

FEATURE

NICT's Multi-directional Diversity

Roundtable

**"Respecting Individuality, Turning
Diversity into Strength"**

That's What Creates Innovation

NICT Members Promoting Diversity Speak Up!



NICT DE&I



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Roundtable

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That's What Creates Innovation**
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NICT's Multi-directional Diversity

Roundtable

"Respecting Individuality, Turning Diversity into Strength" That's What Creates Innovation

NICT Members Promoting Diversity Speak Up!

Diversity, Equity & Inclusion (DE&I)—An environment that respects these values draws out each individual's potential and drives new innovation. This is indispensable for research institutions.

In April 2023, NICT established the Diversity Promotion Office. Members have come together from various departments across NICT and are striving to promote diversity. This time, we asked five people engaged in diversity promotion activities to freely share their thoughts on the current state and future of diversity at NICT.



ITAYA Satoko

Director of Diversity Promotion Office

TOMARU Masako

Assistant Chief
Diversity Promotion Office

Ved Prasad KAFLE

Research Manager
Network Architecture Laboratory,
Network Research Institute

NAGASHIMA Hideaki

Fixed Term Administrative Specialist,
Contract Office, Financial Affairs
Department

NAKAUE Yoshimasa

Chief
General Planning Office, Universal
Communication Research Institute

ITAYA Thank you all for gathering today. I would like to ask everyone to provide a brief self-introduction. I'll begin with myself. After graduate school, I worked at a private-sector company before coming to NICT, and this is my 11th year here. I conduct research and development on wireless communication technology at the Network Research Institute, and I also became Director of the Diversity Promotion Office this April. I wanted to work at NICT because I was attracted to the fact that there are researchers from a variety of fields and there are many collaborative research projects with external organizations. With that, please now take turns introducing yourselves.

Self-introductions by Diversity Promotion Office Members

NAKAUE I came to NICT in April 2023 after working at another public institution. After working in the Settlement Group at the Accounting Office of the Financial Affairs Department, I currently work in the Management Group of the General Planning Office at the Universal Communication Research Institute in Keihanna Science City (Seika Town, Kyoto Prefecture). What attracted me to NICT was that it covers a wide range of fields, centered on information and communications. The fact that the staff and researchers are very approachable is also appealing.

KAFLE I belong to the Network Architecture Laboratory at the Network Research Institute. I joined NICT in October 2006, so this is my 19th year. I chose NICT because I liked that it handles a wide range of research themes from basic research to applied research.

NAGASHIMA I work on construction contracts at the Second Contract Group of the Contract Office in the Financial Affairs Department. I started using a wheelchair at age 23 because of a traffic accident. I returned to work at 26, joining the Tokyo Metropolitan Government for 28 years, before transferring to NICT 10 years ago. It was a recommendation from YOSHIDA Shinichi (former NICT employee, leading figure in para table tennis and Paralympic athlete) that prompted me to



change career. He and I are teammates on the same para table tennis team. I was aiming to compete in the Tokyo Paralympics and I needed time for training and overseas competitions, so I decided to change jobs to NICT, which would give me a more flexible work schedule. (Nagashima competed at the Seoul Paralympics.)

TOMARU I joined NICT in 2016 and initially, I was in the Public Relations Department. What brought me to NICT was an Open House I visited with my child. I learned that NICT provides Japan Standard Time and conducts research on various social infrastructure, and I thought, given the opportunity, I would enjoy working in such an organization. Several years later, I learned about a job opening and applied. When I went to the Open House, I never imagined I would end up working here, so I feel like fate brought me to NICT.

ITAYA Thank you for the introductions. It's clear that each of you had a unique reason for choosing to work at NICT. Next, please share if there was anything that surprised you, troubled you, confused you, or made you happy about working at NICT.

What Surprised Us about NICT

NAKAUE What first surprised me was the many different positions and perspectives here. There are, for example, also foreign researchers and individuals with physical disabilities. I was impressed by the diversity in work styles, including general staff, managerial positions, and researchers.

Another surprising thing I noticed was that everyone at NICT has a very open-minded approach and a strong willingness to embrace diverse perspectives. After joining, I realized that this is truly part of NICT's culture.

ITAYA I see, so it's a workplace where everyone can freely express their opinions and communication flows openly. How about you, Kafle-san?

KAFLE As others have mentioned, what surprised me after joining NICT was that a very wide range of activities are conducted. In terms of public services, there's our provision of Japan Standard Time and the space weather forecast, and research themes range from basic theoretical research to application-oriented technical research through external contracts. What I particularly liked was that within the research scope decided by my laboratory, I can create my own research plans and proceed at my own pace.

ITAYA I see. So, it's good that you can take the initiative in your research and work at your own pace.

NAGASHIMA In my case, since my previous job was as a public servant, in terms of work, both the workload and level were almost the same as what I did at the Tokyo Metropolitan Government, so there wasn't much surprise regarding the work itself.

ITAYA Has table tennis practice become easier?

NAGASHIMA Yes, I have much more flexibility now.

ITAYA How about you, Tomaru-san?

TOMARU I worked as a fixed term employee in the Public Relations Department. What surprised me was that even with my employment status, I was entrusted with tasks with real responsibilities. I also had the opportunity to make proposals, which gave

me great satisfaction.

