



Japanese Graduate School

INAIST

Nara Institute of Science and Technology

GUIDEBOOK  
2024



# About NAIST

Nara Institute of Science and Technology (NAIST) was founded as a unique Japanese national university consisting solely of graduate schools in the three areas of information science, biological sciences, and materials science to redefine graduate-level education. In 2018, to push forward the boundaries of advanced science and technology, the three graduate schools merged to create the Graduate School of Science and Technology with Education Programs in the original three research areas and two of their interdisciplinary areas. At present, over 1,200 students—roughly 25% from overseas—are supervised by approximately 200 NAIST faculty.

With its cutting-edge facilities and a high student-to-faculty ratio, NAIST's world-leading research and education are a direct result of its rich, global environment and supportive infrastructure. Moreover, NAIST's faculty and students' outstanding achievements are shared world-wide through patents, licenses, spin-off companies, and active international exchange. As a result, NAIST has quickly established itself as a world-class research and education center where young research scientists and engineers become tomorrow's global leaders.

From its establishment, NAIST has developed education programs and research that begin with NAIST and spread across research fields through our extensive global network of NAIST graduates and international partner institutions. This network is not only key to our research activities, which are undertaken spanning the globe to promote collaboration at the forefronts of science and technology, but a central part of NAIST's global education programming, allowing students to experience today's international trends and environments.

NAIST eagerly promotes admission of students from both Japan and overseas who have strong basic academic capabilities, regardless of their academic backgrounds, and actively admits researchers, engineers and others currently working in society with strong enthusiasm for advanced scientific research and clearly defined aspirations for the future.



## President's Vision 2030

NAIST celebrated its 30th anniversary in 2021 and the President, Dr. Kazuhiro Shiozaki, issued his vision of what NAIST should be in 2030. Upon the foundation laid by its prominent achievements over the past three decades, NAIST will build a campus community that strives for the new development in research and education through "co-creation" with diverse stakeholders. Please use the QR code to view the President's Vision 2030 and find out how NAIST will pursue co-creation to fulfill its mission as a national postgraduate institution.



# NAIST Timeline

1991	NAIST established on October 1st (Graduate School of Information Science)
1992	Graduate School of Biological Sciences and Information Technology Center established
1996	Graduate School of Materials Science established
2004	NAIST became a National University Corporation, Industry-Government-Academia Collaboration Group established
2010	Information Initiative Center and Research Center for Advanced Science and Technology established
2013	Career Services Office established
2015	Center for Strategy and Planning, Institute for Educational Initiatives and Institute of Research Initiatives established
2017	Data Science Center established
2018	Three original graduate schools merged to create Graduate School of Science and Technology
2021	Center for Digital Green-innovation and Regional Co-creation Office established
2023	Life Science Collaboration Center and Center for Material Research Platform established

# NAIST Numbers

NAIST is an institute focused solely on graduate school education based on its research achievements in the leading fields of science and technology.

## NAIST Student Enrollment

Master's	Doctoral	Research students, etc.
779	384	79
Total: 1242 (International students: 26%)		

(As of November 2023)

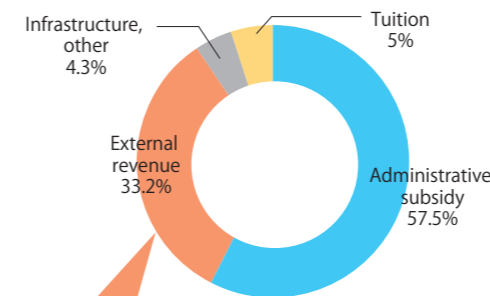
## NAIST Faculty and Staff

Executive administration	Faculty	Staff
8	186	165
Total: 381 (International faculty and staff: 5%)		

(As of May 2023)

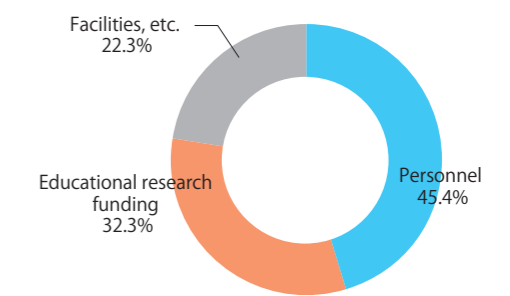
## High Percentage of External Revenue

FY2022 Revenue: Total 10.5 billion (JPY)

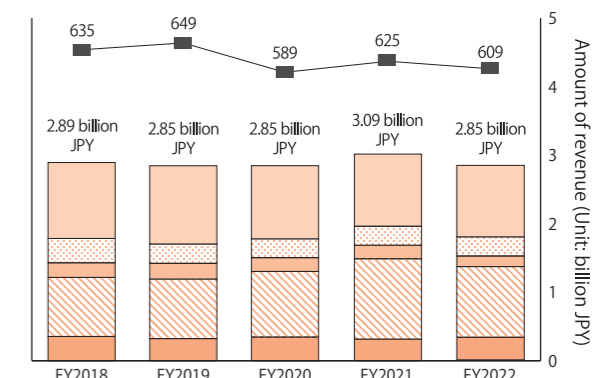
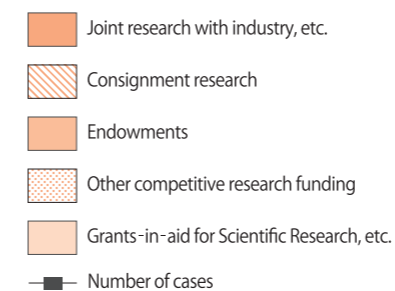


## High Allocation of Educational Research Funding

FY2022 Expenses: Total 9.9 billion (JPY)

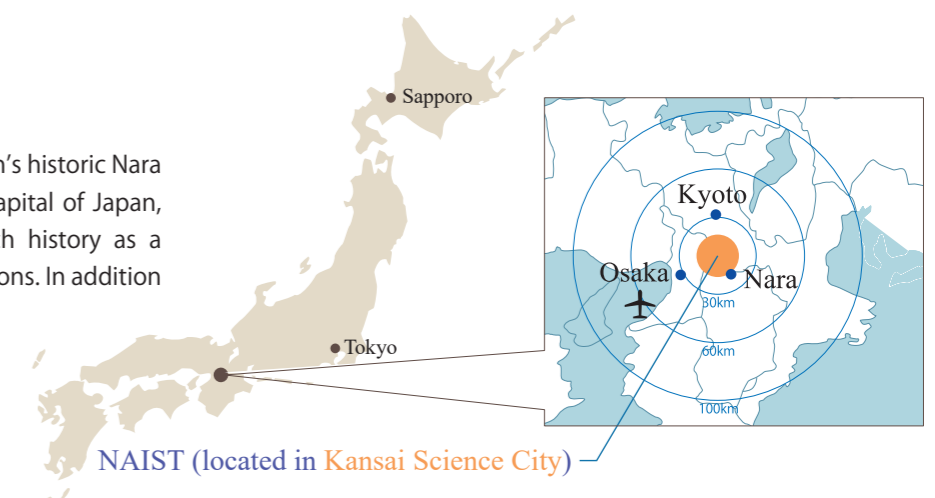


## External Revenue Breakdown (As of March 2023)



# Location

NAIST is located in Ikoma City, in Japan's historic Nara Prefecture. Home of the first official capital of Japan, Nara Prefecture has an incredibly rich history as a center for international trade and relations. In addition to its prolific ancient heritage, Nara Prefecture is also conveniently located in close proximity to Kyoto and Osaka, and just 60 minutes from Kansai International Airport.



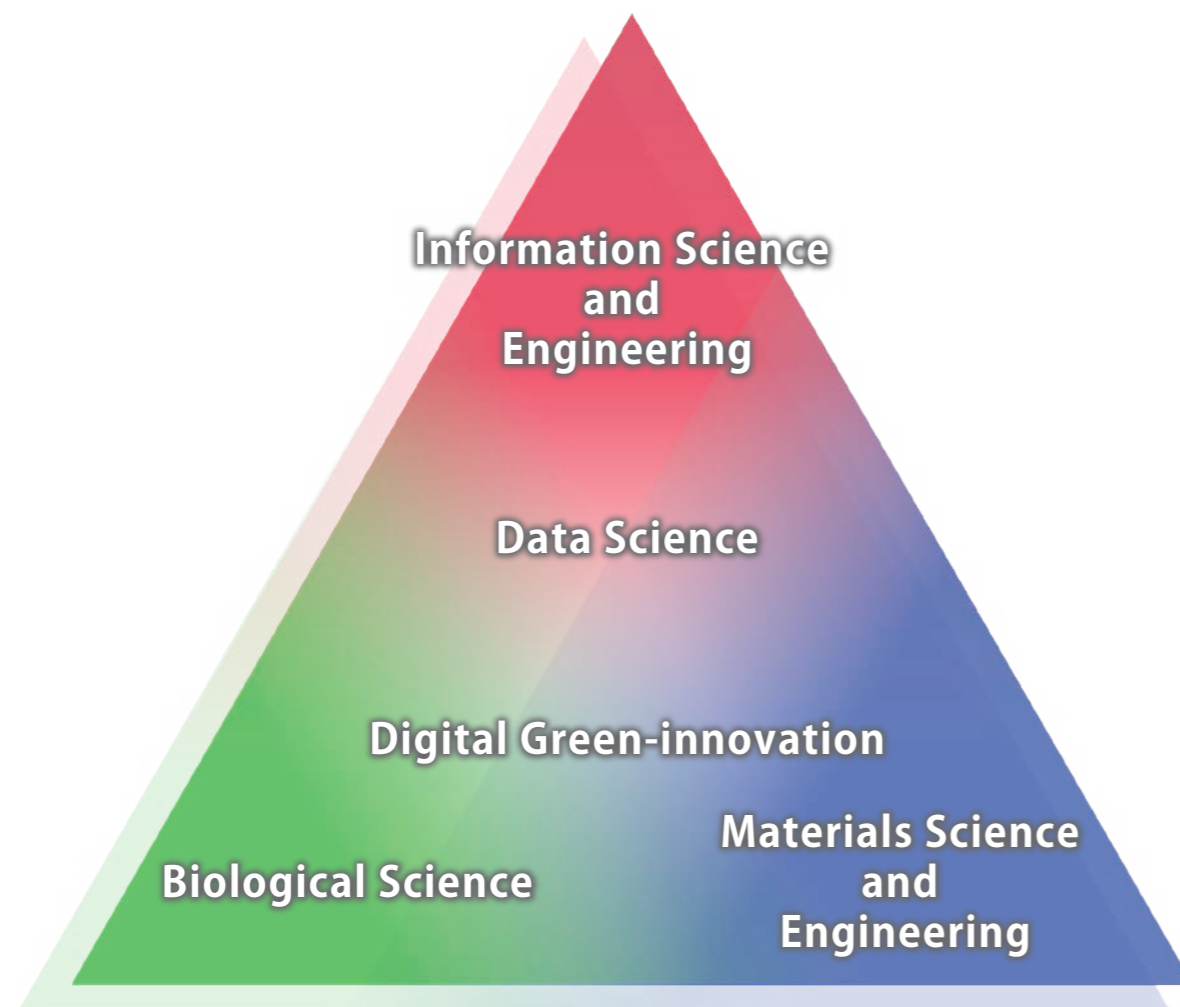
# NAIST's Educational Structure

## Graduate School of Science and Technology

The Graduate School of Science and Technology was established to remove existing barriers between academic fields to form a flexible educational structure where faculty from related areas come together to perform education at the forefronts science and technology and to introduce an educational system for basic and specialized knowledge to prepare students for studies in diverse areas, and to allow them to reach beyond their specializations utilizing the knowledge and skills they attained in their undergraduate education. Additionally, in order to meet the ever-changing needs of society and to achieve real-world application, project-based learning and other practical educational projects led by invited researchers and engineers from private industry, etc. are incorporated into the curriculum.

## Multidisciplinary-focused Education Programs

The five Education Programs of the Graduate School of Science and Technology span the three original fields of research at NAIST (information, biological and materials sciences) and include the developing interdisciplinary fields that emerge independent of traditional academic divisions to pursue current trends in science and technology. All laboratories belong to one or more Education Program and students choose the type of degree they will pursue depending on their studies and the focus of their research.



