



# ICONIP 2025

32nd International Conference on Neural Information Processing  
35th Annual Meeting of Japanese Neural Network Society

**November 20-24, 2025**

Okinawa Institute of Science and Technology (OIST), Japan

## Keynote Speakers

Asako Kanezaki, Institute of Science Tokyo  
Yew Soon Ong, Nanyang Technological University  
Jun Tani, Okinawa Institute of Science and Technology

APNNS, JNNS, OIST



<https://iconip2025.apnns.org/>



## Welcome to ICONIP 2025 Okinawa!

It is our great pleasure to hold ICONIP 2025, the joint meeting of the 32nd International Conference on Neural Information Processing of the Asia Pacific Neural Network Society (APNNS) and the 35th Annual Meeting of the Japanese Neural Network Society (JNNS), at Okinawa Institute of Science and Technology (OIST).

Since the last pandemic, ICONIP has been held in online or hybrid format, but this year, the main conference is held in a fully in-person format. We believe unexpected encounters and spontaneous discussions are the most exciting and important aspects of conferences, and we hope ICONIP will provide ample opportunities.

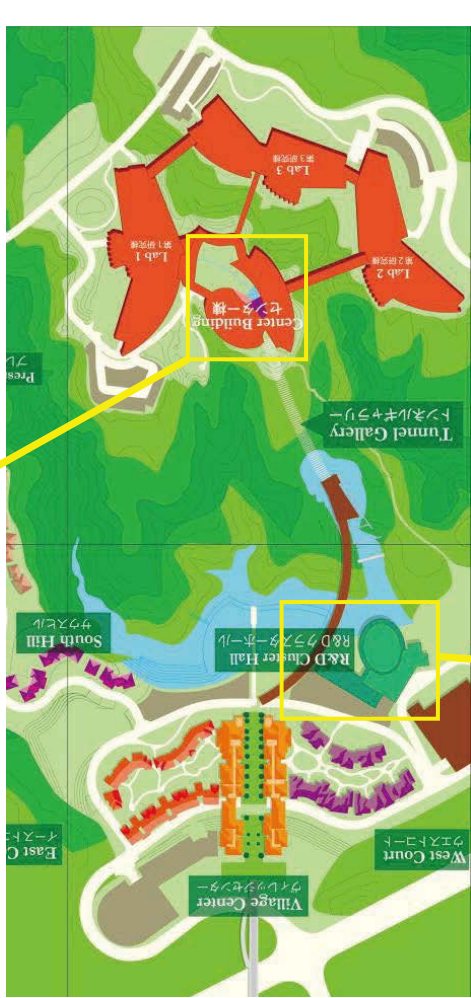
There are a few more novelties at ICONIP 2025. We made the three days of main conference single-track, so that the community can gain common understanding from well selected talks. To complement this, we allocated extended time for poster sessions for interactive exchanges of knowledge and ideas.

Also new is the introduction of OpenReview platform for paper submission and reviewing, which enables best matching of papers to reviewers' expertise. This year's ICONIP received more than 1,100 submissions and about 400 papers were accepted, resulting in the acceptance rate below 40%. We hope that all authors benefitted from quality reviews and appreciate all the hard works by the reviewers and program committee members.

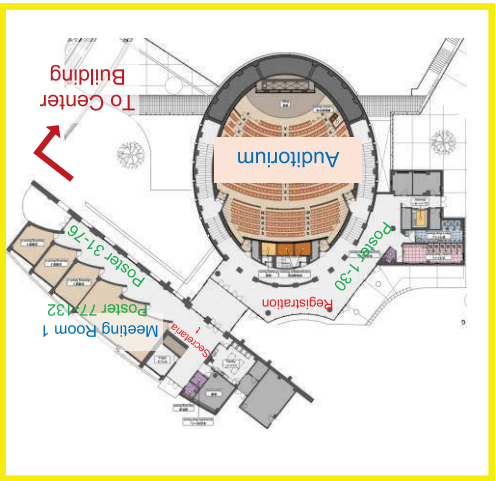
Despite the inflation these days, we strived to keep the registration fees as low as possible, especially for student members. We thank Okinawa Prefecture for generous financial support and OIST for providing the superb conference facility.

