NTT Technical Review **4 2024**

April 2024 Vol. 22 No. 4

View from the Top

Akira Okada, Senior Vice President of R&D, Head of NTT Science and Core Technology Laboratory Group

▼Abstract

NTT Science and Core Technology Laboratory Group carries out research and development with three missions in mind: "Conduct research and development on cutting-edge technologies to expand NTT's business domains," "Create new principles and concepts that will revolutionize society," and "Research and develop technologies that are friendly to the global environment and people." We asked Akira Okada, senior vice president of R&D, head of NTT Science and Core Technology Laboratory Group, about the technology strategy of the laboratory group and his mindset as a top manager.

Front-line Researchers

Masaaki Nagata, Senior Distinguished Researcher, NTT Communication Science Laboratories

▼Abstract

Masaaki Nagata, a senior distinguished researcher at NTT Communication Science Laboratories, has been researching natural-language processing and its application, machine translation, for more than 20 years. We asked him about the trends and characteristics of translation using large language models (LLMs) and machine translation using a Japanese-English bilingual patent corpus, which is about to be commercialized. We also elicited his thoughts on the research process and ideas as being a result of encounters.

Feature Articles
Research and Development of Technologies for Nurturing True Humanity

NTT Human Informatics Laboratories: Researching and Developing Technologies That Nurture True Humanity

▼Abstract

Based on the human-centric principle, NTT Human Informatics Laboratories is engaged in research and development related to new forms of co-existence between the real world and cyberworld. In the Feature Articles in this issue, we introduce NTT Human Informatics Laboratories' latest endeavors.
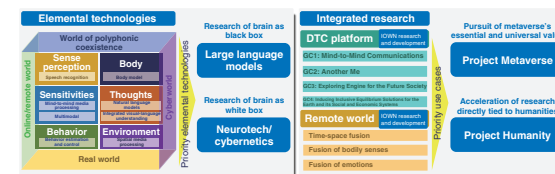
Regular Articles

High-definition AI Inference Technology for Detecting a Wide Range of Objects with One Camera at One Time

▼Abstract

Object detection in high-definition video is required in video artificial intelligence (AI) applications for edge/terminals to detect a wide range of objects with one camera at one time. Although various AI inference schemes for object detection (e.g., You Only Look Once (YOLO)) have been proposed, they have a limitation regarding the input image size, thus need to shrink the input high-definition image into that limited size. This collapses small objects, making them undetectable. This article introduces high-definition AI inference technology we previously proposed for solving this problem, with which multiple object detectors cooperate to detect small and large objects in high-definition video.