Intelligent computing represents an emerging horizon for computational science and intelligent technology. As the human society enters the intelligent era and the demand for computation explodes, the rapid development of artificial intelligence (AI) and computational science has manifested a strong tendency for close correlation, responding to the epochal calling of the whole-scale integration of physical, cyber, and social systems [1]. Meanwhile, it is expected to seek systematic answers and sustainable development solutions in significant aspects such as computational power, data security, energy consumption, and intelligence levels.

Rooted in the essential philosophy of computing for and by intelligence, intelligent computing has driven the recent explosive revolution of AI as its primary booster [2]. On the other hand, AI has taken a leading role in global technology innovation, with data, algorithms, knowledge, and computational power as its key pillars [3]. While AI innovation has strongly relied on computational science and technology, innovation in computational science, especially new research paradigms achieved through cutting-edge computing methodologies, has also benefitted from the astonishing revolution of AI technology.

Intelligence science and technology has become a fundamental focus of scientific research around the world, showing an ever-increasing trend of shifting traditional IT disciplines to burgeoning areas such as data intelligence, autonomous unmanned devices and systems, deep learning, machine consciousness, and even metaverse.

No doubt, computational methodologies play a more and more indispensable role in machine intelligence, providing highly powerful, efficient, intelligent, and trusted computing solutions for the development and innovation of AI. Accordingly, not only new computing theories, architectures, and models will be established but also new computing devices, hardware, and software will be developed. Furthermore, new computing paradigms such as quantum computing, photonic computing, bioinspired computing, and brain-like computing are anticipated to come into sight. In parallel, domain-specific computing, intelligent supercomputing, heterogeneous computing clusters, and wide area collaborative computing are producing increasingly remarkable influence. Moreover, cognitive computing, swarm intelligence, and human-computer interactive computing promisingly pave the way to ubiquitous intelligence.

Coming in pairs, AI-based methodologies greatly improve and even transform computational science and technology. In particular, AI-empowered technology advancement has been ameliorating and optimizing the complex functions and performance of various computing systems, which enables collaboration and reconfiguration of computational hardware and software, intelligent decomposition of computing tasks, automatic scheduling, and adaptation of computing resources, as well as achieving highly efficient, safe, effective, and transparent computing functionalities.

Given the interdisciplinary nature of intelligent computing, a new frontier has already appeared for significant scientific findings and applications via the integration of machine intelligence, data, and computing methodologies. Intelligent computational biology, material science, physics, and social science are just several representative examples. With the help of AI, an impressive discovery of a new powerful antibody compound (i.e., super-antibiotic) has been achieved.
through experiments within just a few weeks, overwhelmingly overcoming the conventional approaches that usually take several years [4]. Recently, protein folding, a well-known biological problem existed for nearly 50 years, has been solved by taking advantage of AI and powerful computational support [5].

In order to encourage and facilitate research communication and cooperation among global science and technology professionals in the related fields of intelligent computing, we are launching this new journal, Open Access Science Partner Journal [6], published under a Creative Commons Attribution License (CC BY) on a continuous basis. This journal is committed to presenting the latest research discoveries and technological breakthroughs in fundamental theories and models, architectures, and technical methods, thereby boosting the advancement of intelligent computing science and technology, promoting international academic exchange worldwide, and enhancing human well-being as a whole.

Conflicts of Interest

The authors declare that they have no conflict of interest regarding the publication of this article.

References