# Education Programs

## Facilitating research in leading-edge science and technology

<b>Information Science and Engineering</b>	Degrees granted: Master's / Doctorate (engineering, science)
A focused program fostering students to support our dynamic advanced information society, implementing further achievements in diverse fields. This program cultivates specialized knowledge and skills in computer hardware/information network technology, computer/human interaction and media technology, and computer systems to utilize robotics.	
<b>Biological Science</b>	Degrees granted: Master's / Doctorate (biological science)
A focused biological science program which fosters students who are able to contribute to the development of humankind and the conservation of the global environment through research and development related to the environment, energy, food and natural resources, and human health and longevity by equipping them with cutting-edge knowledge and skills in a wide range of fields, from the basic principles of life phenomena to the diversity of living organisms in animals, plants, and microorganisms.	
<b>Materials Science and Engineering</b>	Degrees granted: Master's / Doctorate (engineering, science)
A focused program fostering students with foundational knowledge of materials science and advanced knowledge to fully utilize their expertise in a program spanning solid state physics, device engineering, molecular chemistry, polymeric materials and bionano-engineering, and undertake next generation science and technology to maintain affluent living and support societal development.	
<b>Data Science</b>	Degrees granted: Master's / Doctorate (engineering, science, biological science)
An interdisciplinary program fostering students with a wide range of expertise in data- and AI-driven sciences in information, biological, and materials sciences, to find hidden 'value' and 'truth' through data processing, visualization, and analysis of huge amounts of data to contribute to science, technology, and societal development.	
<b>Digital Green-innovation</b>	Degrees granted: Master's / Doctorate (engineering, science, biological science)
An information, biological, and materials sciences interdisciplinary program which fosters students with advanced expertise in these three fields which support society and the economy, as well as comprehensive backgrounds to understand the adjacent interdisciplinary research fields, especially the interdisciplinary fields that encompass green and digital fields. These students can approach issues from various perspectives throughout society and will lead the utilization of digital green science and technology, which continues to develop in the green and digital fields, and innovation in society.	

## Education Programs that can be selected for each Division

		Information Science and Engineering	Biological Science	Materials Science and Engineering	Data Science	Digital Green-innovation
Division	Information Science	○			○	○
	Biological Science		○		○	○
	Materials Science			○	○	○

# Globalization at NAIST

The coordinated education and research activities necessary to produce researchers and engineers who push forward the boundaries of science and technology and are active participants in today's global society, and the extensive organized support to ensure their success.

## NAIST's global campus

At NAIST, in order to develop global leaders in science and technology, we have focused on the globalization of our campus, including academic environments and campus facilities, while also restructuring our education programming to respond to current global needs and trends in science and technology. These efforts have produced a truly unique on-campus community that is central to students' and researchers' experience at NAIST. With students from various cultures, fields and backgrounds studying and performing research under NAIST's diverse faculty, our campus has become an international hub for both education and research in science and technology and we are maintaining and actively expanding our network of domestic and international partners to further promote our activities globally.

## International collaborative research network

### Overseas and on-campus collaborative laboratories

NAIST maintains several international research laboratories on campus and at partner institutions where faculty reside to facilitate collaborative research and strengthen institutional ties.

- ▶ University of California Davis (USA)
- ▶ University of British Columbia (Canada)
- ▶ Université Toulouse III - Paul Sabatier (France)
- ▶ École Polytechnique (France)
- ▶ National Yang Ming Chiao Tung University (Taiwan)

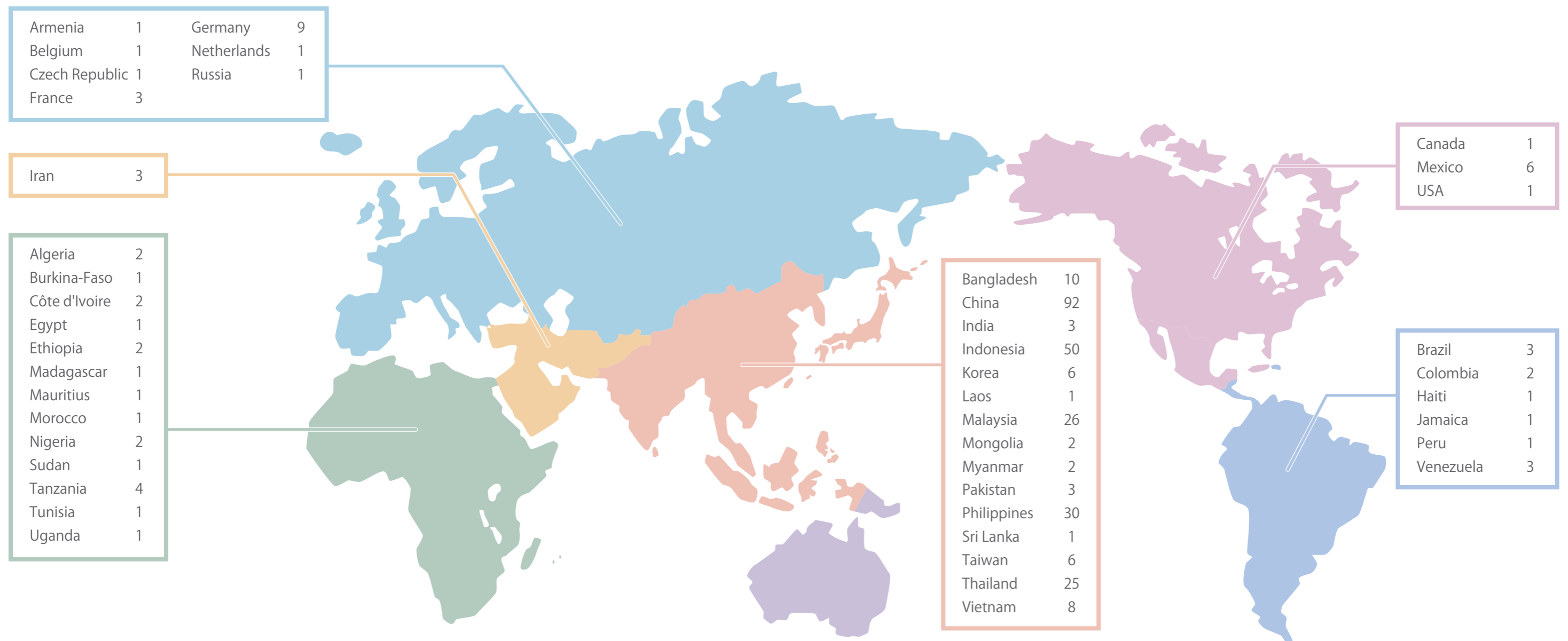
### Overseas education and research collaboration offices

In Asia, NAIST has established two overseas offices in Thailand and Indonesia as hubs for education and research collaboration to support its growing network of graduates and partner institutions, and maintains an office to promote collaboration projects in Indonesia as well.

- ▶ NAIST Indonesia Office (located in the Bogor Agricultural University Alumni Building)
- ▶ NAIST Thailand Office (located in the Kasetsart University Faculty of Engineering)
- ▶ UGM-NAIST Collaboration Office (located in the Gadjah Mada University Biotechnology Research Center)

## International Student Enrollment

(As of November 2023)



# Agreements on Academic Exchange with 101 Overseas Institutions in 26 Countries/Regions

(As of January 2024)

NAIST's international network is centered upon our international partner institutions and the faculty and staff that continue to strengthen ties in both research and education. The academic agreements below are achieved through extensive collaboration and their contents cover areas including research collaboration, symposia, guest lectures, faculty and student exchange, and the sharing of scientific information and materials.

## Institution Level Agreements

Asia
Bangladesh
Bangladesh University of Engineering and Technology
China
Institute of Genetics and Developmental Biology, Chinese Academy of Sciences
Tianjin University of Technology
Liaoning University
Northeast Normal University
India
KIIT College of Engineering
Indian Institute of Technology, Jodhpur
Indira Gandhi Delhi Technical University for Women
Indonesia
Gadjah Mada University
IPB University
University of Indonesia
Hasanuddin University
Bandung Institute of Technology
Jenderal Soedirman University
Electronic Engineering Polytechnic Institute of Surabaya
Institut Teknologi Sepuluh Nopember
Korea
Hanbat National University
Malaysia
University of Science, Malaysia
University of Malaya
University of Technology, Malaysia
Universiti Tunku Abdul Rahman
Universiti Kebangsaan Malaysia
Philippines
Ateneo de Manila University
University of the Philippines Diliman
Taiwan
National Yang Ming Chiao Tung University
The National Taiwan University of Science and Technology
National Cheng Kung University
Thailand
Mahidol University
Chulalongkorn University
Kasetsart University
Chiang Mai University
King Mongkut's University of Technology Thonburi
Vietnam
Hanoi University of Science, Vietnam National University
University of Engineering and Technology, Vietnam National University
Vietnam National University HCMC, University of Information Technology
Hue University of Sciences
Posts and Telecommunications Institute of Technology HCMC Campus

Europe
Belgium
Université Catholique de Louvain
France
Université Toulouse III - Paul Sabatier
Ecole Polytechnique
Ecole Normale Supérieure Paris-Saclay
Telecom Paris

Sorbonne University
University of Paris-Saclay
Université de Rennes
ESIGELEC
Ecole Normale Supérieure de Lyon (ENS de Lyon)
The University of Picardie Jules Verne
University Bourgogne Franche-Comté (UBFC)
Germany
RWTH Aachen University
Justus Liebig University Giessen
Karlsruhe Institute of Technology
University of Regensburg
Coburg University of Applied Sciences and Arts
DFKI (The German Research Center for Artificial Intelligence)
Italy
University of Cagliari
University of Trento
Russia
Peter the Great St. Petersburg Polytechnical University
Spain
University of Granada
UK
University of Edinburgh

North America
Canada
Queen's University at Kingston
USA
University of California, Davis
University of California, San Diego
Mississippi State University
Lawrence Berkeley National Laboratory (LBNL), Joint Genome Institute (JGI)

South America
Brazil
Universidade Federal de São Paulo

Africa
Senegal
Cheikh Anta Diop University

Oceania
Australia
The University of Newcastle
University of Adelaide
New Zealand
Unitec Institute of Technology



## School/Department Level Agreements

Information Science
Asia
China
School of Information Science and Engineering, Yunnan University
Korea
Graduate of IT Engineering, Kyungpook National University
Vietnam
Faculty of Electronics and Telecommunications, HCMC University Of Science, Vietnam National University
Department of Electronic and Telecommunication Engineering, University of Science and Technology - The University of Danang, Vietnam

Europe
Finland
Faculty of Medicine, University of Turku
France
Telecom SudParis
École Supérieure d'Ingénieurs en Électrotechnique et Électronique (ESIEE) Paris
École nationale supérieure d'ingénieurs de Caen (ENSICAEN)
Germany
Faculty of Engineering and Computer Science, University of ULM
Department of Informatics, Technical University of Munich
Department of Electrical and Computer Engineering, Technical University of Munich
Faculty of Mathematics and Natural Sciences, Heinrich Heine University Düsseldorf
UK
Department of Statistical Science, University College London

South America
Brazil
Departments of the University of San Paulo

Biological Science
Asia
Bangladesh
School of Health and Life Sciences, North South University
China
College of Life Sciences, Nanjing Agricultural University
School of Life Sciences, Nanjing University

Vietnam
Institute of Biotechnology, Vietnam Academy of Science and Technology

North America
Canada
Faculty of Science, University of British Columbia
USA
Biotechnology Institute, University of Minnesota

Materials Science
Asia
China
School of Chemistry and Chemical Engineering, Nanjing University
India
Indian Institute of Science Education and Research, Thiruvananthapuram
Taiwan
Institute of Biophotonics, National Yang Ming Chiao Tung University
Vietnam
Institute of Materials Science, Vietnam Academy of Science and Technology

Europe
Austria
Institute of Solid State Physics, Graz University of Technology
Germany
Faculty of Engineering, RheinMain University of Applied Sciences
Netherlands
Faculty of Science, Leiden University
Faculty of Electrical Engineering, Mathematics and Computer Science, Delft University of Technology
Switzerland
Faculty of Science, University of Zurich

North America
USA
Macromolecular Science & Engineering Program, University of Michigan

## Double Degree Programs

In the double degree program, students are enrolled at NAIST and one of our partner institutions, and upon completing the program, following research guidance from both institutions' faculty, receive degrees from both institutions. Currently, NAIST offers doctoral course double degree programs with 7 international partner institutions and a master's course double degree program with Kasetsart University.

