SINIC X

Company Deck
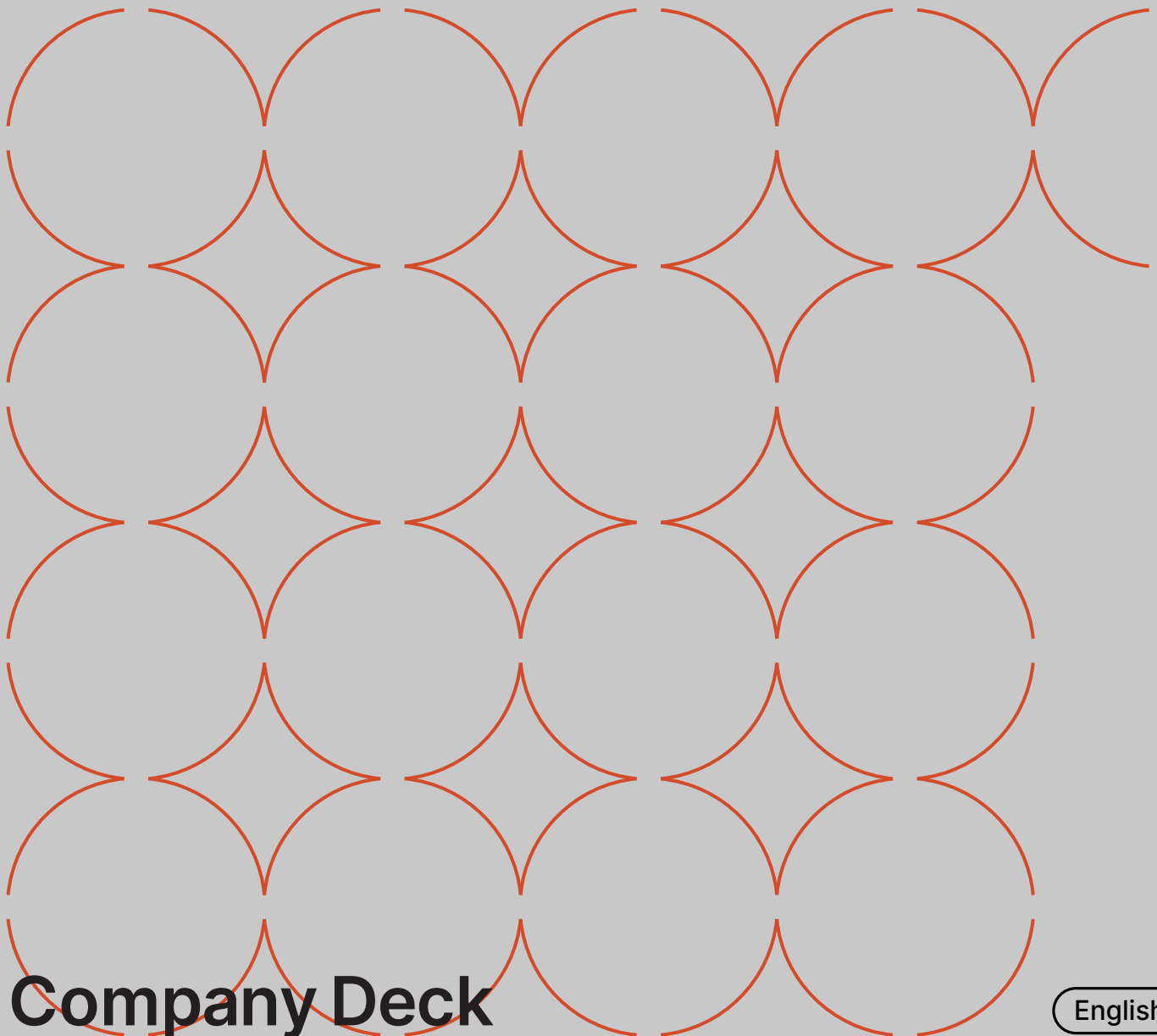
SINIC X
about (us)

We make the near future happen

Backcasting from the near future design by SINIC, a technology management style inherited in OMRON Group from the time of the founder Kazuma Tateishi.

For that OMRON SINIC X (OSX) was born in 2018 at Hongo, Tokyo, with the mission of bringing in the innovative technologies needed by society in the near future and creating a concrete architecture for their realization.