Also, one valuable experience was being able to use NEXT, which is a fund directly managed by the NICT President, to launch an NICT-style Diversity Promotion Project involving six female volunteers from across the organization. Having such a fund enabled me to take on new challenges while continuing my main duties.

Background behind Establishing the Diversity Promotion Office

ITAYA At NICT, we are creating an environment where diverse human resources can thrive, whatever their age, gender, nationality, disability, or career background. I'd like to talk a bit about the background behind establishing the Diversity Promotion Office, which was set up as part of this effort. As Tomaru-san explained earlier, in FY2022, the NICT-style Diversity Promotion Proj-

ect was launched based on a proposal from six female staff members. This project was launched using NEXT, a fund that is directly managed by the President and supports proposals for various workplace initiatives, including solving organizational challenges. The project aimed not only to support women's advancement but also to advance diversity through a cross-organizational approach. Around that time, President Tokuda was also directly hearing people calling for women's advancement and diversity promotion at town meetings held around the country, and he realized the difficulty of making progress with only a top-down approach. The proposal for the NICT-style Diversity Promotion Project included a wide range of concrete and creative ideas. Recognizing the importance of making this initiative sustainable rather than a one-time effort, the President decided to promote it continuously at the organizational level. As a result, the Diversity Promotion Office was established in FY2023 through both top-down and bottom-up approaches. It was established as a temporary organization in FY2023 but was officially designated as a formal organization from FY2024.

Now, I'd like Tomaru-san to introduce the initiatives conducted by the Diversity Promotion Office so far.

■ Initiatives by Diversity Promotion Office Members

TOMARU In FY2024, we created a new committee called the Diversity Promotion Committee. This committee serves as a forum where we all discuss and decide the basic policy for how NICT as a whole will advance diversity. Based on the policy decided by the committee, we are advancing specific initiatives through the Diversity Promotion Project established in the Diversity Promotion Office, in cooperation with various NICT departments.

To deepen each staff member's understanding of diversity promotion, we conduct events, training, awareness surveys, and reviews of facilities such as restrooms. We also engage in exchanges and cooperation with other organizations and conduct external communication about our activities. In

addition, we are actively promoting diversity from multiple perspectives, including activities to develop next-generation talent in science, technology, engineering and mathematics (STEM).

ITAYA Nakaue-san, what specific activities have you been involved in?

NAKAUE Last fiscal year, I managed a project team to create a logo for diversity promotion activities and worked on the logo creation. Since it was my first time working on a logo design, I consulted with the team and we decided to invite design submissions from the NICT staff. We received 17 submissions and we held a staff vote on those designs. After making final adjustments to the selected design, we were able to officially unveil the logo in April 2025.

KAFLE My assignment is the Gender Equality Plan (GEP), and I first conducted a literature review on the initiatives in various European countries. Europe is advanced in this regard, and GEP requirements are clearly stated in documents. When conducting scientific research on GEP, GEP requirements are clearly indicated and researchers need to fully consider and incorporate them. Unfortunately, Japan is lagging behind in this area. I'm studying the initiatives in other countries as well.

Additionally, we held diversity lunches at each location: Keihanna, Kobe, and headquarters. At the diversity lunch for foreign nationals held at headquarters, we exchanged opinions about people's concerns and requests for improving the working environment for foreign researchers.

ITAYA Thank you. This relates to how NICT communicates its diversity initiatives externally, so I think it's a very important point. Nagashima-san, how about you next?

NAGASHIMA I was in charge of two initiatives: creating a supportive environment for promoting diversity and conducting a survey on workplace comfort at NICT. As part of efforts to improve the working environment,

I worked on several initiatives at the headquarters, installing ostomy-compatible flush toilets, adding small lockers in women's restrooms, updating signage for multipurpose toilets, enhancing the facilities and reviewing the operation of the women's rest area, and revising the usage rules for the meditation room. To help create a workplace where everyone can thrive at NICT, we conducted a follow-up awareness survey to better understand staff perceptions and the current state of diversity, continuing the efforts we made in FY2023. In FY2023, we conducted a similar survey within NICT, using as a reference the Cabinet Office's unconscious bias awareness survey which was carried out by the Gender Equality Bureau the previous year. When we asked people about their expectations and requests for the Diversity Promotion Office, many emphasized the importance of approaching diversity not only from a gender perspective but also from a broader range of viewpoints. In FY2024, we conducted an awareness survey that took a broad range of perspectives into account, including life stages such as childcare and caregiving, as well as gender, nationality, disability, and sexual minorities. I think it's important to consider how to reflect the results of such surveys in future measures. In designing the questionnaire, we engaged in thorough team discussions while being mindful of the respondents' perspectives and circumstances.

ITAYA Yes, it's important to consider how we make use of the findings. Next, Tomaru-san, please.