Partner institution	Country/region	Faculties, colleges, and areas	Research areas at NAIST
Macquarie University	Australia	① Department of Biological Science ② Department of Molecular Science ③ Department of Chiropractic Science ④ Department of Computing ⑤ Department of Earth and Planetary Sciences ⑥ School of Engineering ⑦ Department of Environmental Sciences ⑧ Department of Mathematics and Statistics ⑨ Department of Physics and Astronomy	All divisions
Université Toulouse III - Paul Sabatier	France	All fields with a counterpart in NAIST	Materials Science
Université Paris-Saclay	France	All fields with a counterpart in NAIST	All divisions
Sorbonne Université	France	Information science	Information Science
Ulm University	Germany	Computer science and engineering science	Information Science
National Yang Ming Chiao Tung University	Taiwan	① College of Science ② College of Electrical and Computer Engineering ③ College of Engineering	All divisions
Chulalongkorn University	Thailand	Biochemistry and molecular biology, Faculty of Science	Biological Science
Kasetsart University (Master's course)	Thailand	Faculty of Engineering	Materials Science

# Student Support

## A supportive research environment for students

### Rated top-class for research among Japanese national universities

In 2021, of all the respected national universities, NAIST was ranked extremely high for both Grant-in-aid for Scientific Research funding received and number of papers published (both of these are per individual faculty member), being ranked second in both areas. Also, in the MEXT Intermediate Evaluation of the 3rd Mid-term Target Period, NAIST was one of two institutions whose education and research were both evaluated highly as "having made significant progress." Furthermore, the average institutional research budget for each NAIST faculty member for the 2022 fiscal year was over 6 million yen, far surpassing double the national average.

### Personalized education and research advising for students

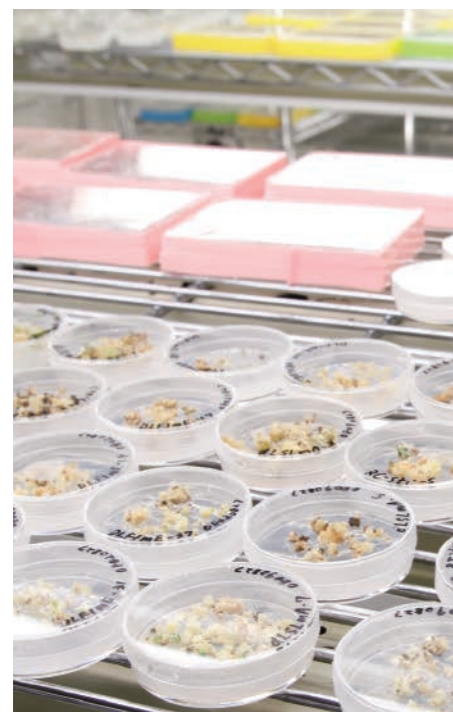
With a 6:1 student-to-faculty ratio (FY2022), almost half the 10:1 average ratio for Japanese national institutions, NAIST students are regularly able to take advantage of individual advising opportunities. In addition to the main supervising professor, students are also assigned at least one sub-supervising professor to allow for guidance from different fields and to facilitate a broad understanding of their research. Furthermore, NAIST's campus is physically compact and the educational structure is organized to encourage collaboration and developments in both education and research across traditional academic fields.

## Examination, enrollment and tuition fees

Enrollment type	Examination	Enrollment	Tuition
Master's and Doctoral Program Students	JPY 30,000	JPY 282,000	JPY 267,900/semester (JPY 535,800/year)
Research Students	JPY 9,800	JPY 84,600	JPY 29,700/month
Special Research Students* (Short-term Exchange Students) Undergraduate Internship Students	—	—	JPY 29,700/month

\*Tuition may be waived for students from partner institutions.

(As of April 2023)



## A wide variety of financial support options

### Japanese Ministry of Education, Culture, Sports, Science & Technology (MEXT) Scholarship

MEXT offers competitive, full scholarships to excellent overseas students and researchers to study in Japan, which include comprehensive support (Tuition and other fee exemption, monthly stipend, travel expenses) so they may focus on their studies and research. There are two types of scholarships, embassy and university recommendation. (International Priority Graduate Programs, etc.)

### NAIST International Scholar Program

This program is offered to talented partner institution students to study at NAIST while being Research Assistants, gaining valuable, hands-on research experience. NAIST Scholars are exempted from tuition and other fee payment, and receive a research assistantship salary and airfare to Japan.

### Other government and private scholarships

Every year a select number of privately financed international students receive JASSO and other private scholarships exclusively for NAIST students. Additionally, multiple scholarships specifically for international students are offered by private companies and foundations.

### Teaching and research assistantships

In addition to the NAIST International Scholar Program, NAIST actively supports exceptional students with teaching and research assistantships, where they receive a salary for taking on different roles in the lab and classroom.

### Affordable on-campus housing

For international students studying in Japan, housing is an expensive and time-consuming issue. All full-time international students are eligible for on-campus housing. Housing fees range from JPY 10,000 - JPY 15,000 for single, couple or family housing, less than one third of average Japanese housing costs. A new apartment-style dormitory where Japanese and international students live together to foster cultural understanding opened in April 2021.

Apartment-style dormitory ▶



◀ Single housing

### International Student Affairs Section (ISAS)

ISAS is the first office that international students deal with when they begin their procedures for studying at NAIST. Starting with admissions assistance and visa procedures, ISAS manages international student registration, offers administrative support for international students concerning their status in Japan and handles Japanese government and other scholarships. The experienced staff also offers advice to students as they live and study at NAIST. Additionally, the section works with a citizen group to maintain a Japanese language program and arranges Japanese cultural excursions every year.



### Center for International Students and Scholars (CISS)

CISS was started as part of NAIST's commitment to supporting its growing international community, which consists not only of students, but also students' families, international researchers and faculty, and their families as well. CISS cooperates with administrative offices across the campus to offer support in areas both on and off campus, while also working with local government offices to assure the international community in and around NAIST are able to make the most of their time at NAIST and in Japan.



# Life at NAIST

## Living off-campus



**Ani HOVHANNISYAN**

1st year doctoral student from Armenia studying in the Software Engineering Laboratory (Division of Information Science)

### My usual weekday

- 8:00 Breakfast and taking my daughter to school
- 9:00 Arrive at NAIST and start studying/research
- 12:00 Lunchtime and relaxing with friends
- 13:00 Experiments, assignments and part-time job
- 18:00 Dinner
- 19:00 Family, friends and playtime
- 22:00 Housework and free time



### Living off campus

Life in the Tomigaoka (Nara) area is truly enjoyable, a perfect balance, not too urban yet not too rural, making it an ideal environment for raising a child and studying. With the train station and NAIST close by, it is a short commute and we can easily check out Osaka, Kyoto, or even explore Kobe. Our most delightful moments involve riding bikes and exploring nearby cafes and parks.



### On my days off

Mostly, we explore the outdoors in the Kansai area. In nice weather, we enjoy discovering new areas by bicycle. During rainy or hot weather, we opt for indoor activities, such as playgrounds, shopping malls, and exploring Asian cuisine with friends.



### Student comment

Don't let anything stop you from learning a language or achieving the goals you have when you come to Japan.

## Living on-campus



**Cargill Dujohn SEIVERIGHT**

2nd year master's student from Jamaica studying in the Natural Language Processing Laboratory (Division of Information Science)

### My usual weekday

In my first year, a set schedule for required classes, Japanese classes, lab meetings, and lab study groups. My second year is flexible and I spend most of my time on my research project, meetings, job hunting, studying Japanese, reading manga, and going on trips!



### On my days off

I love going on trips, hiking, restaurant hopping, izakaya, karaoke, and visiting historic and cultural sights. Also, I enjoy visiting my favorite onsen with friends to unwind. There are many opportunities to participate in events like monitor tours, often involving fun activities and provide a chance to immerse yourself in Japanese culture. I highly recommend registering for these.



### Life in the dormitory

I'm more of a function over aesthetics kind of guy, so my room is quite plain. I don't collect much stuff, but I still need to be strategic with my limited space. I highly recommend getting adhesive hooks, stackable storage containers, and drawers. Aside from that, I have two carnivorous plants and two Jamaican pepper plants that I try my best to take care of. It's grounding to tend to them daily, or at least most of the time.



### My monthly budget

- Dormitory, utilities, etc.: JPY 16,000
- Food & groceries: JPY 38,000
- Mobile plan & subscriptions: JPY 8,000
- Transportation: JPY 10,000
- Health insurance and medical costs: JPY 3,000
- Trips, online shopping, gifts, etc.: JPY 46,000

### Student comment

Put yourself out there and don't hesitate to join different groups and attend events!

## Student activities and events



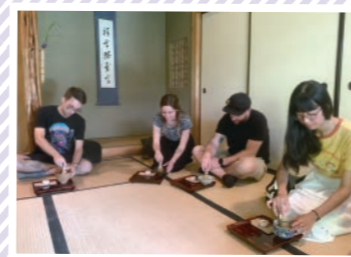
One Day Excursion



Hanami (Cherry blossom viewing)



Nagashi Somen



Japanese Cultural Experience



New Year's Calligraphy Event

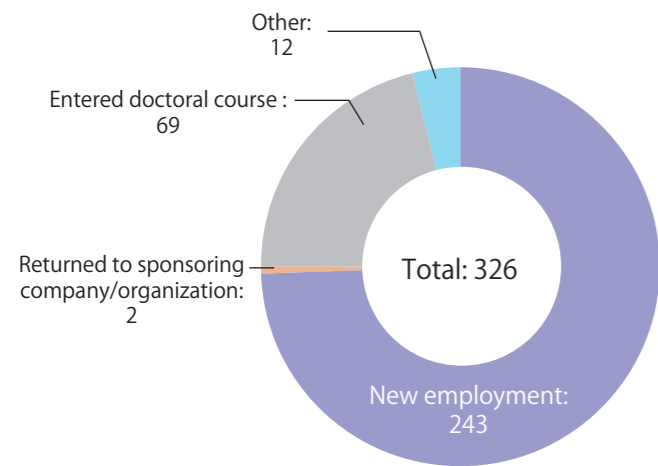


NAIST Stage

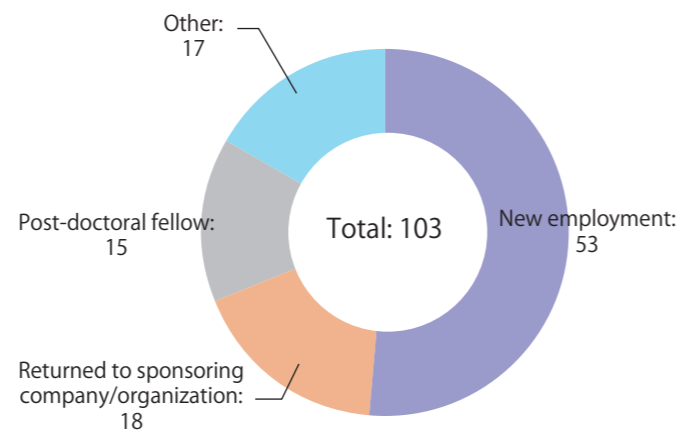
# Careers after NAIST

## Paths after Graduation

### Master graduates in academic year 2022



### Doctor graduates in academic year 2022



**99%** of graduates looking for employment found positions

### Division for Career Development (DCD)

Established in 2013, DCD provides a wide variety of career support to NAIST students who seek non-academic careers in Japan. In particular, two University Education Administrators (UEA) are employed specifically to support international students as they maneuver the unique and difficult to understand Japanese job hunting customs and procedures.



## Career Support Programs for International Students

### Career Guidance

Career guidance sessions to educate students on how to start and proceed with job hunting in Japan



### Career Counseling

International student career consultation service available in English



### Career Events

Career events for international students and HR/R&D divisions of Japanese companies with global vision



Reference materials for job hunting are available to read and borrow in our office. It is also possible to read the job-hunting reports of our alumni.



# Hear from our Graduates



**Chengyan ZHAO, Ph.D.**  
Assistant Professor  
Ritsumeikan University  
Graduated Division of  
Information Science in 2021

### Life in Japan

Being fascinated by Japanese culture since childhood, coming and studying in Japan is always my dream. Besides my academic work, I got many opportunities to travel around Nara and Kansai cities, where the history spanning thousands of years is really amazing to me. Moreover, my daily life which was supported by the clean environment, safe food, and warmhearted staff and friends really touched me. By the way, Japanese "sushi" and "ramen" are my favorite.

### My Experience at NAIST

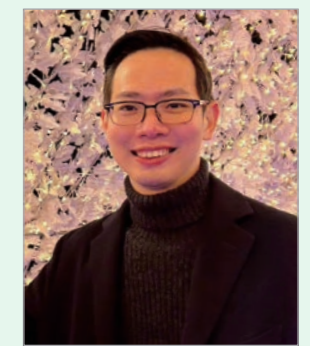
From my academic and private experiences, in my mind, NAIST is no doubt the best place for research in Japan. NAIST gathers a group of energetic professors only conducting graduated courses, in other words, students have access to more research resources than normal universities. Besides that, NAIST supports students to visit abroad to exchange ideas with the world's scientists. In addition to this academic support, the low-cost dorm located on campus allowed me to concentrate on my research without worrying about commuting or rent. Furthermore, if you want to start your career in Japan, make sure to visit the NAIST Career Office, where you can obtain support and guidance throughout the job-hunting process. Here, I want to say that I could not have gotten my current position in Ritsumeikan University without the generous help of NAIST Career Office. In a word, NAIST is the perfect place to enjoy both your research and your life.

