

Volume IV extends the Global Artificial Intelligence Development and Competitiveness Assessment Framework to frontier and emerging dimensions of AI development, strategic foresight, and long-term readiness.

It examines preparedness for advanced and emerging AI domains, including frontier models, green AI, AI-quantum integration, embodied intelligence, neuromorphic computing, and AI-enabled scientific discovery. The volume assesses emerging technological capabilities together with the infrastructure, institutional readiness, cross-domain integration, and adaptive capacity required to respond to future shifts in AI development.

The Future Outlook concludes the Framework by examining how technological convergence, institutional adaptation, strategic uncertainty, and governance evolution may reshape future AI development and competitiveness. Together, the frontier indicators and forward-looking analysis provide a structured basis for identifying emerging opportunities, vulnerabilities, transition pathways, and long-term strategic implications.

About the Four-Volume Series

This four-volume series provides a systematic examination of global AI development, competitiveness, and AI power. Moving from foundational infrastructure and technological capabilities through applications and competitiveness to governance, risk, human capital, frontier indicators, and future-oriented strategic pathways, the series establishes a comprehensive assessment framework for understanding how AI capabilities are built, deployed, measured, governed, and transformed into durable national, institutional, and strategic power in an increasingly competitive global landscape.

VOLUME
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Dr. Shaoyuan Wu



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