TOMARU We conduct diversity training for staff and hold an event called NICT Diversity Day once a year for internal communication purposes. The event for this fiscal year is scheduled to take place next January. As I briefly mentioned, one of the challenges in the field of research and development is the very low number of female researchers in science and engineering. In light of this, we are actively working to nurture the next generation of STEM talent as part of our diversity promotion efforts. For example, we held a career talk event to get female high

school students interested in science fields and researchers' work, hoping that this might broaden their future career choices. We had successful female researchers attend and share their actual experiences. Through these activities, we hope to help make the career path of a female researcher feel more accessible and relatable.

I hope our society will become one where anyone who wants to pursue a career in science and technology can do so, whatever their gender.

■ The Systems We Want

ITAYA As was mentioned earlier, the Diversity Promotion Office is committed to continuing to develop female and younger talent. Please share your thoughts, such as something you felt or learned through diversity-related activities, or ideas for new systems or initiatives you think would be helpful.

NAKAUE I believe we have well-developed systems in place, but there is still a lack of awareness, so I think we need to actively disseminate information. Also, since diversity-related activities tend to shift in focus quite quickly, from year to year or even semi-annually, it's essential to be responsive to these changing trends and to implement initiatives that keep up with staff feedback.

KAFLE A major barrier in advancing diversity is that administrative procedures within the organization are too complicated for foreign staff. Administrative procedures regarding salary, pension, taxes, and deductions are especially difficult to understand. I would like to propose establishing a dedicated consultation service to support foreign employees with administrative procedures.

NAGASHIMA In terms of improving working environments to promote diversity, we are trying to expand the initiatives we implemented at headquarters last fiscal year to our regional offices as well.

TOMARU What I always think when I'm conducting diversity promotion activities is

that "there is no correct answer." That's precisely why, together with everyone working at NICT, I hope to create a workplace environment where each individual can fully realize their potential.

ITAYA Lastly, is there anything anyone would like to share or say before we wrap up?

KAFLE Regarding the earlier point about the low number of female researchers, one possible approach could be to visit high schools in Koganei City and neighboring areas to explain that NICT is expanding opportunities for female researchers, and to encourage students to consider pursuing science and engineering courses at university.

ITAYA Good idea. I also wonder if separating students into science or humanities streams is even necessary in the first place. Your gender doesn't make a difference to research content, and I think incorporating cross-domain initiatives will become an important challenge going forward.

NAKAUE In the Keihanna area, where I work, there are many research institutes run by various companies and organizations around the NICT research center. People

from diverse backgrounds work there. Being in such an environment, I feel that, ideally, we should not confine ourselves to only the perspectives inside NICT, but should broaden our horizons by interacting with other organizations and deepen the diversity within NICT.

TOMARU In relation to the issue of the underrepresentation of female researchers, it is still common for some to hold the stereotype that "women are better suited for the humanities." I believe it is crucial to challenge and change such perceptions. As Nakaue-san pointed out, I want us to value external collaboration and engagement.

ITAYA There is still a widespread assumption in society that women are not good at science-related subjects. At the Diversity Promotion Office, we hope to continue sharing information in a way that makes all job types at NICT, including those of female researchers and staff, feel approachable and relatable. Thank you very much for your time today.

Creation of the Diversity Promotion Logo



At the NICT Diversity Promotion Office, we created the NICT DE&I logo to facilitate external communication and raise awareness within the organization.

From July to August 2024, NICT invited all employees to submit design ideas. 17 wide-ranging designs that expressed diversity in free and creative ways were received. One of these was chosen as the official logo after discussions by the Diversity Promotion Committee.

This logo takes the letter "N" from NICT and reshapes it into the symbol of infinity. It expresses the idea that potential is limitless, embodying the theme of NICT's diversity promotion activities: "Diversity is Potential."



Exhibit at Maker Faire Bay Area 2016

OHORI Fumiko

Senior Research Engineer
Wireless Systems Laboratory
Wireless Networks Research Center
Network Research Institute

● Biography

1985 Born in Aizu, Fukushima Prefecture
2008 Computer Science and Engineering, University of Aizu
2010 Completed Master's Program in the Graduate School of Computer Science and Engineering, University of Aizu
2010 Engaged in network-related research and development at Kozo Keikaku Engineering Inc.
2017 Seconded to NICT and engaged in research on stabilizing wireless communication in manufacturing systems
2020 Joined NICT
2024 Completed Doctoral Program and earned a Ph.D. degree from the Graduate School of Information Science and Technology, University of Osaka
2025 Current position

Expanding Research Possibilities through Diverse Connections

Focus on people

Q&As

● What kind of work and research were you doing at NICT before your current position?

Before taking on my current position, I supported research in areas such as wired and wireless network simulation and construction, and application development, which also gave me opportunities to interact with researchers at NICT. Furthermore, during my secondment to NICT from 2017 to 2020, I found myself needing to engage in in-depth discussions with our international collaborators, as a fellow researcher, which made me realize the importance of further developing my own expertise.

● What is your current job description at NICT?

I am part of the Flexible Society Project (FSPJ), which is focused on fields such as manufacturing, logistics, healthcare, infrastructure, and data-trading, where the adoption of wireless technologies is advancing. In these fields, we are working to ensure stable wireless communication, while supporting the coexistence of a wide variety of wireless systems. Having been involved in this project for eight years, I am strongly aware that the use of wireless communication is expanding in these sectors and that there is a growing expectation for us to implement our research outcomes in society.