### Life in Japan

When I first arrived in Japan in 2017, I still remember the excitement because I was starting a new chapter of life in another foreign country. I am impressed that Japan has a safe environment and good public transportation which makes foreigners living easy and comfortably. Whenever I have troubles, the people here are friendly and kind to help out. In my current workplace, co-workers always share their knowledge and experience with me. They slowly guide me so that I can understand my job well and grow as a valuable person in society. Sometimes, they also bring me out to try local Japanese seafood such as Kinmedai (a fish commonly found in Izu Peninsula) which is new thing for me! I don't know how my future will unfold but the experience that I gained previously makes me feel glad to come to Japan for my studies and career.

### My Experience at NAIST

As a top graduate university, NAIST places great emphasize on creating a diverse community and promotes value creation that benefits society through the advancement of science and technology. I believe that NAIST has one of the best environments for students to further their graduate studies in Japan. Students can build solid student-faculty relationships in NAIST because we are free to talk with professors in an exchange of ideas, information and perspectives. NAIST also provides opportunities to go abroad for research exchange. During my time at NAIST, I visited UC Davis in America and participated in some cutting-edge experiments. Moreover, students can also get tremendous support from International Student Affairs Section whenever they need counseling on student life such as dormitory and exchange events. Finally, please pay a visit to Division for Career Development (DCD) if you are interested in working in Japan after graduation. Through consultation with DCD staff, I have obtained a lot of information regarding job hunting and landed my first job in life after graduation. I feel that studying in NAIST has made a big impact on both my education and career development.



**Yen Siang WONG, Ph.D.**  
Researcher  
Sunstar Group  
Graduated Division of  
Biological Science in 2022

### Life in Japan

When I first arrived in Japan as a graduate student, the only Japanese words I knew were greetings. Although it made me nervous at first, living in Japan is much easier than I expected. Being able to have a daily conversation is more than enough to comfortably settle down and enjoy day-to-day life. Japan is also one of the safest countries in the world. I am never worried even if I have to go out alone. The culture that is built on empathy and cutting-edge technology made me come to love Japan. I came to Japan with the intention of finishing my degree and returning to my home country, but I ended up falling in love with Japanese culture and decided to stay and work here.

### My Experience at NAIST

The student support program at NAIST provides opportunities for students to develop their skills and encourages them to do so. During my time at NAIST, I had the opportunity to study English in the United States and work as an exchange researcher in Switzerland. I was able to complete research that was accepted by top-ranking conferences in my field and published in a well-known journal thanks to professors' advice and advanced laboratory facilities. Furthermore, the diversity of nationalities among students creates a pleasant environment for both international and Japanese students. I had a terrific time throughout my study, and hanging out with my Japanese and international friends also significantly improved my Japanese and English. Studying at NAIST provided me not just an education but also an opportunity for personal development.



**Nattakarn WUTHIBENJAPHONCHAI, Ph.D.**  
Prototype Development Engineer  
Sony Semiconductor Solutions  
Corporation  
Graduated Division of  
Materials Science in 2020



# Areas of Research and Education

Information Science



17-20 ▶

Biological Science



21-23 ▶

Materials Science



24-25 ▶

## Information Science

### Computer Science Laboratories

#### Computing Architecture

Prof. Yasuhiko Nakashima  
Affiliate Prof. Mutsumi Kimura  
Affiliate Prof. Renyuan Zhang  
Assist. Prof. Yirong Kan  
Assist. Prof. Hoai Luan Pham

One of JST's advanced carbon-neutral technology development and green computing bases. From supercomputing to IoT, we propose, assess, and disseminate new computational foundations essential for an energy-efficient society. Starting with simulator design and progressing through research processes encompassing implementation into high-capacity FPGAs and LSI design, students acquire skills to optimize systems across layers of devices, hardware, architecture, compilers, and applications for various data flow-centric processes. Such system architects distinguish themselves from ordinary engineers limited to off-the-shelf solutions, emerging as vital talents indispensable for the upcoming era of energy-efficient societies.

AI accelerators, cryptographic accelerators, stochastic computing, brain computing, large-scale FPGA/GPGPU/LSI environments

#### Dependable System

Prof. Michiko Inoue  
Adjunct Prof. Fukuhito Ooshita  
Adjunct Assoc. Prof. Michihiro Shintani  
Assist. Prof. Ryota Eguchi

Today's information society is supported by various levels of advanced technology such as applications, systems, computers and VLSIs. The Dependable System Laboratory is pursuing research on safe and secure systems including distributed systems with hundreds of computers and VLSIs with billions of transistors. Dependability is a concept from the user's point of view, when systems can be used reliably and securely.

Distributed algorithms, self-stabilizing algorithms, population protocols, randomized distributed algorithms, random walks, mobile agent algorithms, robot swarms, VLSI design for testability, machine-learning-based test optimization, dependability of emerging memory systems, hardware Trojan detection

#### Ubiquitous Computing Systems

Prof. Keiichi Yasumoto  
Assoc. Prof. Hirohiko Suwa  
Assist. Prof. Yuki Matsuda  
Assist. Prof. Tomokazu Matsui

Our goal is to realize IoT technology to acquire data from things in the real world, AI technology to efficiently and accurately analyze acquired data, and feedback technology to effectively reflect the findings of analysis in the real world, which are necessary for the realization of Society 5.0. Our laboratory conducts education and research from both theoretical and practical perspectives, ranging from basic research on various elemental technologies to the construction of actual systems that use these technologies.

IoT/CPS, ubiquitous computing, mobile computing, edge computing, smart homes, smart life, smart cities, participatory/social/mobile sensing, behavior change, federated learning, privacy protection

#### Software Engineering

Prof. Kenichi Matsumoto  
Affiliate Prof. Takashi Ishio  
Affiliate Assoc. Prof. Hideaki Hata  
Assist. Prof. Raula Gaikovina Kula  
Assist. Prof. Kazumasa Shimari

Our laboratory performs research and education on the fundamentals and innovative technological trends of software engineering, including how contemporary software development teams make and maintain software, especially when using open source software. Topics include code analysis at the project level for automated tool support, empirical mining software artifacts to test assumptions, and human communication at both project and larger ecosystem levels. We strive to help build, use and maintain software to benefit society.

Program analysis, programming education, open source software, software ecosystems, empirical studies, artificial intelligence, mining software repositories, software libraries, software security

#### Software Design and Analysis

Prof. Hajimu Iida  
Assoc. Prof. Kohei Ichikawa  
Visiting Prof. Toshinori Takai  
Visiting Prof. Yasushi Tanaka  
Assist. Prof. Yutaro Kashiwa  
Assist. Prof. Toshiaki Hirao  
Visiting Assist. Prof. Keichi Takahashi

We conduct research on the methods and technologies which support the design/development of software and cloud computing systems, focusing on the analysis/improvement of the software development process. Software technology is increasingly present in our daily lives, including various software-embedded machinery and electronic devices for homes, mobile telephones, and social infrastructures represented by cloud computing systems.

Software development processes, repository mining, software design & verification, cloud infrastructure design, software defined networking (SDN)

#### Cyber Resilience

Prof. Youki Kadobayashi  
Assoc. Prof. Yuzo Taenaka  
Assist. Prof. Md. Delwar Hossain  
Affiliate Prof. Hiroyuki Inoue  
Affiliate Assoc. Prof. Daisuke Miyamoto

Our laboratory pursues resilience of ICT-based society together with lab members and colleagues around the world. Our research ranges from theoretical to practical, and spans across broad technical fields, from binary code, methodology, to even law. The pursuit of resilience (toughness) is an ongoing challenge and central to our motivation.

Cybersecurity, Internet technology, IoT/CPS, privacy, edge computing, applied machine learning, software defined technology, operating systems, distributed systems, industrial control systems (ICS)

#### Information Security Engineering

Prof. Yuichi Hayashi  
Assist. Prof. Daisuke Fujimoto  
Assist. Prof. Shugo Kaji  
Affiliate Assist. Prof. Youngwoo Kim

Our laboratory conducts research on methods to ensure hardware safety, which is the bedrock of system information security. We also research to ensure system-level security, including the upper layers. In addition to students from information science fields, we also accept students who majored in electrical and mechanical engineering that wish to study the information field.

Hardware security, cryptographic hardware, embedded systems, side-channel analysis, electromagnetic information security, hardware Trojans, cyber-physical system security, sensor security, electromagnetic compatibility

#### Internet Architecture and Systems

Prof. Kazutoshi Fujikawa  
Assoc. Prof. Ismail Arai  
Assist. Prof. Masatoshi Kakiuchi  
Assist. Prof. Arata Endo  
Affiliate Assoc. Prof. Shigeru Kashihara  
Affiliate Assoc. Prof. Akira Yutani

Our research goal is to realize the next-generation ICT infrastructure technologies and services beyond current systems such as the Internet, Wi-Fi networks, and cloud systems, which can be used securely and conveniently. In order to achieve this, our research methods are not only computer simulations but also using actual systems and equipment operated in Information Initiative Center (IIC).

Big data analysis, computer/network operation technique, disaster relief computing/networking, HPC cluster cyber security, pervasive computing, ubiquitous computing, Internet of Things, data centers, network operation, cyber security, high-performance computing, software-defined networking

### Media Informatics Laboratories

#### Natural Language Processing

Prof. Taro Watanabe  
Assoc. Prof. Hidetaka Kamigaito  
Assist. Prof. Hiroki Ouchi  
Affiliate Assist. Prof. Shohei Higashiyama  
Affiliate Assist. Prof. Hiroki Teranishi  
Affiliate Assist. Prof. Yusuke Oda

We perform research on natural language processing, computational linguistics and machine learning. Our primary focuses are on the fundamental techniques for language analysis, language generation and information extraction, and on the end applications, such as machine translation, summarization, question answering and grammatical error correction. We also work on language technologies that intersect with other areas, e.g., geography and vision.

Natural language processing, computational linguistics, machine learning, syntactic analysis, semantic analysis, information extraction, language generation, language grounding, machine translation, summarization, geography and language, vision and language

