systems move toward human-out-of-the-loop operation.

By bringing together this frontier research, firsthand insight, and real-world application, this special issue helps bridge the gap between theory and practice, fostering cross-disciplinary dialogue on artificial intelligence and emerging technologies across cultural heritage governance, national innovation ecosystems, luxury retail and workforce development, urban governance, energy systems, and the biopharmaceutical industry — all viewed through the lens of contemporary China.

This special Chinese language accessible issue received more than a dozen submissions. After a rigorous peer-review process, six articles were selected and copyedited for this final publication.

Leading the scholar-practitioners articles in this issue is Qi Peng's¹ “Research on the Synergistic Mechanism and Future Trends of China's Emerging Technology Innovation Ecosystem: A Comparative Analysis Based on Artificial Intelligence, Quantum Technology, and New Energy,” which systematically dissects the operating mechanisms and divergent international competitiveness of China's AI, quantum technology, and new

¹Qi Peng's broad research focus is on corporate management and governance. She is an experienced business researcher specializing in user experience management and enterprise digital transformation.

energy industries along four dimensions: policy synergy, technological synergy, industrial synergy, and the synergy between challenges and opportunities. Drawing on literature review, policy-document textual analysis, and cross-case comparison, Peng traces the evolutionary trajectories, milestone achievements, and commercialization pathways of these three strategic technology sectors. The findings indicate that China's emerging-technology innovation is primarily driven by top-down national policy guidance, abundant domestic application scenarios, and coordination across the entire industrial chain — the institutional strengths of China's new whole-of-nation system. China shows outstanding commercialization and industrial-landing efficiency in application-driven sectors such as AI industrialization and photovoltaics, even as structural bottlenecks remain prominent in fundamental research and high-end core components. The paper compares the technological development paradigms of China, the United States, and Europe, and proposes targeted recommendations on scaling up basic-research investment, refining ethical governance frameworks, and deepening international technological collaboration — offering references that late-developing economies worldwide can draw on to build robust, sustainable innovation ecosystems.

The second article, turning to workforce development, is Wei Zhang's² "Moving Towards Emotional Intelligence: How to Restructure Training Strategies for Frontline Employees in the High-End Luxury Industry Amid the Development of the Hainan Free Trade Port." Zhang situates the study amid Hainan's island-wide customs closure under the Free Trade Port framework, which has thrust the interplay between duty-free allowances, high-end travel retail, and brand-operated boutiques into uncharted institutional territory. Frontline associates are expected to master product storytelling, client recognition, and service coordination — often within razor-thin windows and across a tangle of touchpoints — all while guarding the craftsmanship narratives, aesthetic judgment, and emotional resonance that luxury brands are built on. Using structured literature review, documentary analysis, and secondary data analysis of Hainan policy documents, statistical releases, and industry reports from 2023 to 2026, alongside annual reports and talent-program materials from LVMH, Richemont, and Kering, Zhang finds that Hainan's policy and consumer environment has elevated service experience to a strategic imperative, and that top-tier luxury groups have converged on talent-development practices centered on craftsmanship transmission, rotational training, digital client experience, and omnichannel operations — even as public evidence still falls short of establishing a definitive link between digital learning, AI applications, and frontline service performance. Building on this, Zhang proposes an Affective-Intelligent Training Strategy Framework: brand-meaning stewardship as the value anchor, contextualized knowledge construction as the content backbone, human-machine collaborative practice as the learning mechanism, and authority, privacy, and brand consistency as governance guardrails.

²Wei Zhang is an experienced business researcher specializing in corporate talent learning and development, sustainable leadership, and business digital transformation. His research focus is on AI-enabled talent learning and development.

The third article is Fang Qin (Jason)’s³ “A Process Model of Cross-System Trust Institutionalization for Cultural Heritage Assets: Constructing a W-Shaped Mechanism via the Grounded Theory Paradigm.” Qin argues that the fundamental challenge in turning cultural heritage into financial assets lies in a structural mismatch between the cultural heritage system and the financial system around professional trust and risk-control trust. To open this “credit black box,” Qin draws on the Chinese paradigm of grounded management research — in-depth interviews with twelve experts and more than 80,000 words of data — to construct a W-shaped model of trust institutionalization comprising four processes: standardization, proceduralization, authorization, and financialization. The findings show that this process is anchored by data-interface locking, legitimacy endowment, and credit-to-liquidity conversion, and that skipping or bypassing any of these mechanisms leads to systemic collapse. The model further demonstrates that technical validity does not equal institutional acceptance, and institutional acceptance does not equal financial liquidity — progressive gaps that Qin’s middle-range theoretical framework offers an actionable path to closing, opening the door to breaking cultural heritage assets out of financial exclusion.