● Which aspects of your past professional or research experience have proven most valuable in your current work?

To improve my expertise, I attended Osaka University Graduate School as a working doctoral student. With support from many people, I learned the right approach to conducting research and developed the "intuition" required to steadily advance research step by step without losing sight of the crucial points. While I don't think a degree is necessarily required to pursue research at NICT, going through the process of obtaining one has given me a strong sense of purpose, which now serves as the foundation of my current work.

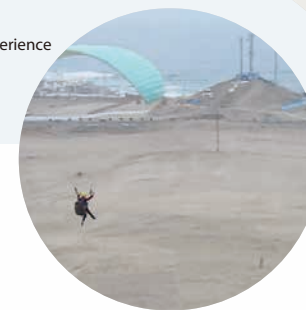
● In what situations do you feel the benefits of working at NICT?

Beyond 5G Technology R&D in the Manufacturing Sector, a project that I'm involved in, gives me opportunities to work not only with other members of NICT, but also with collaborating researchers, domestic and international research partners, and on-site personnel. Communication is active and dynamic, regardless of affiliation, job title, age, or nationality. NICT fosters an environment conducive to collaborative research across boundaries, and I find it deeply rewarding to be continuously engaged in projects that deliver meaningful outcomes to society through active engagement among a diverse group of people.



Joint wireless communication experiment with German researchers utilizing a local 5G base station installed at the Demag Cranes & Components GmbH factory in Germany

Paragliding experience in Jicamarca



Septi Perwitasari

Senior Researcher
Space Environment Laboratory
Radio Propagation Research Center
Radio Research Institute
Ph. D. (Geophysics)

● Biography

1986 Born in Klaten city, Indonesia
2008 Bachelor Course in Physics, Gadjah Mada University, Indonesia
2011-2016 Master and Doctoral Course in Geophysics, Tohoku University, Japan
2009-2019 Researcher, National Institute of Aeronautics and Space, Indonesia
2017-2020 Postdoctoral Fellow, National Institute of Polar Research, Japan
2020 Joined NICT
2024 Current Position

● AWARDS

2023 SGPESS Outstanding Paper Award

Balancing Acts: Working Mothers in Today's Diverse Workplaces

Focus on people

Q&As

● What is your job or research before you join NICT?

After earning my bachelor's degree in 2009, I began my career at the National Institute of Aeronautics and Space of Indonesia (LAPAN). In 2011, I was awarded the opportunity to pursue a Ph.D. in Geophysics at Tohoku University in Japan, where I studied until 2016. During this time, I also completed a two-month research internship at the Jicamarca Observatory in Peru, which broadened my international research experience. Upon returning to Indonesia, I resumed my role as a researcher at LAPAN. In 2017, I was accepted as a postdoctoral fellow at the National Institute of Polar Research (NIPR), where I focused on middle atmospheric dynamics. This marked a significant shift in my research direction and eventually led to my official resignation from LAPAN in 2019. In 2020, I joined NICT as a fixed-term researcher in the field of space weather. My dedication to the field was recognized in 2024 when I was promoted to the position of senior researcher.

● Current job at NICT

I am the Principal Investigator of the Southeast Asia Low-latitude Ionospheric Network (SEALION), where I am primarily responsible for the development of a real-time alert and forecasting system for Equatorial Plasma Bubbles (EPBs). EPBs are a significant source of signal degradation in Global Navigation Satellite Systems (GNSS), often resulting in positioning errors that can adversely impact navigation and communication systems. To ensure the continuity and reliability of observational data, I conduct regular maintenance visits to SEALION stations located throughout Southeast Asia. In addition to my work with SEALION, I am also a member of the space weather forecasting team, with specific responsibility for forecasting ionospheric conditions over Japan.

● What are the important knowledges/experiences that is useful for your current research?

In addition to technical skills such as data analysis and programming, I find that my international research experience has been extremely valuable, particularly as I now collaborate with various institutes across different countries. Moreover, the experience I gained during my internship in Jicamarca has proven to be especially useful for conducting fieldwork in remote areas, where I am often responsible for maintaining SEALION instruments.

● As a person from outside Japan, what do you feel good point when you work at NICT?

NICT offers a research experience with cutting-edge technologies, but what I find most compelling is its commitment to enhancing work-life balance. This creates an ideal research environment for working mothers like me. Additionally, NICT's Diversity Office has been incredibly supportive of foreigners, cultivating a diverse and welcoming workplace.



EPB Alert System



TAKIZAWA Osamu

Director of Radio Wave Management
and Manufacturing Office/
Senior Expert, NICT Knowledge Hub
Ph.D. (Engineering)



Study and Work History

1962 Born in Kyoto City
1987 Completed Master's Program in Electrical Engineering, Graduate School of Engineering, Faculty of Engineering, Kyoto University
Same year Joined the Radio Research Laboratory, Ministry of Posts and Telecommunications (now NICT)
1989 Kansai Branch (now Kobe Frontier Research Center)
1997 Information Promotion Office (now DX Design Office), followed by secondment to the Ministry of Posts and Telecommunications (now Ministry of Internal Affairs and Communications)
2000 Conducted research on crisis management ICT in successive cybersecurity departments including the Information and Communications Department
2011 Use of intellectual property and technology transfer responsibilities
2016 Director of Public Relations Planning Office (first)
2020 Current position
Since 2012 Concurrently serving as Visiting Professor at Tokyo Gakugei University

AWARDS

2006 SICE System Integration Division Excellent Presentation Award
1991 IEICE Young Researcher's Award

I Want to Pass Down NICT's History
over the Next 100 Years

Focus on people

Q&As

What kind of work and research did you do at NICT before your current position?