## Information Science

Media Informatics Laboratories	
<b>Social Computing</b>	<b>We are an interdisciplinary laboratory specializing in the usage of social media mining and natural language processing (NLP) technologies towards a wide spectrum of social outcomes, ranging from medical informatics and mental health applications, to fake news detection on Twitter and AI-powered conversation.</b>
Prof. Eiji Aramaki Assoc. Prof. Shoko Wakamiya Assist. Prof. Shuntaro Yada Affiliate Assist. Prof. Wan Jou She	Social computing, web engineering, artificial intelligence, machine learning, natural language processing, medical informatics, computational social science
<b>Network Systems</b>	<b>The scope of our laboratory includes wireless technologies such as beyond 5G mobile communication systems, wireless power transfer systems, and radio sensors. We educate our students from theoretical and practical perspectives of wireless technologies to achieve our research goals.</b>
Prof. Minoru Okada Assoc. Prof. Takeshi Higashino Assoc. Prof. Chen Na	Wireless communications, wireless power transfer, digital broadcasting, satellite communications, wireless sensors, multiple input multiple output, radio over fiber, dynamic charging, intelligent reflection surfaces, electromagnetic theory, modulation and signal detection
<b>Interactive Media Design</b>	<b>Our vision is to introduce augmented reality, interactive robots, and comfortable self-driving cars into the everyday lives of everyone on this planet. We aim to develop truly practical methods and systems using these technologies in cooperation with experts in various fields, focusing on medicine, sports, and industry.</b>
Prof. Hirokazu Kato Assoc. Prof. Masayuki Kanbara Assist. Prof. Yuichiro Fujimoto Assist. Prof. Taishi Sawabe	Augmented reality, virtual reality, human computer interaction, human robot interaction, computer vision, computer graphics, training systems, support systems, user interfaces, self-driving cars
<b>Optical Media Interface</b>	<b>The research topics in our laboratory include computer vision to understand scenes from visual information obtained by a camera, and computer graphics to generate rich visual information for humans. We are aiming to realize new interfaces that enable humans and machines to interact through optical media based on our cutting-edge research.</b>
Prof. Yasuhiro Mukaigawa Assoc. Prof. Takuya Funatomi Assist. Prof. Yuki Fujimura Assist. Prof. Kazuya Kitano Affiliate Assist. Prof. Takahiro Kushida	Computer vision, computer graphics, computational photography, development of sensing systems, deep learning, optical measurement, unconventional cameras, image analysis, 3D shape reconstruction, digital fabrication
<b>Cybernetics and Reality Engineering</b>	<b>We conduct research to create the "tools of the future" to realize an inclusive society where all people can maximize their abilities and help each other. In particular, by manipulating various sensations such as vision, we aim to live more conveniently, more comfortably, or more securely by offering "personalized realities" which empathize with each individual.</b>
Prof. Kiyoshi Kiyokawa Assoc. Prof. Hideaki Uchiyama Affiliate Assoc. Prof. Nobuchika Sakata Affiliate Assoc. Prof. Naoya Isoyama Assist. Prof. Monica Perusquía-Hernández Assist. Prof. Yutaro Hirao	Virtual and augmented reality, human augmentation, wearable computing, affective computing, cognitive science, psychology, computer vision, human and environmental sensing, artificial intelligence, display hardware
<b>Human-AI Interaction</b>	<b>We conduct research to enhance communication and collaboration between humans and artificial intelligence. This includes exploring speech, text, and image interactions, as well as the interplay between language and paralanguage. Using cutting-edge AI technologies like deep learning, our aim is to achieve successful synergy between humans and machines for a future of collaborative intelligence.</b>
Prof. Sakriani Sakti	Human-machine interaction, spoken language processing, zero-resource speech technology, computer vision, deep learning
Applied Informatics Laboratories	
<b>Human Robotics</b>	<b>We conduct research studies on the intellectualization of robots, understanding human perception-action loops based on information science, and human machine system/human robot collaboration by combining them. We are aiming to define the quality of operational feeling and motion comfort in intelligent mechanical systems that interact with humans. Research questions include "What determines easiness of walking with an artificial leg?"</b>
Prof. Takahiro Wada Assist. Prof. Yasuaki Orita Assist. Prof. Hailong Liu	Human robot collaboration, robotics, human machine systems, human modelling, human machine interaction, cooperative control, biological cybernetics, motion perception, motion sickness
<b>Robot Learning</b>	<b>Our laboratory performs research and educates students in robot learning (machine learning for robot intelligence), an interdisciplinary field of various fields such as machine learning, artificial intelligence, robotics, control engineering, signal processing, optimization and mechatronics.</b>
Prof. Takamitsu Matsubara Assoc. Prof. Kazuki Shibata Affiliate Assoc. Prof. Kenta Hanada Assist. Prof. Yoshihisa Tsurumine Assist. Prof. Hikaru Sasaki Assist. Prof. Yuhwan Kwon Assist. Prof. Cheng-Yu Kuo Assist. Prof. Yuki Kadokawa Affiliate Assist. Prof. Hirotaka Tahara	Reinforcement learning, imitation learning, deep learning, active perception, smart manufacturing, human-assistive technology (exoskeleton robots, EMG interface), industrial applications, vehicle autopiloting
<b>Large-Scale Systems Management</b>	<b>The Large-Scale Systems Management Laboratory research aims to develop mathematical modeling and simulation techniques for optimal design, control and architecture of large-scale systems such as computer/communication networks, with which the resulting systems achieve high performance, low vulnerability and high energy efficiency.</b>
Prof. Shoji Kasahara Assoc. Prof. Takanori Hara Assist. Prof. Yu Nakahata	Queueing theory, game theory, machine learning, algorithms, graph theory, mathematical analytics, network optimization, blockchain, incentive mechanism design, data structure

## Information Science

Applied Informatics Laboratories	
<b>Mathematical Informatics</b>	<b>Our laboratory studies mathematical models in various fields such as computer science, mathematical biology, and engineering. Computer science includes machine learning and statistical science. Mathematical biology includes neuroscience, medical science, cognitive science, psychophysics and bioinformatics/multiomics. Engineering includes biomedical engineering, signal processing, computer vision and robotics. Mathematical models are everywhere!</b>
Prof. Kazushi Ikeda Assoc. Prof. Takatomi Kubo Assist. Prof. Chie Hieida Assist. Prof. Yuzhe Li Assist. Prof. Renzo Roel Perez Tan Affiliate Prof. Junichiro Yoshimoto Affiliate Prof. Toshitaka Yamakawa Affiliate Assoc. Prof. Tomoya Tamei	Mathematical models, machine learning, computational neuroscience, cognitive science, biomedical signal processing
<b>Computational Systems Biology</b>	<b>We are incorporating state-of-the-art data modeling/manipulating techniques such as deep learning techniques to better our understanding of the system biology of plants. In collaboration with medical hospitals and other academic institutions, we are developing various biomedical technologies based on information technology and deep learning techniques.</b>
Prof. Shigehiko Kanaya Affiliate Prof. Hidehiro Iida Assoc. Prof. MD. Altaf-Ul-Amin Assoc. Prof. Naoaki Ono Affiliate Assoc. Prof. Tetsuo Sato Affiliate Assoc. Prof. Ming Huang	System biology, metabolic pathways, drug discovery, digital biomarkers, medical image processing, deep learning, computer aided diagnosis, proactive healthcare
<b>Computational Behavioral Neuroscience</b>	<b>To understand humans, we build behavioral models based on the information processing mechanism of the brain, investigate the principles of human behavior through verification using experimental and data-driven approaches, and conduct educational research on its application to society.</b>
Assoc. Prof. Saori Tanaka Affiliate Assist. Prof. Hiroyoshi Ogishima	Computational neuroscience, behavioral modeling, neuroimaging, computational psychiatry, reinforcement learning
Collaborative Laboratories	
<b>Communication</b>	<b>Our laboratory performs research on machine learning and data mining methods that extract valuable knowledge from various types of data. In particular, we are interested in developing methods that can learn from incomplete data, such as a small amount of data, data with many missing values, aggregated data, and noisy data.</b>
Adjunct Prof. Tomoharu Iwata Adjunct Assoc. Prof. Yusuke Tanaka	Machine learning, data mining, deep learning, meta-learning, social network analysis, learning from aggregated data, spatio-temporal analysis
<b>Computational Neuroscience</b>	<b>We aim to understand the human brain and to achieve new machine intelligence (artificial intelligence) based on brain information processing functions. We conduct research and educate students on computational neuroscience, cutting-edge machine intelligence and neurotechnology at ATR, an internationally recognized computational neuroscience center.</b>
Adjunct Prof. Motoaki Kawanabe Adjunct Assoc. Prof. Norikazu Sugimoto	Computational neuroscience, machine intelligence, robot learning, brain machine interface, cognitive function, neurofeedback, computational psychiatry, statistical modeling, multi-modal brain imaging, brain decoding
<b>Humanware Engineering</b>	<b>Our laboratory performs research on Humanware, which essentially extends the abilities of humans and supports better human life by the combination of sensor data and knowledge processing. We explore new research areas such as smart houses and robotics combined with human, social, and physical sciences.</b>
Adjunct Prof. Masashi Okada Adjunct Assoc. Prof. Yohei Nakata	Humanware, artificial intelligence, deep learning, edge AI, explainable AI, scalable AI, uncertainty in AI
<b>Symbiotic Systems</b>	<b>We design solutions that utilize image sensing and recognition technology to solve technical issues that contribute to solving real social issues. We study knowledge acquisition technology for artifact metrics and object authentication, and conduct research and education from prototypes to practical applications.</b>
Adjunct Prof. Rui Ishiyama Adjunct Assoc. Prof. Eiki Ishidera	Image recognition, artifact metrics, object recognition, laser speckle, knowledge acquisition, data collection, user interface, fine sensing, visualization
<b>Optical and Vision Sensing</b>	<b>Our laboratory performs research and educates students from both theoretical and practical perspectives, ranging from fundamental research to engineering. Our research results are applicable especially in the field of factory automation, healthcare, and social systems.</b>
Adjunct Prof. Masaki Suwa	Physics-based vision, vision-based 3D measurement, sensor calibration, object detection/recognition, machine vision algorithms

## Information Science

Collaborative Laboratories	
<b>Molecular Bioinformatics</b>	<p>We are developing bioinformatics methods and tools to explore the functions and mechanisms of biomolecules such as proteins. We aim to discover knowledge in the field of lifescience using information engineering techniques and to provide analysis methods that compensate for information deficiencies in experimental data.</p> <p>Adjunct Prof. Kentaro Tomii Adjunct Assoc. Prof. Kentaro Kawata</p> <p>Computational molecular biology, bioinformatics, omics, structural bioinformatics, genomics, data science, databases</p>
<b>Digital Human</b>	<p>Our laboratory researches both humans and robots for realizing inclusive systems where they can collaborate and co-evolve. Our research includes theoretical studies on human behavior and robot control, and empirical studies on practical social systems such as manufacturing factories and small stores where humans and robots co-exist.</p> <p>Adjunct Prof. Mitsunori Tada Adjunct Prof. Yukiyasu Domae Adjunct Prof. Akihiko Murai</p> <p>Digital humans, robots, digital twins, motion analysis, motion synthesis, computer vision, pattern recognition, material handling, human-robot collaboration, human-robot co-evolution</p>
<b>Formal Verification</b>	<p>Formal verification methods are mathematically rigorous techniques for checking the correct behavior of computer systems. We study the formal verification of software systems dealing with uncertainties, e.g., to guarantee the safety of cyber-physical systems and to rigorously verify and explain statistical programs and artificial intelligence.</p> <p>Adjunct Prof. Reynald Affeldt Adjunct Assoc. Prof. Yusuke Kawamoto</p> <p>Programming languages, formal verification, logic, type theory, proof assistants, Coq, algebra, analysis, probability, statistics</p>
<b>High Reliability Software System Verification</b>	<p>Our laboratory is focused on research into software verification methodologies to achieve high reliability and safety in software that must function properly under extreme environmental conditions. The research outcome will be expected to apply to practical use for systems that require high reliability not only in space systems but also in social core infrastructures.</p> <p>Adjunct Prof. Naoki Ishihama</p> <p>Highly reliable software systems, safety systems, verification methodology, safety assurance methodologies, reliability</p>
<b>Multilingual Knowledge Computing</b>	<p>Our laboratory belongs to Fujitsu Limited. Artificial Intelligence (AI) today uses vast amounts of data to make decisions. We are researching and developing such AI technologies including knowledge computing and its application that makes use of knowledge extracted from multilingual text with natural language processing. One of our principal objectives is to take AI to new levels and create new value for society and we are aiming to realize AI that will support greater business growth and efficiency for our customers.</p> <p>Adjunct Prof. Tomoya Iwakura Adjunct Assoc. Prof. Yuchang Cheng</p> <p>Artificial Intelligence (AI), natural language processing, knowledge computing, knowledge graphs</p>
<b>Intelligent Robot Dialogue</b>	<p>We research dialogue functions and intelligent systems for communication robots, roughly divided into three categories: understanding, control, and generation. To realize dialogue robots working in the real world, multimodal situation understanding (grounding) using language, speech, and images is necessary. The generative system of the robot utilizes multimodal expressions such as text, speech, images, and robot movements. We also study dialogue control mechanisms: reasoning, decision making, and inference on the knowledge base.</p> <p>Adjunct Prof. Koichiro Yoshino Adjunct Assist. Prof. Seiya Kawano</p> <p>Dialogue systems, dialogue robots, natural language processing, language understanding, multimodal processing, knowledge acquisition, inference, dialogue management, language generation, reinforcement learning</p>
<b>Multimodal Environment Recognition</b>	<p>We promote research on computer vision and pattern recognition using sensors that observe the robot's surrounding environment. In particular, we focus on understanding the 3D environment, recognizing and tracking objects, understanding the details of people around the robot, and integration of multiple modalities.</p> <p>Adjunct Prof. Yasutomo Kawanishi Adjunct Assist. Prof. Motoharu Sonogashira</p> <p>Computer vision, pattern recognition, robot vision, surveillance, environment recognition, object recognition, person recognition, activity understanding, multimodal integration</p>
<b>Multilingual Natural Language Processing</b>	<p>Multilingual natural language processing is an important technology that is essential for domestic and international information distribution. This laboratory conducts research on systematic methods that can be applied to any language by clarifying language independence and language dependence for multiple languages, and conducts education and research on scalable algorithms that make full use of large-scale computational resources targeting various language data. The site of "Min'na no Jidou Hon'yaku @ TexTra" developed by the National Institute of Information and Communications Technology will be used for outreach activities.</p> <p>Affiliate Prof. Eiichiro Sumita Affiliate Assoc. Prof. Chen Chen Ding</p> <p>Natural Language Processing, Multilingual Information Processing, Computational Linguistics, Machine Translation, Large-Scale Computing, Multimodal Information Processing</p>