We hope all the participants enjoy encounters and discussions in and outside the sessions and also enjoy the distinct nature and culture of Okinawa, a historic center of exchanges across Asia-Pacific countries.

Kenji Doya and Maryam Doborjeh, ICONIP 2025 General Chairs  
Kevin Wong, APNNS President  
Shin Ishii, JNNS President



\*To reach the Center Building, please go through the Tunnel Gallery and take the elevator.



## Conference center

- Monday Nov. 24th
- Full-day Workshops**
- Meeting Room 1 Quantifying and Simulating Multi-Neuromodulatory Dynamics in the Biological Brain
  - C210 The 18th International Workshop on Artificial Intelligence and Cybersecurity (AICS 2025)
- Morning Workshops**
- Auditorium The Third International Whole Brain Architecture Workshop
  - B250 Frontiers and Hardware Applications of Neural Network Models
  - C209 Ultra-Brain Neuromorphic by Material-Device-System Co-Research
- Afternoon Workshops**
- B250 Accelerating Large-Scale Computational Neuroscience Using Transformers and LLMs
  - C209 International Workshop on Deep Learning for Multi-modal Data
- Open Forum 公開フォーラム**
- Auditorium Society of Humans and AI Agents 人とAIの織りなす社会
  - Yutaro Yamada 山田祐太朗 (Sakana AI)
  - Mizuki Oka 岡瑞起 (Chiba Tech)

- Thursday Nov. 20th, 10:00-13:00
- Tutorials**
- Auditorium Mathematical Theories of Deep Foundation Models
  - Meeting Room 1 Improved Explainability with Spiking Neural Networks for Spatiotemporal Brain Data Modelling: Hands-on NeuCube-based-SNN Tutorial
  - B250 The Free-energy Principle for AI Researchers and Neuroscientists
  - C209 AI for Human Neuroscience Research: Generative AI Modeling and Large-Scale Analysis
  - C210 A Methodology for Designing Brain-Like AI Software
- Thursday Nov. 20th, 14:00-17:00
- Special Sessions**
- Auditorium Computer Vision and Language Understanding: Transformers in Image Analysis and Text Understanding in Medicine
  - Meeting Room 1 Imitation Learning and Latent Models Applicable to Real-World Robotics
  - B250 Toward Safe Brain-Inspired AI: Deep Learning Applications for Smart Agriculture
  - Auditorium Generative AI and Deep Learning for Advancing Affective Human-Robot Interaction
  - Auditorium Sustainable Smart Villages: Harnessing Edge AI and TinyML for Low-resource Communities
  - Auditorium Reliable, Robust and Secure Machine Learning Algorithms