At OSX, we will promptly grasp the signs of transitions in the world and social issues, and create essential research questions and attractive research issues that will be the bottleneck of the solution. We will proceed with research based on the belief that by sharing research issues rooted in social issues in the community consists of academia and industry, we can achieve a great impact on moving society and innovating people's lifestyles.

Message
Motivation at OSX Launch

OSX was originally being prepared with the idea of "establishing an AI research base." However, as the discussions were repeated within OMRON, the concept was brushed up, and the concept developed into a research base for designing the near future, envisioning the technologies necessary for that purpose, and creating core innovative technologies. Originally, OMRON has frontieered numerous innovations such as signal control systems and automatic ticket gates, leading the world by new solutions, based on the theory of future prediction (SINIC) established by the founder. The founder called this "creation of social needs" and it is still rooted in OMRON's corporate philosophy. The organization OSX was founded with the desire to update the future prediction method called SINIC to suit the new era and make it a unique base for creating social needs based on innovative technology.
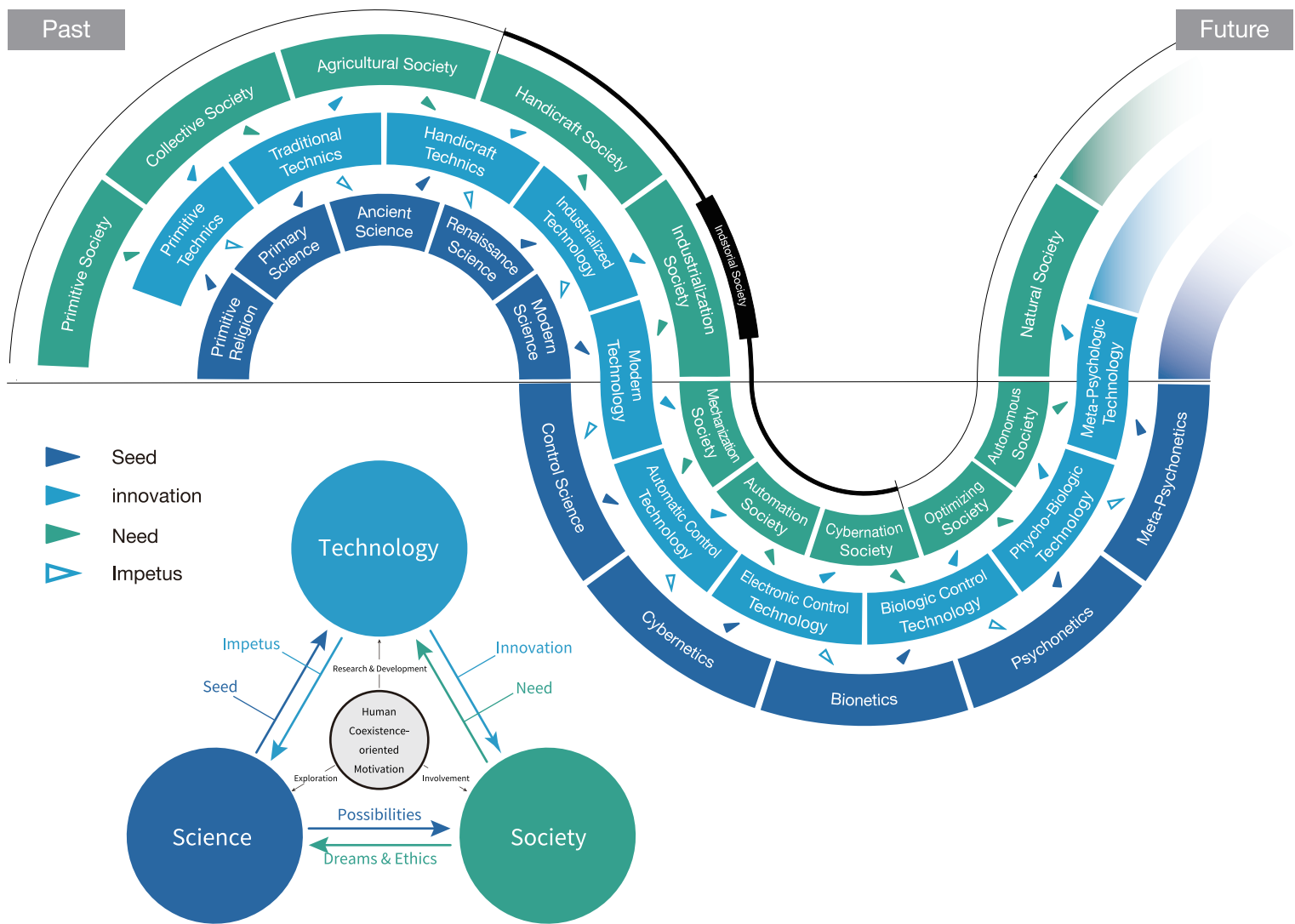
However, it is extremely difficult for OMRON members, including myself, to anticipate technological evolution in the decades ahead, which is discontinuous and increasing in complexity, and to design the near future. Therefore, I came to have the desire to design OSX as "Dejima", the place for open innovation and the near future of innovation technology starting point while inviting excellent researchers and experts from domestic and interenational community.