## Biological Science

Plant Biology Laboratories	
<b>Plant Developmental Signaling</b>	<p>We study molecular and genetic mechanisms of plant development and growth control in response to environmental factors using Arabidopsis and liverworts as model systems. We develop unique microscopic systems and image processing techniques to analyze dynamic changes in the growth and functions of plant organs.</p> <p>Prof. Keiji Nakajima Assist. Prof. Tatsuaki Goh</p> <p>Plant development, environmental response, roots, sexual reproduction, evolution, Arabidopsis, liverwort, live imaging, computer vision</p>
<b>Plant Metabolic Regulation</b>	<p>Research and education on regulatory mechanisms of plant cell differentiation, cell wall, and molecule transport, mechanisms to control plant function, metabolism, and dynamics, and the creation of useful GM plants and trees such as light emitting trees, in order to solve environmental and energy problems and contribute to industry, through the utilization of woody biomass.</p> <p>Prof. Taku Demura Assist. Prof. Tadashi Kunieda Assist. Prof. Miya Mizutani</p> <p>Woody biomass, plant cell wall, molecular breeding, mechanical property of plant, regulation of molecule transport</p>
<b>Plant Growth Regulation</b>	<p>Our laboratory studies the mechanisms of DNA polyploidization, stress response and genome maintenance that support sustained plant growth under changing environments. We will contribute to the development of technologies that increase plant biomass and food production, thereby solving global environmental issues.</p> <p>Prof. Masaaki Umeda Assist. Prof. Shiori Aki Assist. Prof. Zhang Ye</p> <p>Plant organ growth, cell cycle, DNA polyploidization, biomass, environmental stress, DNA damage response, genome maintenance, phytohormone, signal transduction, chromatin structure, epigenetics</p>
<b>Plant Stem Cell Regulation and Floral Patterning</b>	<p>We are interested in a holistic view of gene regulation in plant reproduction, which leads to developmental robustness and coordination. We explore signaling and epigenetic control in stem cell maintenance, environmental response and fertilization. Our students work at the frontiers of plant molecular genetics, developing their research, presentation and writing skills.</p> <p>Prof. Toshiro Ito Assoc. Prof. Nobutoshi Yamaguchi Assist. Prof. Makoto Shirakawa Assist. Prof. Yuko Wada</p> <p>Flower development, transcription factors, epigenetics, histone modification, hormone signaling, transcriptomes, epigenomes, molecular breeding, chemical biology, synthetic biology</p>
<b>Plant Physiology</b>	<p>Focusing on the circadian clock and photoperiodism, our laboratory conducts theoretical and experimental research and education on how, when and where plants perceive time and seasons, and how they use this information to control their responses.</p> <p>Prof. Motomu Endo Assist. Prof. Akane Kubota-Namima Assist. Prof. Nozomu Takahashi</p> <p>Circadian clock, photoperiodism, flowering, inter-organ/tissue/cellular communication, circadian rhythm, chronobiology, Arabidopsis, plants, plant physiology</p>
<b>Plant Immunity</b>	<p>Our laboratory performs research in the areas of plant-microbe interactions, with a focus on immune receptor signaling, signal integration between biotic and abiotic cues, plant-inhabiting microbes and microbiomes. We wish to elucidate the underlying molecular principles in model plants and crops, and apply the obtained knowledge to promoting sustainable agriculture.</p> <p>Prof. Yusuke Saijo Assist. Prof. Shigetaka Yasuda</p> <p>Plant immunity, plant-microbe interactions, pattern recognition receptors, damage sensing, microbiomes, symbiosis, plant pathology, abiotic stress, environments</p>
<b>Plant Symbiosis</b>	<p>Our laboratory focuses on research of parasitic plants, especially Orobanchaceae parasitic plants that cause severe agricultural damage in Africa. We use molecular biology, genetics, microscopy, and bioinformatic techniques to elucidate the mechanisms of plant parasitism. We also work on the other plant-organism relationships, including plant-nematode interaction, herbivory by the golden apple snail on rice, plant and arbuscular mycorrhizal fungi interaction.</p> <p>Prof. Satoko Yoshida Assist. Prof. Mina Ohtsu Assist. Prof. Shoko Inaba</p> <p>Parasitic plants, Striga, haustorium formation, molecular genetics, microscopy, transcriptome, genome analysis, evolution, chemical biology</p>
<b>Plant Secondary Metabolism</b>	<p>Our laboratory focuses on the study of chemical diversity and metabolic polymorphism of plant secondary (specialized) metabolism by translational analysis of genomics, transcriptomics and mass spectrometry-based metabolomics, as well as functional annotation of key genes corresponding to the production of active phytoprotectants moderating environmental stress in plants.</p> <p>Prof. Takayuki Tohge Assist. Prof. Shinichiro Komaki</p> <p>Plant metabolism, chemical diversity, metabolic polymorphism, environmental adaptation, integrative omics approaches, comparative omics, cross-species comparison, genomic synteny, metabolic engineering, model plant to crop</p>
<b>Plant Regeneration and Morphogenesis</b>	<p>Why can plants readily regenerate their bodies upon injury? We pursue the secrets of plants' regenerative capacity using molecular genetics, live imaging and single cell transcriptome analyses. Uncovering the secrets of plants' regenerative capacity will potentially benefit human life by improving various aspects of agricultural biotechnology including grafting and tissue culture.</p> <p>Assoc. Prof. Momoko Ikeuchi</p> <p>Regeneration, cellular pluripotency, developmental plasticity, tissue cultures, grafting, imaging, transcriptomes, epigenetics, Arabidopsis thaliana</p>

## Biological Science

Biomedical Science Laboratories	
<b>Functional Genomics and Medicine</b>	<b>All the faculty members in our laboratory, Ishida, Oka, and Matsuda, were educated and trained in medical schools. Therefore, as we focus on human diseases, we investigate the molecular mechanisms involved in their development and novel therapeutic strategies to treat them.</b>
Assoc. Prof. Yasumasa Ishida Assist. Prof. Chio Oka Assist. Prof. Eishou Matsuda	PD-1, self-nonsel discrimination, cancer immunotherapy, HtrA1, age-related macular degeneration, CIBZ, methylated DNA-binding proteins
<b>Molecular Immunobiology</b>	<b>The innate immune system is the first line of host defense that detects invading pathogens. However, aberrant activation of innate immune responses is closely associated with exacerbation of inflammatory diseases. Our aim is to uncover mechanisms that control innate immune responses using tools of molecular and cell biology, bioinformatics and genetically modified mice.</b>
Prof. Taro Kawai Assist. Prof. Daisuke Ori	Innate immunity, inflammation, vaccines, adjuvant, autoimmunity, macrophages, dendritic cells, cell death, cancer, gene targeting
<b>Molecular Medicine and Cell Biology</b>	<b>Each type of cell has a specific shape that is determined by the plasma membrane. Our lab will focus on the mechanisms connecting the membrane to the cytoskeleton for varieties of cellular functions including migration, proliferation, extracellular vesicles, and various events associated with morphological changes, in various disease conditions. We will integrate cell biology, molecular biology, biochemistry, biophysics, and machine learning.</b>
Prof. Shiro Suetsugu Assoc. Prof. Tamako Nishimura Assist. Prof. Hiroki Kawana	Molecular cell biology, biochemistry, biophysics, data science, extracellular vesicles
<b>RNA Molecular Medicine</b>	<b>Our laboratory studies biogenesis and functions of regulatory small non-coding RNAs and tries to understand how they contribute to human health. We conduct bioinformatics analysis to extract important information from large amounts of sequencing data and perform biochemical experiments using cultured cells and model organisms to test hypotheses.</b>
Prof. Katsutomu Okamura Assist. Prof. Ren Shimamoto Assist. Prof. Masami Shiimori	MicroRNA, regulation of miRNA processing, transcriptomes, siRNA, Argonaute, RNA-dependent RNA polymerase
<b>Stem Cell Technologies</b>	<b>Our goal is to understand the mechanisms of tissue development from the viewpoint of stem cell differentiation. We are also interested in the tissue regeneration process because the tissue stem cells are activated and initiate differentiation upon damage.</b>
Prof. Akira Kurisaki Assist. Prof. Hitomi Takada Assist. Prof. Atsushi Intoh	Stem cells, differentiation, 3D culture, organoids, development and regeneration
<b>Developmental Biomedical Science</b>	<b>Our laboratory is interested in the molecular mechanisms of development of the vertebrate central nervous system, and use chick, mouse embryos, and mouse stem cells as model systems. We also elucidate the mechanisms for the functional maintenance of mature neurons.</b>
Assoc. Prof. Noriaki Sasai Assist. Prof. Takuma Shinozuka	Developmental biology, molecular biology, cell biology, central nervous systems, neurodegenerative disease, chicks, mice, embryonic stem cells
<b>Organ Developmental Engineering</b>	<b>We are researching the formation of organs using interspecies chimeric animals in which mouse and rat cells coexist in one body. Through this research, we investigate the essential factors for organ development and the correct function of organs.</b>
Assoc. Prof. Ayako Isotani Assist. Prof. Shunsuke Yuri	Interspecies chimera, organ formation, developmental engineering, regenerative medicine, genome editing

## Biological Science

Systems Biology Laboratories	
<b>Microbial Interaction</b>	<b>Our research focuses on the behavior and interactions of microorganisms, especially yeast, which is a representative producer of fermented foods such as alcoholic beverages and bread. By understanding eukaryotic cellular systems and harnessing the power of microorganisms, we aim to contribute to delicious and healthy food technology.</b>
Assoc. Prof. Daisuke Watanabe Assoc. Prof. Yukio Kimata Assist. Prof. Yuichi Morozumi Assist. Prof. Yukiko Nakase	Microbial ecology, microbial interaction, protein-protein interaction, signal transduction, TOR signaling, environmental response, ER stress response, food fermentation, yeast
<b>Environmental Microbiology</b>	<b>We study the unique metabolic capabilities of microorganisms at the cellular and molecular levels. Furthermore, we aim to develop technologies that contribute to solving environmental problems and the realization of a sustainable society by utilizing microbial functions. A recent focus is poly(ethylene terephthalate) biodegradation.</b>
Prof. Shosuke Yoshida Assist. Prof. Min Fey Chek	Microbiology, metabolic engineering, genomics, transcriptomics, enzymology, imaging, genetic engineering, microbial breeding, microbial evolution, microbial screening
<b>Structural Life Science</b>	<b>In cells, various proteins are involved in a variety of fundamental biological phenomena. To unveil such mechanisms coupled with dynamic interactions and structural changes of biomolecules, including proteins, we conduct basic research through structural biologic analyses in combination with other newly developed methods.</b>
Prof. Tomoya Tsukazaki Assist. Prof. Ryoji Miyazaki Assist. Prof. Ken Kitano	Protein science, structural life science, structural biology, protein structure, protein interaction, protein complexes, protein transport, molecular dynamics, molecular mechanisms, crystallography
<b>Gene Regulation Research</b>	<b>We are clarifying the principles of animal development and growth using mice and zebrafish as model systems. We bring together various technologies, including genetics, molecular biology, bioimaging technology, pharmacology, bioinformatics, mathematical modeling, and nanotechnology to tackle the mystery of life.</b>
Prof. Yasumasa Bessho Assoc. Prof. Takaaki Matsui Assist. Prof. Ryutaro Akiyama Assist. Prof. Norihiro Kitagawa Assist. Prof. Yasuko Inaba	Developmental biology, mice, zebrafish, live imaging, gene editing, body plans, transcription factors, biological clocks, collective behavior, regeneration
<b>Bioengineering</b>	<b>In our laboratory, we are performing research and education on the development of basic technology for efficiently producing useful materials such as biopharmaceuticals in plants and the elucidation of the mechanisms controlling the phenotype of plants in order to contribute to society through biotechnology.</b>
Prof. Ko Kato Assist. Prof. Shotaro Yamasaki Assist. Prof. Tomomi Wakabayashi Assist. Prof. Takehide Kato	Production of useful materials in plants, environmental response in plants, regulation of gene expression, bioinformatics, machine learning, adaptive evolution in plants
<b>Data-driven Biology</b>	<b>Our laboratory analyzes experimental biological data to build quantitative mathematical models and provide feedback for experimental design. We work to preprocess the data using domain knowledge, and then use machine learning and mathematical models to extract novel knowledge.</b>
Prof. Yuichi Sakumura Assist. Prof. Toshiya Kokaji	Cell migration, morphogenesis, tissue formation, trans-omics, disease diagnosis by exhaled breath, machine learning, quantitative modeling, mechanobiology, image analysis software development
Collaborative Laboratories	
<b>Molecular Microbiology and Genetics</b>	<b>Basic research and education activities focus on the development of a biorefinery, a facility that integrates biomass conversion and environment-friendly production of fuels and other useful chemicals. To achieve this, smart cell technologies combining bio- and digital biotechnologies, integrated omics analysis and metabolic conversion techniques are employed to develop new microbial functions.</b>
Adjunct Prof. Masayuki Inui Adjunct Assoc. Prof. Takahisa Kogure	Smart cell technologies, applied microbiology, bio-production, high-efficiency bioprocesses, regulation of gene expression, systems biology, molecular biology, genome engineering, culture engineering, metabolomic analysis, metabolic engineering