I joined during the bubble economy, when companies were thriving, and science students who aspired to become government researchers at that time were considered eccentric. When I started out, I was part of the launch of a research laboratory focused on intelligent information processing for spoken language, and I became the first researcher at our institute to have papers published in both the Journal of the Japanese Society for Artificial Intelligence and the Journal of Natural Language Processing. After obtaining my doctoral degree from Osaka University with a thesis on "A Computational Processing of Puns," I worked at the information systems department in its early days and later served as the deputy director at the Ministry of Posts and Telecommunications, among other positions. Then, I began research on using radio-frequency identification (RFID), an IoT device that was gathering interest, for information storage for disaster sites. Back then, the system (upper center photo) was quite bulky, and you had to carry a heavy RFID reader/writer and battery on your back while holding up an antenna.

After that, I moved between intellectual property and public relations.

What are your current duties at NICT?

I manage application procedures for radio stations and high-frequency equipment within NICT, support prototype development, and conduct research on NICT's long history.

What aspects of your career to date are useful for your current work?

I obtained my First-Class Technical Radio Operator certification immediately after joining, which was a required subject for research staff at the Radio Research Laboratory, and that has been useful in my current work on radio wave management 30 years later. Additionally, having research experience myself and gaining familiarity with all fields of NICT through my work in information systems, intellectual property, and public relations have been extremely helpful for my current work supporting prototype development and conducting historical research.

As someone with a long career at NICT who has been involved also in various non-research duties in different departments, where do you feel NICT's strengths lie?

At the Radio Research Laboratory, it was not uncommon for entry-level public servants hired with only a high school diploma to later earn a Ph.D. Even my supervisor began as a high school graduate and went on to earn a Ph.D. I believe that NICT's culture of supporting the long-term development of talent produces "professional researchers" who can flexibly adapt their expertise to the changing times and deliver results. Indeed, I myself came up through such an environment. That's why I find it admirable that NICT has a hiring system that nurtures young people who are still blank slates and develops them into researchers.

At the Radio Research Laboratory, where research on radio wave and wireless was mainstream, I was always working in minor fields. After the Communications Research Laboratory transformed itself into NICT, previously niche fields developed into major research areas such as universal communication and cybersecurity. That's why I believe organizations should value those who are in the minority or are a bit unconventional. The historical research on NICT that I'm currently working on is probably also an unglamorous, unconventional task that few others would take on. The depth of NICT, which has allowed someone like me to work with joy for nearly 40 years, is NICT's true strength.



Research materials from approximately 100 years ago in NICT's possession

Maintenance operation of safety flag
(High-altitude work at 18m high)



MATSUMOTO Masaya

Senior Research Engineer
Advanced ICT Device Laboratory,
Network Research Institute

Biography

1978 Born. Lived in Nakano Ward, Tokyo from elementary school
2002 Engaged in IT personnel outsourcing/dispatch services (last position: Sales and HR Department Manager)
2008 Engaged in maintenance operations as an infrastructure engineer at an airport (last position: Deputy Section Chief)
2022 Joined NICT
2025 Graduated from the Department of Commerce, College of Commerce, Nihon University
2025 Current Position

Every Cloud has a Silver Lining!
Effort is Never Wasted!

Focus on people

Q&As

What kind of work did you do before joining NICT?

I worked for 6 years in recruitment and human resources at an outsourcing company specializing in IT personnel, and for 14 years as an infrastructure engineer at an airport.

What are your current duties at NICT?

I am responsible for the infrastructure portion of the clean room operated by the lab. I work hard to realize a safe and secure lab, including serving as part of the ISO 14001 (environmental management systems) secretariat, and optimizing chemical substance management and protective equipment usage. The lab expansion work we carried out last year left a strong impression on me, as it allowed me to fully apply my engineering experience, especially in areas such as energy saving, redundancy of critical equipment, and safety measures.

What aspects of your past work history and career are useful for your current work?

At the IT company, I gained comprehensive administrative skills and IT knowledge. While working at the airport, on-time aircraft operations and zero accidents were absolute imperatives. At the time, it took everything I had just to complete the tasks before me, but I am now applying all my experiences at NICT. The IT knowledge I learned and the administrative skills I developed at the IT company have been useful for improving efficiency and speeding up tasks in lab operations. Meanwhile, when I worked at the airport, I rigorously investigated every factor and every element to ensure zero accidents, and implemented both hard and soft security measures, while always keeping in mind that "humans make mistakes," and this experience has been invaluable in ensuring the safe and secure operation of the lab.

Having transitioned from a different industry, where do you feel NICT's strengths lie?