What OSX is aiming for in the future

"Near-future design" is not just dreaming of the future. OSX shows both a concrete picture of the future and the path towards its realization. Currently, the intersection of AI, robotics, sensing, etc. is at the center of attention to, but in SINIC theory, in order to realize the "the Autonomous Society", the technical areas that need to be deepened are expanding steadily, such as communication between humans and machines, machine embodiments and the handling of knowledge and information flow. I would like to deepen discussions with people outside the company rather than keeping it closed inside the company.

In terms of human resources, we would like to continue to expand diversity more than ever. After its establishment, researchers from more than 10 countries have already come to OSX in the form of internships and have worked hard together. In the future, we plan to invite even more diverse human resources from all over the world to create seeds for innovative technologies.

President and CEO Masaki Suwa

Agricultural Society
Collective Society
Handicraft Society
Traditional Technics
Handicraft Technics
Primitive Society
Primitive Technics
Primary Science
Ancient Science
Renaissance Science
Industrialized Technology
Industrialization Society
Primitive Religion
Modern Science
Modern Technology
Mechanization Society
Control Science
Automatic Control Technology
Automation Society
Cybernation Society
Optimizing Society
Autonomous Society
Natural Society
Meta-Psychologic Technology
Electronic Control Technology
Cybernetics
Biologic Control Technology
Phycho-Biologic Technology
Psychonetics
Meta-Psychonetics
Bionics
Bionetics

Industrial Society

Seed
innovation
Need
Impetus

Technology
Impetus
Innovation
Seed
Research & Development
Need
Human Coexistence-oriented Motivation
Exploration
Involvement
Science
Possibilities
Dreams & Ethics
Society

exploring ⟨SINIC⟩ theory

SINIC* Theory:
Predicting the Future Through the Interrelationships of Science, Technology, and Society

*SINIC: Seed-Innovation to Need-Impetus Cyclic Evolution

Our founder, Kazuma Tateishi, believed that solving social issues through business to create a better society required the ability to anticipate future social needs. He believed that a company needed a compass to help predict the future.

As our compass, Mr. Tateishi formulated the SINIC predictive theory, which projects the future from the cycle of interrelationships between Science, Technology, and Society. OMRON first announced this predictive theory to the world at the International Future Research World Congress in 1970. Since then, the SINIC Theory has been our compass for projecting into the future.
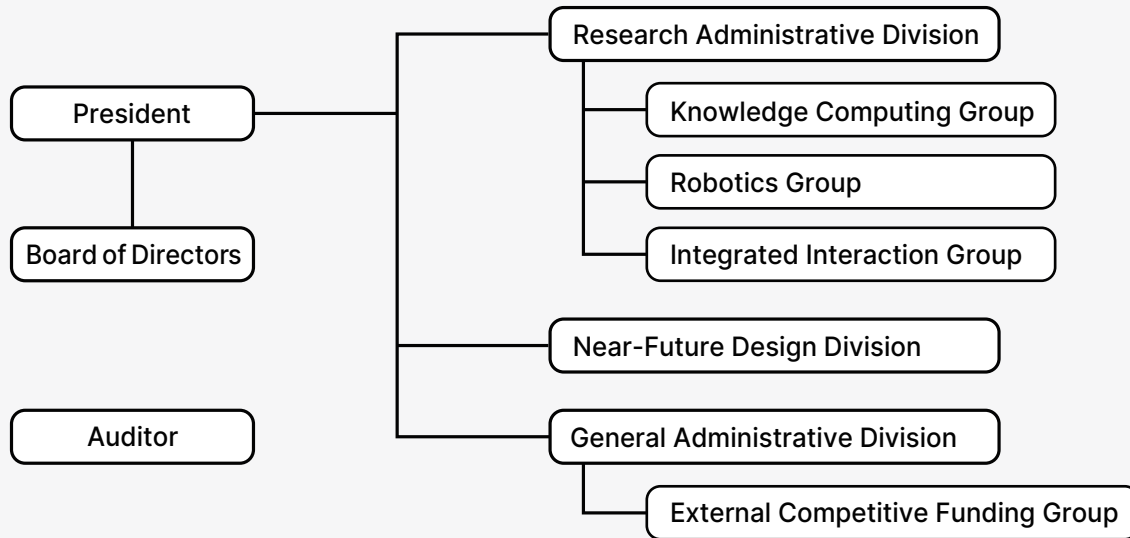
The basic philosophy behind the SINIC Theory is that the interrelationships among science, technology, and society lead to social change. Let us use the Cybernation Society as an example. We can see how the rise of cybernetics, computer science, and other synthetic sciences in the 1940s became the seeds of electronic control technologies, pro-