The fourth article is Yongbo Cui’s⁴ “Digital Reconstruction Mechanisms for Supply Chain Resilience in China’s Biopharmaceutical Consumables Sector under Geopolitical Risks.” Against a backdrop of intensifying geopolitical competition and global biopharmaceutical supply-chain restructuring, Cui shows that Chinese biopharmaceutical firms face systemic security challenges in critical production consumables: key inputs such as single-use bioreactor bags, chromatography resins, filtration assemblies, and cell culture media remain highly dependent on Western multinational suppliers. With the BIOSECURE Act incorporated into the U.S. federal legislative framework, together with export controls and friend-shoring policies, supply-chain risk has shifted from a commercial-efficiency issue to a strategic question of national security and industrial resilience. Drawing on resource dependence theory, normal accident theory, and dynamic capabilities theory, Cui develops an integrated analytical framework examining import dependence, tight coupling, domestic-substitution barriers, and digital-reconstruction mechanisms in China’s biopharmaceutical consumables supply chain. The paper argues that digital twins, generative AI, and agentic AI are evolving from tactical efficiency tools into strategic resilience infrastructure: digital twins reduce process-substitution risk through virtual validation, generative AI mitigates information asymmetry through multi-source intelligence and supply-chain knowledge graphs, and agentic AI improves network reconfiguration through autonomous decision-making and compliance orchestration.

³Fang Qin (Jason) is a senior television director at Beijing Radio and Television Station (BRTV), China, and a member of the expert group for the major research project “Accelerating the Construction of the ‘Creative Transformation and Innovative Development’ System for Traditional Culture to Promote the High-Quality...”

⁴Yongbo Cui is a seasoned CMC (Chemistry, Manufacturing, and Controls) expert with many years of deep experience in the biopharmaceutical industry, including extensive process development and production management experience for biologics. His doctoral research is focused on corporate management.

The fifth article, Jian Hu's⁵ "Artificial-Intelligence-Driven Urban Governance in China: Technical Paths, Governance Mechanisms and Multi-case Evidence," treats artificial intelligence as evolving from a technical tool into a core driving force reshaping smart cities. Using a descriptive multi-case analysis, Hu focuses on the implementation pathways and practical impacts of AI in China's smart-city initiatives and explores how AI-enabled systematic innovation can transform urban governance. The study reveals that AI advances smart-city development through a technical loop of perception, cognition, decision-making, and optimization, across four dimensions: precise urban perception powered by multimodal deep learning; secure data integration enabled by federated learning; system optimization combining reinforcement learning and digital twins; and urban agents augmented by large language models. Empirical evidence from representative Chinese smart-city scenarios shows tangible outcomes, including a 20% reduction in traffic congestion, a rise of more than 90% in the proactive detection rate of urban incidents, and a 30% improvement in the accuracy of epidemic-spread prediction. Hu argues that China's future smart-city development will see three major shifts: from function-oriented to scenario-oriented intelligence, from purely data-driven approaches to the joint driving of knowledge and data, and from technological empowerment to institutional reconstruction — offering valuable references for the governance of global megacities.

Closing out this issue is Luhui Lin's⁶ "Smart Energy Dispatch for Telecommunication Base Station Virtual Power Plants: An LSTM-Reinforcement Learning Framework," which addresses a growing need: as the share of renewable energy integration continues to rise, virtual power plants (VPPs) have become an important mechanism for supporting grid flexibility and coordinating distributed energy resources, and accurate power scheduling is critical to efficient energy management and minimizing operating costs. Lin proposes a deep-learning-based power-scheduling method for VPP services at communication base stations, integrating long short-term memory (LSTM) networks with reinforcement learning into an integrated "prediction–decision" optimization framework: LSTM mines the time-series dependence of power demand to achieve high-accuracy forecasting, while reinforcement learning dynamically optimizes each base station's energy-scheduling strategy to balance lower operating costs against improved energy sustainability. Experimental results show the proposed model outperforms conventional methods in both prediction accuracy and operational efficiency, effectively cutting VPP operating costs and improving energy-utilization efficiency — offering a prediction–decision framework for energy management built on distributed communication base-station resources, with significant implications for building a more resilient and sustainable power system.

In sum, the six articles in this issue range across national innovation ecosystems, workforce development in high-end services, cultural heritage assetization, biopharmaceutical supply-chain resilience, smart-city governance, and energy-system

⁵Jian Hu's research focuses on hospitality management, consumer perception, and digital innovation in the service sector, with an emphasis on how emerging technologies such as artificial intelligence empower the service industry and smart city development.

⁶Luhui Lin is a product expert specializing in application platforms for the new energy industry, with extensive experience taking software products from 0 to 1 and from 1 to n, as well as project management experience. His research focus is on corporate management and governance.

scheduling — offering a multi-angle view of the profound changes that artificial intelligence and emerging technologies are driving across China's economy and society. As our doctoral researchers make clear, these rapidly emerging, evolving, and disruptive technologies call for an equally rapid, responsive, and responsible set of human guardrails, rules, regulation, and governance. We agree. Read on!