Cutting-edge research aimed at challenging goals that have never previously been achieved feels similar to an athlete seeking to constantly push their own limits. Both involve cultivating a spirit of continuously challenging yourself and seriously addressing any and all issues, regardless of their scale. I also enrolled in university and took on the challenge of balancing study and work. With the support of my colleagues at NICT, I was able to obtain my degree. Every cloud has a silver lining. If you focus on overcoming each challenge before you, without letting yourself get too high or too low, your efforts will surely not be wasted. I am convinced that our continuous efforts to push the limits of knowledge are precisely what allows us to be strict with ourselves and kind to others.



Checking the safety of a draft hood used for handling chemical substances



Creating a Barrier-Free Environment for Enjoying Films and Video Content

Focus on
technology

NICT provides grants for projects that utilize information and communication technology for people with physical disabilities. This grant program, which began in FY2001, has provided approximately 1.37 billion yen in grants to a total of 168 projects to date (including grants decided for FY2025).

This article introduces the “Cloud-based Information Accessibility Service for Films, Video Content, and Performing Arts,” a subsidy project that received the Prime Minister's Award for Excellence for the Promotion of Barrier-Free Universal Design in FY2023.

● Film and Theater-Viewing Opportunities for People with Audiovisual Disabilities!!

Video content such as films and anime can be enjoyed on large screens with immersive sound, enriching people's lives. However, foreign films often lack sound-related information in their translated subtitles, and Japanese films or anime often don't even have Japanese subtitles, making it difficult for people with hearing impairments to enjoy them.

This project aims to enable people with visual and hearing impairments to enjoy films by creating subtitles and audio guides during film production and developing systems for displaying information on smart glasses (Subtitle Guide via Smart Glasses) or conveying visual information through audio on smartphones (Audio Guide via Smartphone). It also aims to lay the groundwork for making these services available at all cinemas nationwide. Data such as subtitles and audio guides are archived so they can be used across all media, including broadcast, packaged media (DVD/Blu-ray), and streaming. Besides cinemas, the project also offers a smartphone application (UD Live) that can be used for performing arts.

● Aiming to Expand Use beyond Japan

These services have been applied to approximately 90% of major Japanese film productions. In recent years, dubbed screenings of foreign films have also become more common in Japan, and because these services



TOKOYODA Ryo

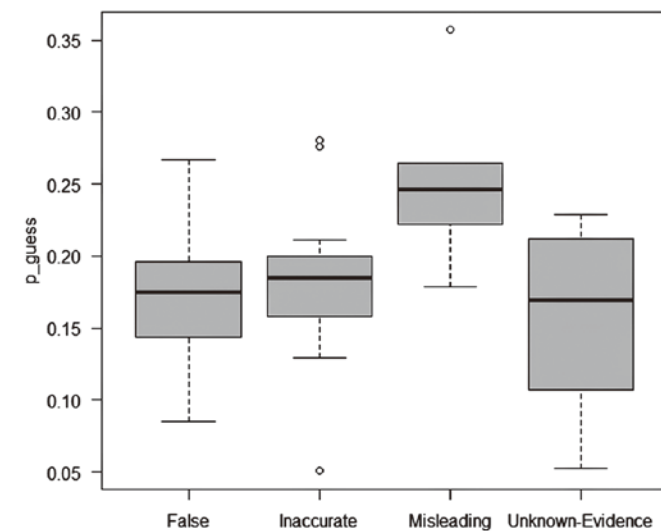
President
NPO Media Access Support Center

● History of Grant Recipient Companies

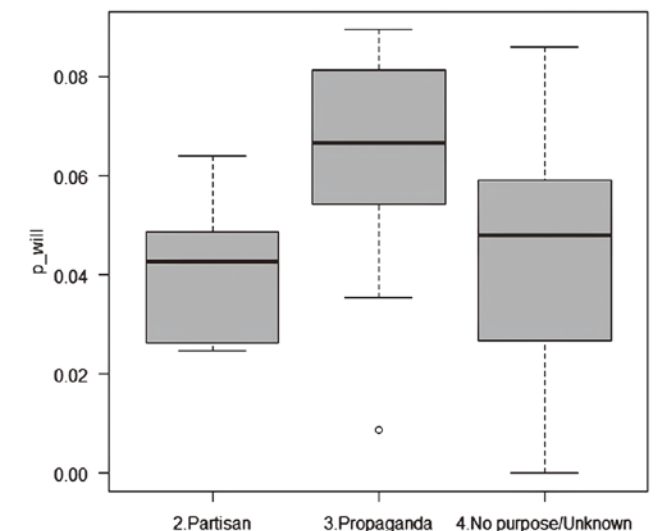
2009	Establishment
2016	Began providing “Subtitle Guide via Smart Glasses” and “Audio Guide via Smartphone”
2020	Launched subtitle-equipped smart glasses rental service at 85 cinemas nationwide
2023	Received Prime Minister's Award for Excellence for the Promotion of Barrier Free Universal Design

support multiple languages, their use is expected to expand further, enabling people with visual and hearing impairments domestically and globally to enjoy all kinds of films, both Japanese and international.

The public call for applications for the FY2026 Barrier-Free Information Grant Program is scheduled to begin around mid-January 2026, and the application period is expected to last for two months.
For details, please visit the “Information Portal for Barrier-Free Information” <https://www.nict.go.jp/info-barrierfree/> (only available in Japanese).