## Materials Science

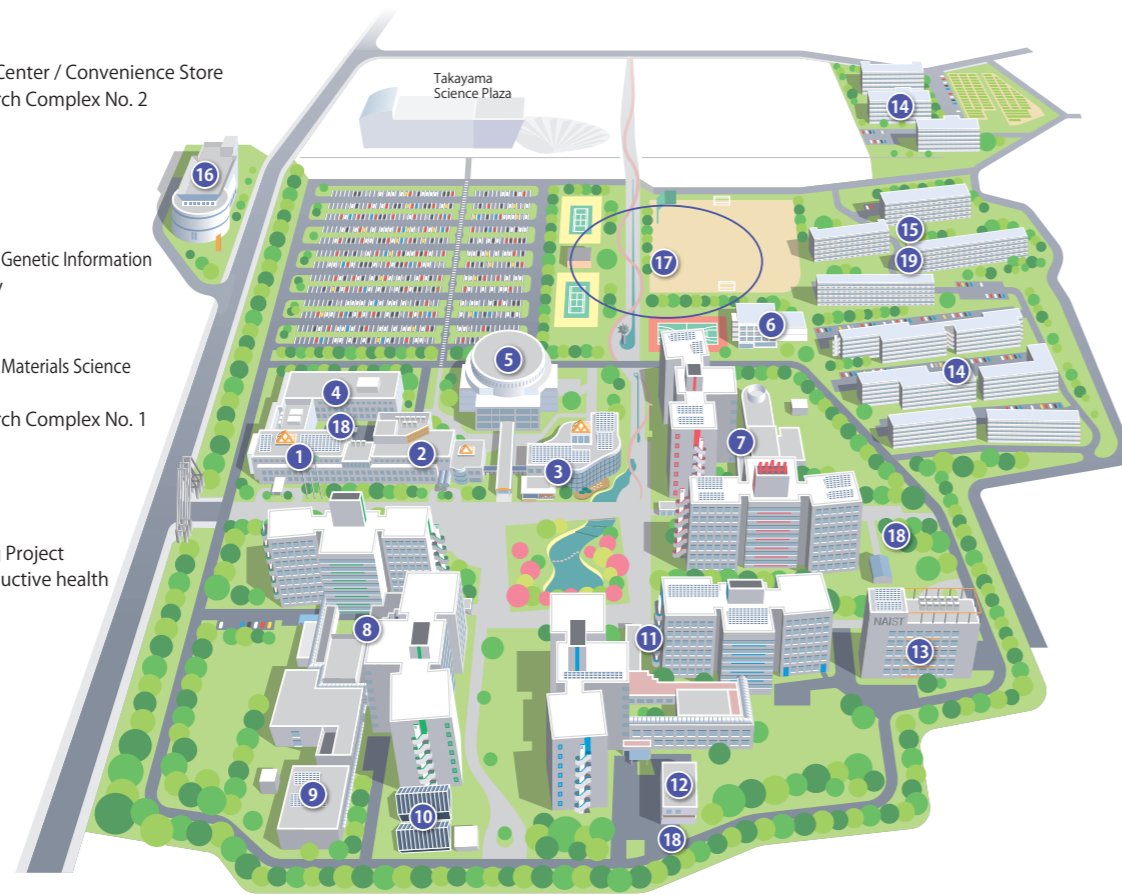
Core Laboratories	
<b>Bio-Process Engineering</b>	<p><b>Our laboratory promotes developmental research on high-precision and fast manipulation methodologies for biological materials, in which state-of-the-art laser technology is combined with microscope technologies. We have the world's top activities on cell manipulation and processing by femtosecond laser and have attracted attention as a pioneer of laser applications for biotechnology.</b></p> <p>Prof. Yoichiro Hosokawa Assoc. Prof. Yalikul Yaxiaer Assist. Prof. Yuka Tsuru Assist. Prof. Naomi Tanga</p> <p>Femtosecond lasers, atomic force microscopy, micro-fluidic devices, cell manipulation, cell processing, laser-induced shockwaves, bio-applications, cell sorters, fluorescence imaging, photoporation, laser-induced crystallization</p>
<b>Solid-state Information Physics</b>	<p><b>Our aim is to clarify atomic structures, electronic states, and derived physical properties for dopants in solids, thin films and interfaces on solid surfaces, and in addition, precisely controlled three-dimensional shapes surfaces by using various equipment and analysis methods (including original development) for materials research and education.</b></p> <p>Prof. Tomohiro Matsushita Assoc. Prof. Ken Hattori Assist. Prof. Sakura Takeda Assist. Prof. Yusuke Hashimoto Assist. Prof. Takanobu Jujo Assist. Prof. Yuta Yamamoto</p> <p>Atomic and electronic structures (dopants, thin films, surfaces, interfaces), three-dimensional shapes surfaces, photoelectron holography, electron diffraction, scanning tunneling microscopy, angle resolved photoelectron spectroscopy, electronic states, magnetism, luminescence, molecule adsorption and desorption, synchrotron radiation</p>
<b>Quantum Photo-Science</b>	<p><b>We develop techniques to manipulate the quantum properties of strongly-coupled systems, such as vibrational polaritons and cavity exciton polaritons. We utilize ultrafast laser pulses and apply optics-based experimental approaches to clarify and manipulate material properties from the viewpoint of quantum physics.</b></p> <p>Prof. Hiroyuki Katsuki Assist. Prof. (Joining in Apr. 2024)</p> <p>Coherent control, ultrafast spectroscopy, femtosecond laser, vibrational polariton, exciton polariton, two dimensional semiconductor, photo-induced phase transition, laser microscopy</p>
<b>Photonic Device Science</b>	<p><b>In our laboratory, we are conducting cross-disciplinary research, from the design of original optoelectronic devices based on microelectronics technology to their applications. Specifically, we are developing novel photonic devices and systems such as retinal prosthesis, implantable functional brain imaging devices, near-infrared color imaging, and visualization of high-frequency electric fields.</b></p> <p>Prof. Masakazu Nakamura Assoc. Prof. Kiyotaka Sasagawa Assist. Prof. Hironari Takehara</p> <p>Smart CMOS image sensors, implantable devices, retinal prosthesis, optogenetics, near-infrared imaging, lensless imaging, high frequency electric field imaging</p>
<b>Applied Quantum Physics</b>	<p><b>Our laboratory studies scintillators and storage phosphors for solid state ionizing radiation detectors, and the coverage is synthesis of materials (single crystal, transparent ceramic, glass, organic-inorganic perovskite, and powder), photophysics and radiation detector properties.</b></p> <p>Prof. Takayuki Yanagida Assoc. Prof. Noriaki Kawaguchi Assoc. Prof. Daisuke Nakauchi Assist. Prof. Takumi Kato</p> <p>Scintillators, scintillation detectors, dosimeters, thermally stimulated luminescence (TSL), optically stimulated luminescence (OSL), radiophotoluminescence (RPL), radiation detectors, phosphor, photoluminescence</p>
<b>Organic Electronics</b>	<p><b>Our laboratory pursues the development of novel electronic devices using organic materials based on applied physics and chemistry. Our research is unique in that we develop original research tools to characterize organic thin films and low-dimensional materials, and realize entirely new fabrication methods and structures of devices which are distinctive from conventional ones.</b></p> <p>Prof. Masakazu Nakamura Assoc. Prof. Hiroaki Bente Assist. Prof. Manish Pandey</p> <p>Organic electronics, energy harvesting, thermoelectric generators, solar cells, thin-film transistors, molecular orientation, Seebeck effect, thermal management, scanning probe microscopy, CNT, proteins, polymer semiconductors, hybrid perovskite</p>
<b>Photonic and Reactive Molecular Science</b>	<p><b>Our group investigates light/matter interactions to tackle innovative chemistry, promoting social progress and protecting the environment. We aim to cultivate students by developing creative, critical minds to shape tomorrow's molecular technology. Our focus encompasses innovative molecules for remote-controlled photo-induced stereo/enantio-selective catalysis, conversion of light information as well as light-energy with molecular photo-response. For this, we conduct advanced scientific research on synthetic organic chemistry, molecular photochemistry, fluorescence and phosphorescent materials and chiral light emitting molecules. Furthermore, from the perspective of organic reaction chemistry, our goal is the realization of green chemistry on the basis of carbon neutrality.</b></p> <p>Prof. Tsuyoshi Kawai Assoc. Prof. Tsumoru Morimoto Assist. Prof. Mihoko Yamada Assist. Prof. Marine Louis</p> <p>Photochromes, photo-triggered reactions, chirality, stereo/enantio-selective catalyses, circularly polarized luminescence, transition metal catalyst, future displays, light emitting devices, lanthanides, fluorine chemistry, carbon neutral, green chemistry, photopolymerization</p>
<b>Biomimetic and Technomimetic Molecular Science</b>	<p><b>We are designing and synthesizing molecules which can act as machines at the nanoscale, including motors, gears and nanocars. Thanks to the injection of energy (light or electron) these molecular machines can produce a controllable motion. We are also developing biologically-active molecules by mimicking natural molecular machines.</b></p> <p>Prof. Gwenael Rapenne Assoc. Prof. Kazuma Yasuhara Assist. Prof. Toshio Nishino</p> <p>Molecular machines, organic chemistry, coordination chemistry, gears, nanocars, bioactive molecules, polymer chemistry, artificial membranes, interface chemistry, amphiphiles</p>
<b>Functional Organic Chemistry</b>	<p><b>We focus on the development of functional organic materials including organic semiconductors, highly fluorescent dyes, near-infrared (NIR) dyes, and carbon nanomaterials. In particular, we are fascinated by beautiful and huge organic structures with high symmetry.</b></p> <p>Prof. Naoki Aratani</p> <p>Functional organic materials, nano-carbon chemistry, organic photochemistry, emissive dyes, molecular design</p>

