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Front-line Researchers

- ▶ Seiichiro Tani, Senior Distinguished Researcher, NTT Communication Science Laboratories

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OSS Activities in Era of Internet of Things, Artificial Intelligence, and Software-defined Everything

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Seiichiro Tani, Senior Distinguished Researcher, NTT Communication Science Laboratories

▼Overview

Research toward the development of a practical quantum computer began more than 30 years ago in the 1980s, and it is now entering a new phase. The Ministry of Education, Culture, Sports, Science and Technology in Japan recognizes the significance of this development and has included 3.2 billion yen in its budget request as a development fund for photonics-quantum technology. Senior Distinguished Researcher Seiichiro Tani of NTT Communication Science Laboratories has had many world-first achievements in this field. The quantum computer is attracting attention as a driver of future trends, so we asked him to tell us about the current state of quantum computer research and some research achievements. We also asked him his views on how a researcher should approach the work of research.



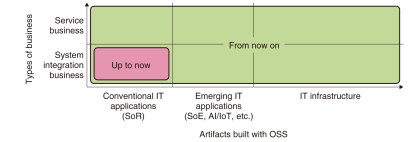
Feature Articles

OSS Activities in Era of Internet of Things, Artificial Intelligence, and Software-defined Everything

NTT's Increased Focus on Open Source Software

▼Abstract

The emergence of new information technology (IT) applications such as artificial intelligence, the Internet of Things, and software-defined infrastructures is stimulating more use of open source software (OSS), and consequently, the skills needed for using OSS are broadening. While legacy IT applications would require skills in using only a few standard OSS packages, these new application areas require the ability to select software modules from many choices and integrate them into a system tailored to a company's or customer's requirements. Such integration activities often require collaboration with OSS communities. Additionally, because these activities incur costs, it is also important to develop business strategies to leverage OSS and gain a rewarding return.



Regular Articles

Electrical Current Generation by Sorting Thermal Noise

▼Abstract

We have achieved the operation of Maxwell's demon with an electrical device, which is a feedback operation based on single-electron motion. Maxwell's demon is related to the lower bound of energy consumption in electrical devices and power generation efficiency in small systems. We therefore anticipate that this achievement will contribute to creating nanoscale energy-efficient electrical devices.