Q1: What rating does the fact-checking site assign to the news?



Q5: What is the purpose of the false news?

Balancing Freedom and Safety on Social Media

Focus on
technology

● Detection of Misinformation and Disinformation Focusing on “Modality”

I conduct basic research on identifying “highly harmful and easily shareable misinformation and disinformation” on social media. Conventional detection methods rely on diffusion patterns and topics dependent on specific keywords. However, these struggle to address a wide range of topics or detect information at the early stages of dissemination. Therefore, we focus on “modality” contained in the text. Modality refers to auxiliary verbs and adverbs that express the sender's psychological attitude, such as “probably” or “will.” These are common across topics and can be identified immediately upon dissemination, giving them the potential to solve conventional challenges.

● Providing Readers with Multifaceted Indicators

Modality-based detection of misinformation and disinformation does not involve determining factual accuracy. Instead, it focuses on the type and degree of the sender's psychological attitude, which is believed to carry a lower risk of provoking conflict compared to conventional detection methods. While determining factual accuracy is critically important for forming objective evidence, it tends to reinforce binary conflict, such as good versus evil. In contrast, the proposed method incorporates multifaceted indicators such as the likelihood of causing misunderstanding and the degree of agitation. By presenting these to readers, it encourages thoughtful reflection without rejecting their perspectives.

● Urgent Need for Implementation in Society

In Japan, every time a disaster occurs, there are confirmed cases of false rescue requests and information encouraging the exclusion of foreigners. During election periods, there are confirmed cases of misinformation and disinformation related to political topics, with notable distortions of facts and intensified conflicts of opinion between individuals. Given the heightened tensions around misinformation and disinformation, there is an urgent need to implement the proposed technology in society.



MATSUDA Misato

Researcher
Cybersecurity Laboratory,
Cybersecurity Research Institute

● Biography

- 2023 Completed graduate program in Computer Science, Graduate School of Science and Engineering, Chuo University
- 2023 Joined NICT
- Enrolled in doctoral program in Information Environment, Graduate School of Environment and Information Sciences, Yokohama National University
- 2025 Current position

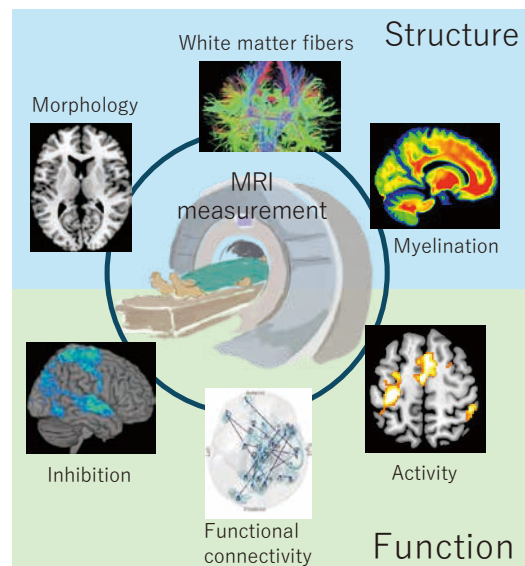
● AWARDS

- 2023 CSS2023 Encouragement Award, “Typification and Characteristics Analysis of Posts Leading to Online Fraud and Crime on Social Media”
- 2023 ISS Square Award, FY2022 ISS Square Symposium, “Fakenews Detection Based on Linguistic Modality”

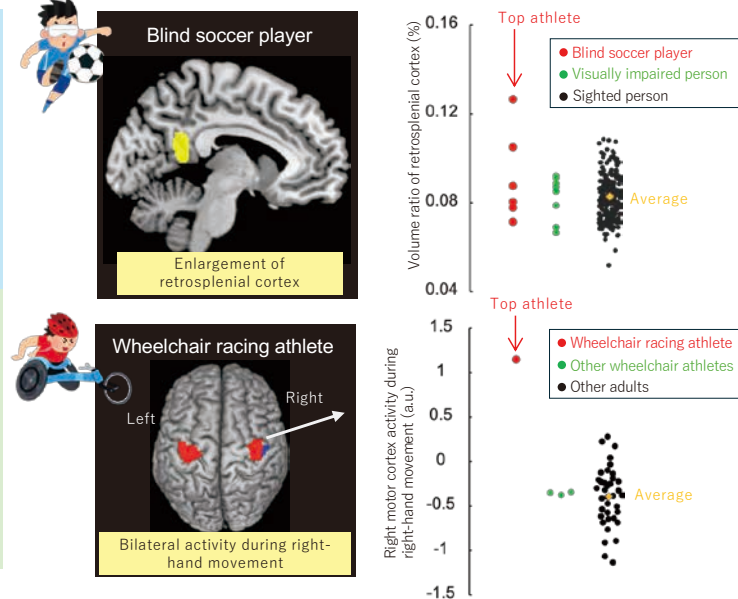
● Preventing Harm from Malicious Content

The difficulty in addressing misinformation and disinformation lies in balancing freedom of expression and thought with safety. Determining who should judge the harmfulness of information and by what standards is an ethically complex issue, and it is difficult to reach a definitive conclusion. Nevertheless, a minimum safety net is essential for people to be able to enjoy social media in a safe and secure way. Therefore, I am advancing research to develop functions that prevent harm from malicious content, with the aim of contributing to a balance between freedom and safety.