gramming, and other technologies. These technologies gave rise to the PC and the internet, leading to the advent of the Cybernation Society.
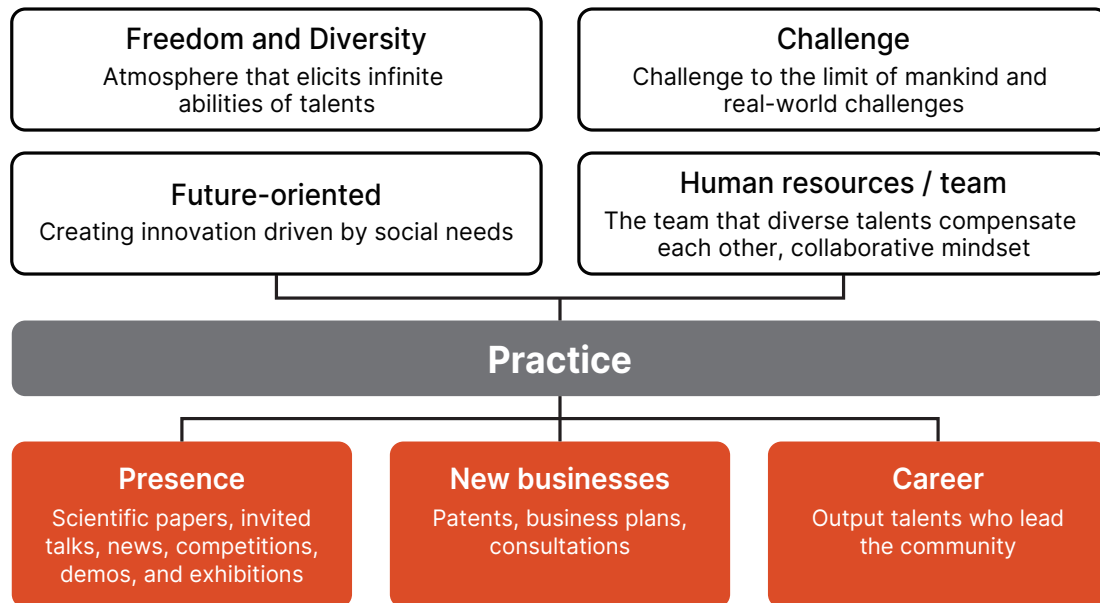
Society demanded more data, along with more accurate and rapid data analysis. These demands forced us to produce CPUs and GPUs with faster processing power, make advancements in deep learning and other artificial intelligence technologies, and reach higher levels of sophistication in neuroscience and cognitive science.

At a time when society is undergoing significant change and the future seems uncertain, we openly share the SINIC theory and promote its use as social knowledge for future creation through discussions with various people.

