

## 2016 C&C Prize Ceremony

On the late autumn afternoon of November 30, 2016, the 2016 C&C Prize Ceremony was held at the ANA InterContinental Hotel in Tokyo with around 110 attendees (**Photo 1**).

The day's program began with a welcoming speech by the President of NEC C&C Foundation, Mr. Kaoru Yano. He announced that the C&C Prize this year was the thirty-second one to be awarded so far and that there were 63 groups and 104 prize recipients.

The speech was followed by the recognition of the 2016 prizes to the Group A and Group B recipients by Dr. Tomonori Aoyama, the chairman of the awards committee. The Group A recipient was Prof. Hideo Ohno, Professor of the Research Institute of Electric Communications, Tohoku University. The award acknowledged his "Pioneering Contributions to the Research and Development of Spintronics Technology". The Group B recipient was Prof. Geoffrey E. Hinton, Emeritus Professor, University of Toronto, and Distinguished Researcher, Google Inc., for "Outstanding Contributions to Neural Network Research and the Pioneering Development of Innovative Deep-learning Technology". Research details and citations were announced and the certificates, plaques and "MOKUROKU" were then presented to the prize recipients by President Kaoru Yano (**Photo 2**). Prof. Hideo Ohno made an acceptance speech to express his pleasure at receiving the award. Prof. Geoffrey E. Hinton was unfortunately unable to attend the ceremony due to an injury, he instead expressed his delight via a video message.

Mr. Hisayoshi Ando, Director-General, Commerce and Information Policy Bureau of the Ministry of

Economy, Trade and Industry (METI) delivered a congratulatory speech to the recipients. Mr. Hisayoshi Ando spoke of the significant advances and the prospects for their achievements that had opened up new technology trends such as IoT, AI and Big Data and brought innovation into our society. He also stated that METI will support the New Energy Development Organization (NEDO) and the National Institute of Advanced Industrial Science and Technology (AIST) for implementing technologies that achieve energy saving, high speed semiconductors and deep neural networks in our future everyday lives. Dr. Ken-ichi Sato, President, The Institute of Electronics, Information and Communication Engineers (IEICE) expressed his gratitude for the research results of these two groups and their continuous efforts to greatly accelerate practical achievements. He expressed his respect for Prof. Hideo Ohno who had contributed innovative efforts in solving the energy consumption issues that ICT faces in the Big Data and IoT era. Prof. Ohno has been delivering various research achievements via the innovative ideas of the semiconductor-based spintronics technology. Dr. Ken-ichi Sato praised Prof. Geoffrey Hinton who through his long involvement of 40 years in machine learning research contributed to its development and was able to spread today's artificial intelligence (AI) movement via the innovative deep-learning technology. The awards presentation then ended.

Acceptance speeches followed and Prof. Hideo Ohno of Group A spoke of his long experience of the



Photo 1 2016 C&C Prize ceremony.



Photo 2 From the right: Prof. Hideo Ohno of Group A recipient and Mr. Kaoru Yano, the President of NEC C&C Foundation.

development of the Spintronics technology that offers a bridge between semiconductors and magnetic materials by using the charge and spin that are significant properties of electrons. He also introduced his achievements made in cooperation with many other researchers and colleagues, starting from physical researches to the development of applications in industrial markets. Finally, he declared that, by using Spintronics, we will be able to implement a paradigm shift for integrated circuits that will enable both low power consumption and high performance ability. He also stated how important academic/industrial collaboration will be in achieving this.

Prof. Geoffrey Hinton of Group B was unfortunately unable to attend the ceremony, however, he explained his research via video, which was projected on screen. In the video, he introduced reasons why the idea of deep-learning, which has been studied for many years, has not been adopted in practical use until quite recent years. He also explained various innovative ideas including the high-speed learning process algorithm using the pre-training process that was developed to achieve practical application.

After showing the video, Dr. Naonori Ueda, NTT Fellow, who maintains a long friendship with Prof. Hinton, introduced Prof. Hinton's practical achievements in the industrial markets. In his speech, recently developed applications in the fields of voice recognition and object recognition were shown. These are the two main fields in which significant innovation has been provided by the deep-learning technology. The various achievements that Prof. Hinton and his group have made in this regard were also introduced.

All of these speeches demonstrated that those key technologies are essential and indispensable for solving the problems of modern society, and both lectures were very timely to the audience.

After the acceptance speeches a cocktail party was held that offered a social atmosphere, in which attendees expressed their congratulations to recipients. Here the attendees could enjoy meeting each other and participating in friendly conversation. The dinner party began with greetings and a toast by Dr. Tatsuo Tomita, President, Information Processing Society of Japan. As the dinner ended, congratulatory speeches were presented by representatives of the guests, and the prize recipient

expressed his thanks for this contribution. The ceremony was closed amidst enthusiastic applause.

The two themes that received prizes on this occasion are both key technologies featuring innovative methods offering the possibility of changing the fundamental structure of the present-day information society. At the same time, these are the themes that applaud the creation of C&C technologies that are expected to be an essential platform in contributing to human life and to the sustainable growth and development of our society.

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The details about this paper can be seen at the following.

**Related URL:**

**For more information about the recipients of the C&C Prizes please visit the NEC C&C Foundation homepage.**

[http://www.candc.or.jp/en/2016/2016\\_prize\\_cc.html](http://www.candc.or.jp/en/2016/2016_prize_cc.html)

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## NEC C&C Foundation

The Foundation presents prizes and grants to researchers in the fields of computers, telecommunications, electronics devices and integrated technologies of these fields (C&C). Through such actions, we aim to develop further advancement of the electronics industry worldwide and to contribute to economic progress and to an improved social life. The foundation was established in March, 1985 and it is managed by a fund donated by NEC Corporation.

In order to help in achieving our aims, the Foundation promotes awards and grants.

Besides the C&C Prizes, the Foundation presents the award, "Outstanding Paper Award for Young C&C Researchers", for outstanding paper(s) (three papers at most per annual) to be announced at an international conference held overseas with the support of a grant from the Foundation. Each recipient is also given a cash prize.

The Foundation also provides two kinds of grants. One of these aims to help with conference attendance expenses for the researchers of graduate schools who reside in Japan and to support presentation of their papers at international conferences. The other one is to help with the research expenses of non-Japanese researchers, who are engaged in research at graduate schools.

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