Structural and functional features of brain revealed by MRI measurement



Succeeded in visualization of individual brain characteristics of World top-level athletes



A Society that Harnesses Individuality, Enabled by Brain Characteristic Visualization Technologies

Focus on technology

Measuring Brain Characteristics with MRI

People's personalities, ways of thinking, and preferences are infinitely diverse. This diversity stems from the fact that each person's brain structure and function differ. My research focuses on visualizing individual brain characteristics through magnetic resonance imaging (MRI), a key technology in human brain information and communication. In particular, my recent work has centered on the brain's inhibitory mechanism, which is responsible for suppressing irrelevant information, and the development of quantification methods.

Elucidating individual brain characteristics requires the comparison of extensive sets of data that have been collected uniformly under consistent conditions. While this is time-consuming and labor-intensive work, it is crucial for understanding brain characteristics, and I am committed to advancing it steadily and patiently.

Discovering Strengths and Potential from Brain Characteristics

In recent years, we have successfully visualized individual brain characteristics in world-class athletes. For example, in a blind soccer player, we found that the gray matter of the retrosplenial cortex, which is associated with integrating spatial and bodily information, is approximately 1.5 times larger than the average in sighted individuals. In a wheelchair racing athlete, we found that the inhibition between the left and right motor cortices is weak, resulting in synchronized activity in both motor areas. Understanding the characteristics of the brain can lead to the discovery of strengths and new possibilities. I believe that when individuals' diverse abilities are properly understood and utilized in society, it can contribute to the realization of a society rooted in diversity and inclusion.

Visualizing Individual Brain Characteristics

The technology for visualizing individual brain characteristics is already being used in some medical settings. For example, there are now services that estimate the risk of developing dementia by using MRI to measure the volume of the hippocampus, which is associated with memory, and



MORITA Tomoyo

Senior Researcher
Brain Function Analysis and Imaging Laboratory,
Center for Information and Neural Networks,
Advanced ICT Research Institute

Biography

- 1975 Born in Hyogo Prefecture
- 2003 Completed doctoral program at Graduate School of Human and Environmental Studies, Faculty of Integrated Human Studies, Kyoto University
- 2009 Project Assistant Professor, National Institute for Physiological Sciences, National Institutes of Natural Sciences
- 2013 Specially Appointed Associate Professor (Lecturer), Osaka University
- 2019 Specially Appointed Associate Professor, Osaka University
- 2021 Joined NICT

comparing it to the average. Looking ahead, this technology has the potential to expand into fields such as education and welfare, making it more widely beneficial to society.

A Society that Harnesses Individuality, Enabled by Brain Activity Measurement

This technology offers people the possibility to discover personal traits and abilities that they themselves may not have been aware of. Just as blood tests are becoming a common way to understand one's physical constitution and health risks, if understanding the brain's condition and characteristics also becomes commonplace, it could lead to a society where everyone can thrive by making the most of their individuality.

TOPICS



Initiatives for STEM Talent Development

Diversity Promotion Office

One major challenge in the field of research and development is the extremely low number of female researchers in science and engineering. In response to this situation, NICT's Diversity Promotion Office is actively working to nurture the next generation of science, technology, engineering and mathematics (STEM) talent as part of its diversity initiatives.

At the NICT Open House 2024 held in June 2024, we invited high school students from three nearby schools, including a Super Science High School, and conducted a session titled "High School Students Shaping the Future × Researchers in ICT." High school students made presentations grounded in the identification of problems, and discussions with researchers were held based on those presentations. Opinions were exchanged on practical issues such as system improvement, operation and management, and security, providing the students with a valuable opportunity to

experience the connection between research activities and social implementation (Photo 1).

In August of the same year, at the Fukui Girls Future Tech Leaders training in the greater Tokyo area organized by the Fukui Prefectural Board of Education, we held a Career Talk Event for female high school students. Three female researchers from NICT took the stage to share their personal experiences as students, their motivations for pursuing research careers, their current research topics, and their working styles at NICT. By speaking from their own experiences, they offered students a relatable and authentic perspective on science career paths and research professions (Photos 2 and 3).

Through these activities, NICT aims to realize a society where diverse talent can thrive in the field of science and technology and is committed to nurturing future leaders.



Photo 1 Session with high school students and researchers



Photo 2 High school students listening to researchers' presentations at the career talk



Photo 3 Interaction between NICT Senior Executive Director Dr. MORIAI and high school students

Gender Gap Conference

Organizer: Nikkei Inc., Nikkei Business Publications Inc.

NICT is sponsoring the Gender Gap Conference as a member-organization of the Nikkei Woman Empowerment Consortium.

Date: Friday, December 5, 2025

Event format: Hybrid (in-person attendance + online attendance)

Venue: Muromachi Mitsui Hall & Conference

Participation fee: Free (advance registration required)

Nikkei Gender Gap Conference December 2025 [Search](#)



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