⟨OSX⟩ structure

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President ─────┬──────── Research Administrative Division
               │              ├── Knowledge Computing Group
Board of       │              ├── Robotics Group
Directors      │              └── Integrated Interaction Group
               │
               ├──────── Near-Future Design Division
Auditor        │
               └──────── General Administrative Division
                              └── External Competitive Funding Group
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- President
- Board of Directors
- Auditor

- Research Administrative Division
  - Knowledge Computing Group
  - Robotics Group
  - Integrated Interaction Group
- Near-Future Design Division
- General Administrative Division
  - External Competitive Funding Group

OSX Virtual Office

⟨Scope⟩

Freedom and Diversity
Atmosphere that elicits infinite abilities of talents

Challenge
Challenge to the limit of mankind and real-world challenges

Future-oriented
Creating innovation driven by social needs

Human resources / team
The team that diverse talents compensate each other, collaborative mindset

Practice

Presence
Scientific papers, invited talks, news, competitions, demos, and exhibitions

New businesses
Patents, business plans, consultations

Career
Output talents who lead the community

Future-oriented
Each of our diverse research topics aims to be one piece of the puzzle to create the society of the future.

Social-issue-oriented
We will consider what the near future should be, the major social issues it is rooted in, and determine the obstacles in its way.

Impact-oriented
Then, among these obstacles we identify the underlying, essential technical issues that have wide-ranging influence, and consider how to solve them. In this way, we aim to achieve both social and research impact.

Open-minded
To find an optimal solution, often it is not a good idea to keep a problem to yourself. We often connect with collaborators who work on similar problems and solve them with the power of the community.

Trade-on minded
We aim to improve the technology by raising the trade-off curve one step by balancing the two conflicting properties, rather than adjusting the trade-off.

Interdisciplinary field emphasis
We aim at innovations by integrating interdisciplinary fields.

‹Domains›
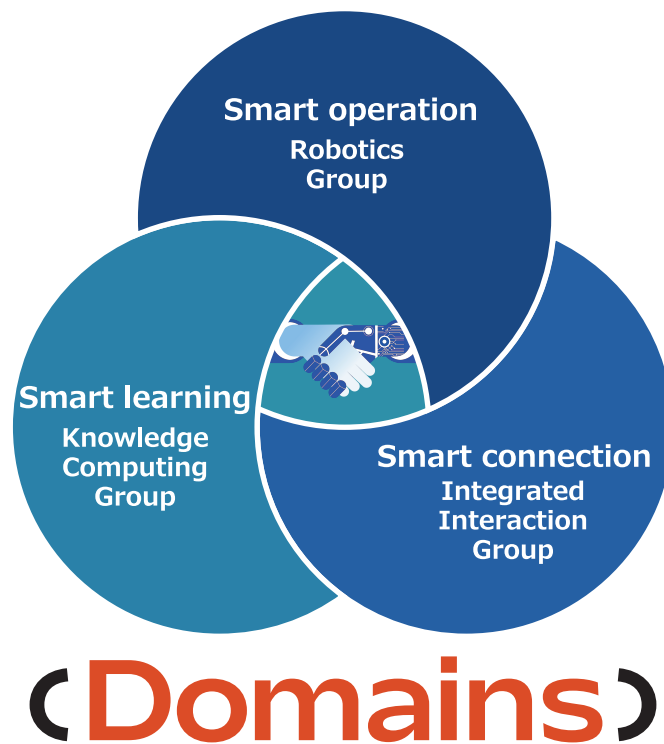
OMRON Group is advancing R&D to deepen the concept of cooperation and harmony between humans and machines. At OSX, in order to clarify and embody this concept, we are conducting research to bring humans and machines, as well as humans and humans, by realizing the following technologies:

・Smart learning：Knowledge Computing Group
・Smart operation：Robotics Group
・Smart connection：Integrated Interaction Group

