Special Issue

Explorations in Quantum Computing

Message from the Guest Editors

Exactly twenty years after publication of the first (by then unabridged) textbook on Quantum Computation and Quantum Information written by Michael Nielsen and Isaac Chuang, it is fitting to undertake a broad-based exploration into the field in order to map out about the progress that has been made in the intervening time. It is clear that the subject has developed along many fronts in terms of its algorithmic range, its domains of application, its hardware implementation and its underlying theory. Moreover, after decades of research, recent developments in quantum hardware and software seem to indicate that real-world relevant quantum computations are within reach, thus imposing the need to develop appropriate software toolchains that will bridge the gap between algorithms and physical machines. With this Special Issue we aim at exploring the growing field of Quantum Computing and its expansions to areas such as Models of Computing, Artificial Intelligence, Chemistry, Cryptography, Languages and Compilers, Category theory, Information Theory, Optimisation Algorithms, Quantum Annealing, etc.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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