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Hiromichi Shinohara, Senior Executive Vice President and Head of R&D Strategy Department, NTT

▼Overview

Great expectations are being placed on the NTT Group both inside and outside Japan to provide high-quality and stable network services, ensure a safe and secure network through advanced security measures, and provide a moving user experience and new value. The NTT Group itself is committed to solving social issues and providing new ways of creating value. How will the NTT Group approach these needs in 2018? We asked NTT Senior Executive Vice President Hiromichi Shinohara to tell us about his outlook and aspirations for the NTT Group.



Front-line Researchers

Hiroshi Sawada, Senior Distinguished Researcher, NTT Communication Science Laboratories

▼Overview

Nonnegative matrix factorization (NMF) enables big data such as Internet of Things sensor data to be represented in the form of matrices having only nonnegative values and to be analyzed by using simple mathematical expressions. NMF has found application in many areas including the analysis of audio, image, and text data. Dr. Hiroshi Sawada is a Senior Distinguished Researcher at NTT Communication Science Laboratories known for his research and development efforts in NMF and signal separation technology. We asked him about his current research projects and the mind frame needed by a researcher.



Feature Articles

Research and Development of Life-cycle Maintenance of Telecommunication Infrastructure

Direction of Research and Development of Life-cycle Maintenance

▼Abstract

Various social-infrastructure facilities have been constructed in Japan since the period of the country's rapid economic growth. These facilities are currently aging, and the cost related to their maintenance, management, and renovation has become a serious issue. It is therefore necessary to improve the efficiency of the maintenance and management cycle to reduce this enormous cost and extend the service life of facilities. In this article, we use the term life-cycle maintenance to refer to the entire life cycle of the maintenance and management of telecommunication infrastructure, from maintenance planning to inspection, diagnosis, and repair, reinforcement, and renovation. We introduce the direction of research and development of life-cycle maintenance and present case studies.

Regular Articles

Color Enhancement by Optimizing the Illumination Spectrum

▼Abstract

A method is proposed to enhance color saturation while preserving the color appearance of white by controlling the spectral power distribution (SPD) of illumination. We used a color chart to design the SPD of illumination, which enables the enhancement of several colors concurrently. We experimented with a 16-color LED (light-emitting diode) lighting system as a light source, which can modulate the intensity of each color of light.