Knowledge Computing Group

The advancement of technology fundamentally relies on people sharing knowledge and experiences, and reusing them collaboratively. One of our missions is to shape "smart learning" in the near-future society by extending this endeavor into human-machine and machine-machine interactions through computational technologies. To this end, we conduct research focused on technologies to accurately interpret information accumulated in various data formats, transform it into easily reusable representations, and foster insights.
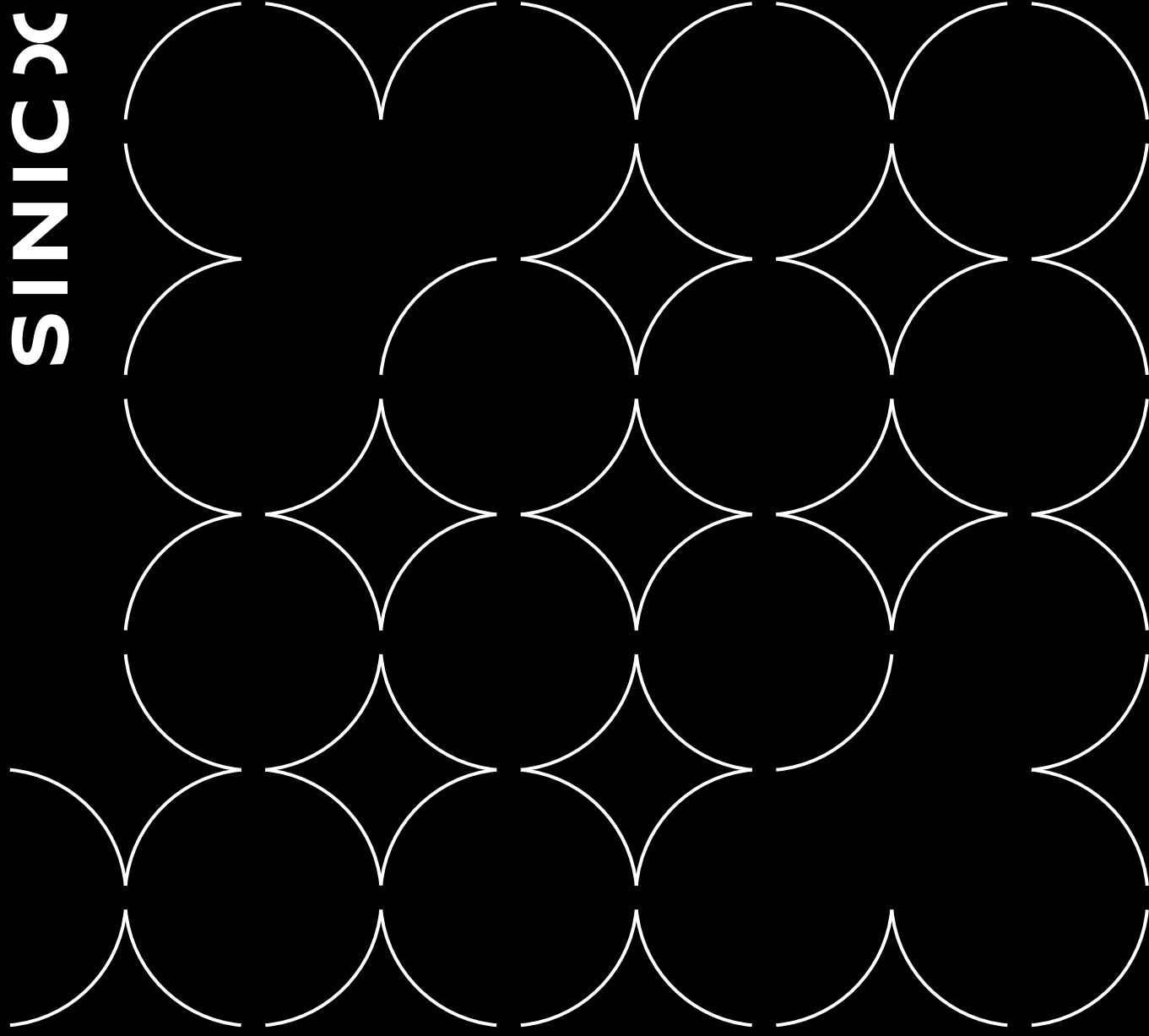
Robotics Group

Our mission is to create "smart operation" robots with intelligence capable of flexible adaptation and bodies easily accepted by society to promote the societal implementation of robots. To achieve this mission, we conduct research from both learning control and hardware perspectives, mainly focusing on robot learning that enables robots to complete various tasks through trial-and-error or minimal instructions from humans, as well as on soft and lightweight robot designs that allow safe interaction with the environment and coexistence with humans.

Integrated Interaction Group

By integrating various research fields centered on AI technology, we have a mission to design new relationships and better conditions between human-machine, human-human, and machine-machine, and propose technologies and mechanisms to solve social problems and satisfy latent needs. We are engaged in research to "smartly connect" humans and machines, such as technologies to adapt robots to people's living spaces, to augment and support communication between people, and to plan actions for robots to work together cooperatively.