## Materials Science

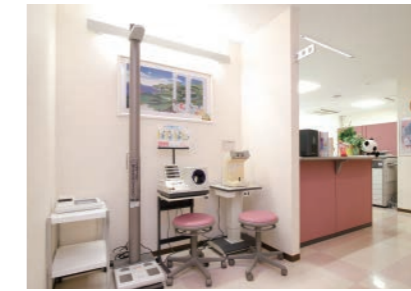
Core Laboratories	
<b>Functional Supramolecular Chemistry</b>	<p><b>We are performing new interdisciplinary research in chemistry and biology. Based on the chemical knowledge of the functions and structures of biomolecules at molecular level, our laboratory focuses on the elucidation of protein mechanisms and design/application of bio-supramolecules using various analytical methods, protein engineering techniques, and organic syntheses.</b></p> <p>Prof. Shun Hirota Assoc. Prof. Takashi Matsuo Assist. Prof. Naoya Kobayashi Assist. Prof. Tsuyoshi Mashima</p> <p>Supramolecules, proteins, nanobiotechnology, bioinorganic chemistry, protein science, biophysical chemistry, biofunctional chemistry, organic synthesis, coordination chemistry, catalytic reactions, function control, enzymatic reactions, metalloprotein, chemical modification, genetic mutation, analytical methods, pharmacy, hemoglobin, antibodies, protein drugs, artificial enzymes, computer-based protein design</p>
<b>Complex Molecular Systems</b>	<p><b>Our laboratory focuses on the autonomous assembly-disassembly phenomena exhibited by complex molecular systems of proteins. Based on protein science and biophysics, we conduct research and education on the understanding of protein-molecule complex systems as potential targets for drug discovery and the development of next-generation protein-molecule complex materials.</b></p> <p>Prof. Hironari Kamikubo Assoc. Prof. Sachiko Toma-Fukai Assist. Prof. Yoichi Yamazaki Assist. Prof. Kento Yonezawa</p> <p>Protein science, biophysics, structural biology, protein design engineering, x-ray solution scattering, x-ray &amp; neutron crystallography, spectroscopy, recombinant DNA technology, structural proteins, protein transport systems, signal transduction systems</p>
<b>Nanomaterials and Polymer Chemistry</b>	<p><b>Based on the concepts of "molecular technology" and "precise polymerization", we prepare various polymer structures and create new polymer materials by controlling molecular design, polymer synthesis and polymer-polymer interactions. The target of their application is biocompatible materials, energy related materials, and environmentally friendly materials.</b></p> <p>Prof. Hiroharu Ajiro Assoc. Prof. Tsuyoshi Ando Assist. Prof. Nalinthip Chanthaset Assist. Prof. Hiroaki Yoshida</p> <p>Biomaterial, degradable polymers, environmentally friendly material, energy related material, polymer synthesis, molecular design, nano structure, stimuli responsive property, gels, films</p>
<b>Materials Informatics</b>	<p><b>In our laboratory, we study materials informatics. Our goal is to develop informatics analysis methods and their applications to improve material properties. In material science, experiments and theories have developed by interacting with each other. We are particularly interested in the technology that integrates and utilizes them.</b></p> <p>Prof. Mikiya Fujii Assoc. Prof. Tomoaki Takayama Assist. Prof. Yosuke Harashima Assist. Prof. Shogo Takasuga</p> <p>Materials informatics, machine learning, conditional generative adversarial networks, data assimilation, computational quantum chemistry, first-principles calculation, photocatalysts</p>
Core Laboratories (Cooperative)	
<b>Data Driven Chemistry</b>	<p><b>Chemoinformatics is a research area where chemical problems are tackled using tools coming from informatics. Our primary mission is to develop useful data analysis methodologies for experimental chemists/ biologists by incorporating theory and data. The methods developed by our group have a wide range of applications from drug discovery to process control in chemical plants.</b></p> <p>Assoc. Prof. Tomoyuki Miyao Assist. Prof. Jasial Swarit</p> <p>Chemoinformatics, data-driven chemistry, virtual screening, soft sensors, chemical plant operation, drug discovery, in-silico modeling, machine learning, data analysis, process informatics</p>
<b>Metrology Informatics</b>	<p><b>We leverage data science to advance material analysis and metrology techniques essential for creating cutting-edge semiconductor materials and devices. Utilizing these innovative technologies, we aim to address technical challenges and uncover fundamental principles critical to the realization of advanced materials and devices.</b></p> <p>Prof. Shigetaka Tomiya Assoc. Prof. Zentarō Akase</p> <p>Metrology informatics, materials analysis, data science, electron microscopy, semiconductor materials and devices</p>
Core Laboratories (Collaborative)	
<b>Functional Polymer Science</b>	<p><b>Our laboratory focuses on material discovery and formulation design for ocular drug delivery in the treatment of ocular diseases. We explore the innovative DDS platform to efficiently penetrate target ocular tissues and educate students by synthesizing, analyzing, and evaluating novel materials, such as functional polymers and cell-penetrating peptides.</b></p> <p>Adjunct Prof. Komei Okabe Adjunct Assoc. Prof. Kazuhiro Kudo</p> <p>Drug delivery systems (DDS), ophthalmology, formulation design, chemical synthesis, functional polymers, cell penetrating peptides</p>
<b>Ecomaterial Science</b>	<p><b>The Ecomaterial Science Laboratory, staffed by researchers of the Research Institute of Innovative Technology for the Earth (RITE), provides research and education on fundamental technologies to solve global warming issues. We endeavor to develop advanced materials for CO<sub>2</sub> capture and H<sub>2</sub> energy production, such as zeolite and amine-based materials.</b></p> <p>Adjunct Prof. Katsunori Yogo Adjunct Prof. Junichiro Kugai Adjunct Assoc. Prof. Tomohiro Kinoshita</p> <p>Global warming, CO<sub>2</sub> capture, CCUS, zeolites, amine-based materials, mesoporous materials, polymeric materials, metal organic frameworks (MOF), inorganic membranes</p>
<b>Advanced Functional Materials</b>	<p><b>Based on material creation and morphology control technologies, we focus on key issues facing next-generation industries. To develop innovative secondary battery materials that will be the key to realize next-generation energy devices, we are developing battery materials, solid-solid interface control technology, and sheet cells. In addition, to develop new biodegradable materials adapted to the global environment, we will develop alternative materials to plastics through precision polymerization of polylactic acid using our unique organic catalysts and primary structure control.</b></p> <p>Adjunct Prof. Masanari Takahashi Adjunct Prof. Joji Kadota Adjunct Assoc. Prof. Mari Yamamoto</p> <p>All solid-state lithium-ion secondary batteries, high energy density, interface control, biodegradable polymers, accurate polymerization, polylactic acid</p>

# Campus Map & Facilities

- ① Administration Bureau
- ② Library
- ③ University Union / Health Care Center / Convenience Store
- ④ Interdisciplinary Frontier Research Complex No. 2
- ⑤ Millennium Hall
- ⑥ Guesthouse Sentan
- ⑦ Information Science Complex / Information Initiative Center
- ⑧ Biological Science Complex / Research and Education Center for Genetic Information
- ⑨ Animal Experimentation Facility
- ⑩ Botanical Greenhouses
- ⑪ Materials Science Complex / Research and Education Center for Materials Science
- ⑫ Bio Nano Process Laboratory
- ⑬ Interdisciplinary Frontier Research Complex No. 1
- ⑭ Student Dormitories
- ⑮ Staff Residences
- ⑯ Administration Bureau Annex
- ⑰ Sports facilities
- ⑱ Keihanna NAISMoN Car-sharing Project
- ⑲ Rooms for childcare and reproductive health



**Convenience store ③**  
The on-campus convenience store is open seven days a week and, in addition to foods and beverages, stocks daily amenities and offers utility and other payment services.



**Health Care Center ③**  
The Health Care Center staff includes a doctor, nurses and counselors, and they offer medical examinations and assistance, health guidance and mental health counseling for students, faculty and staff.



**Guesthouse Sentan ⑥**  
The guesthouse offers reasonable short-term on-campus accommodations for visiting students, researchers, etc. to facilitate collaboration with both international and domestic partners.



**Sports facilities ⑰**  
NAIST maintains tennis courts, a basketball/volleyball court, a field for soccer/baseball and a room for table tennis, and the administrative offices offer rental equipment to students, faculty and staff.

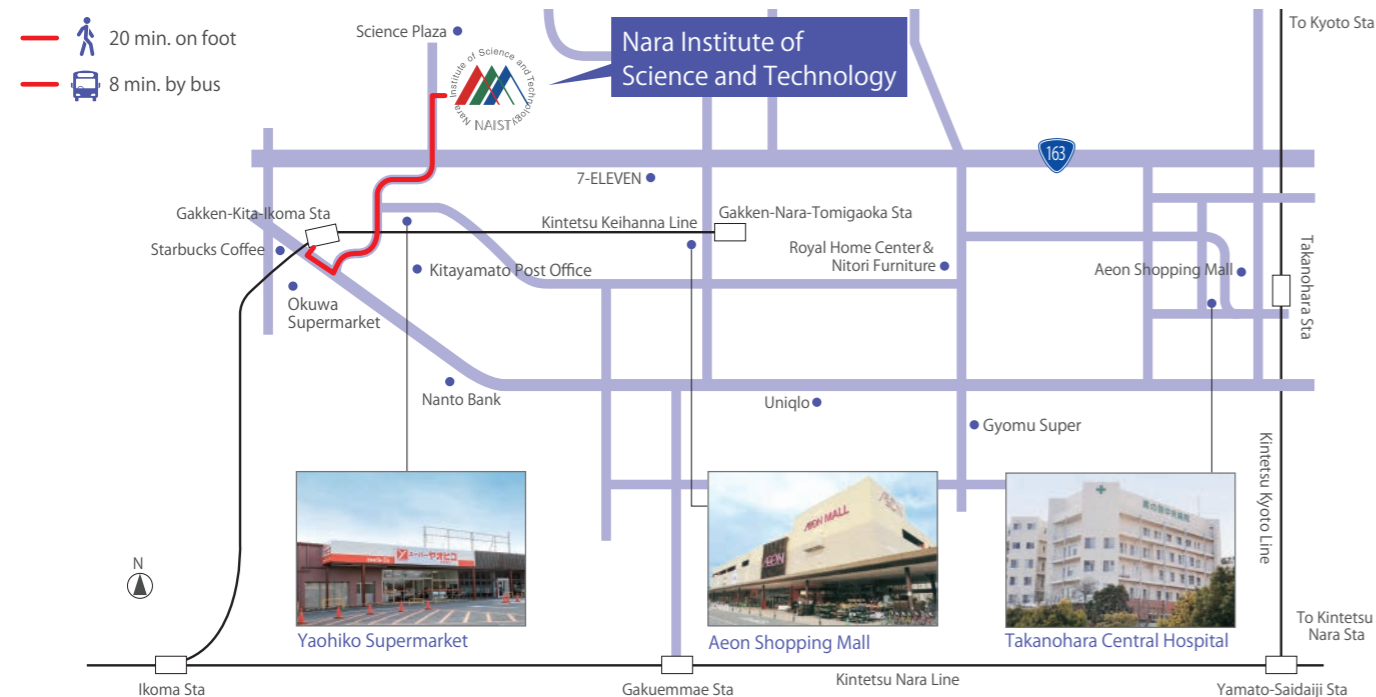


**Keihanna NAISMoN Car-sharing Project ⑱**  
As part of research being performed at NAIST, a car-share system called NAISMoN featuring electric vehicles was established. With 6 charging stations on campus and one ATR premises in Keihanna area along with an auction-based system, the project is thought to create a sustainable society within NAIST and Keihanna area communities.



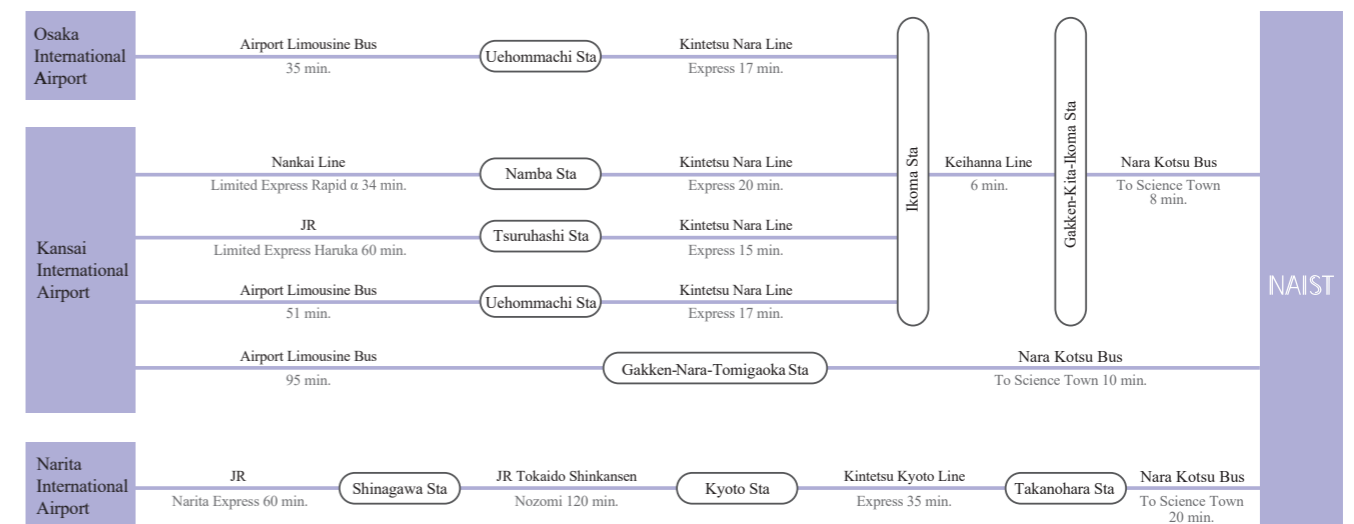
**Rooms for childcare and reproductive health ⑲**  
These rooms have been established along with various child and family care support programs as part of NAIST's efforts to support female faculty and employees' work-life balance.

# Around Campus



# Reaching NAIST from Domestic Airports

NAIST is only 1.5 hours away from the Osaka International Airport and the Kansai International Airport





Nara Institute of Science and Technology  
8916-5 Takayama-cho, Ikoma, Nara 630-0192 JAPAN

NAIST Website



Division of  
Information Science



Division of  
Biological Science



Division of  
Materials Science



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