ICONIP 2025 Schedule

| Day      | Thu 20 Nov                                                      |                                                                                                            |                                                                                |                                                                                                   |                                                                  | Fri 21 Nov                                                                                           | Sat 22 Nov                                                                                                   | Sun 23 Nov                                                                   | Mon 24 Nov (holiday)                                                                |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
|----------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Room     | Auditorium                                                      | Meeting Room 1                                                                                             | B250                                                                           | C209                                                                                              | C210                                                             | Auditorium                                                                                           | Auditorium                                                                                                   | Auditorium                                                                   | Auditorium                                                                          | Meeting Room 1                                                                                  | B250                                                                       | C209                                                                         | C210                                                                                                   |
| capacity | 493                                                             | 130                                                                                                        | 144                                                                            | 60                                                                                                | 60                                                               | 493                                                                                                  | 493                                                                                                          | 493                                                                          | 493                                                                                 | 130                                                                                             | 144                                                                        | 60                                                                           | 60                                                                                                     |
| 9:00     | Registration<br>(Foyer)                                         |                                                                                                            |                                                                                |                                                                                                   |                                                                  | Keynote Lecture 1<br>Jun Tani                                                                        | Keynote Lecture 2<br>Yew Soon Ong                                                                            | Keynote Lecture 3<br>Asako Kanezaki                                          | Workshop 4<br>The Third International Whole Brain Architecture Workshop             | Workshop 2<br>Quantifying and Simulating Multi-Neuromodulatory Dynamics in the Biological Brain | Workshop 5<br>Frontiers and Hardware Applications of Neural Network Models | Workshop 6<br>Ultra-Brain Neuromorphic by Material-Device-System Co-Research | Workshop 1<br>The 18th International Workshop on Artificial Intelligence and Cybersecurity (AICS 2025) |
| 9:20     |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 9:40     |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 10:00    | Tutorial 1<br>Mathematical Theories of Deep Foundation Models   | Tutorial 4<br>Improved Explainability with Spiking Neural Networks for Spatiotemporal Brain Data Modelling | Tutorial 2<br>The Free-Energy Principle for AI Researchers and Neuroscientists | Tutorial 3<br>AI for Human Neuroscience Research: Generative AI Modeling and Large-Scale Analysis | Tutorial 5<br>A Methodology for Designing Brain-Like AI Software | Break                                                                                                | Break                                                                                                        | Break                                                                        |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 10:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  | Oral Session 1<br>Student Best Paper Award Session                                                   | Oral Session 3                                                                                               | Oral Session 5                                                               |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 10:40    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 11:00    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 11:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 11:40    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  | APNNS General Meeting                                                                                |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 12:00    | Registration<br>(Foyer)                                         |                                                                                                            |                                                                                |                                                                                                   |                                                                  | Lunch                                                                                                | Lunch                                                                                                        | Lunch                                                                        | Open Forum<br>Society of Humans and AI Agents (in Japanese with English Transcript) |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 12:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 12:40    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 13:00    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  | Oral Session 2<br>Best Paper Award Session                                                           | Oral Session 4                                                                                               | Oral Session 6                                                               |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 13:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 13:40    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 14:00    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 14:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 14:40    | Opening                                                         |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 15:00    | Special Session 5<br>Computer Vision and Language Understanding | Special Session 7<br>Imitation Learning and Latent Models Applicable to Real-World Robotcis                | Special Session 4<br>Toward Safe Brain-Inspired AI                             | Special Session 8<br>Deep Learning Applications for Smart Agriculture                             |                                                                  | Flash Talks 1                                                                                        | JNNS Member Meeting                                                                                          | Poster Session 3<br>(Foyer and Meeting Room 1)                               |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 15:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  | Poster Session 1<br>(Foyer and Meeting Room 1)                                                       | Poster Session 2<br>(Foyer and Meeting Room 1)                                                               |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 15:40    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 16:00    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 16:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 16:40    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 17:00    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  | Special Session 2<br>Generative AI and Deep Learning for Advancing Affective Human-Robot Interaction | Special Session 1<br>Sustainable Smart Villages – Harnessing Edge AI and TinyML for Low-Resource Communities | Special Session 3<br>Reliable, Robust and Secure Machine Learning Algorithms |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 17:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              | Reception<br>(Foyer)                                                                |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 17:40    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 18:00    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 18:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 | Banquet<br>(Center Court)                                                  |                                                                              |                                                                                                        |
| 18:40    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 19:00    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 19:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 19:40    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 20:00    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 20:20    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |
| 20:40    |                                                                 |                                                                                                            |                                                                                |                                                                                                   |                                                                  |                                                                                                      |                                                                                                              |                                                                              |                                                                                     |                                                                                                 |                                                                            |                                                                              |                                                                                                        |

Shuttle Bus Time Table

Please meet at the entrance 5 minutes before departure

| Hotels                                  | NO | 順 | Hotel Departure |       |            | OIST Departure                |                               |                                          |                               |
|-----------------------------------------|----|---|-----------------|-------|------------|-------------------------------|-------------------------------|------------------------------------------|-------------------------------|
|                                         |    |   | 11/20           | 11/21 | 11/22 - 24 | 11/20                         | 11/21 11/23                   | 11/22                                    | 11/24                         |
| A) South                                |    |   |                 |       |            |                               |                               |                                          |                               |
| Renaissance Okinawa Resort              | 1  | 1 | 8:45            | 7:45  | 8:05       | 17 : 25<br>18 : 55            | 19 : 25<br>19 : 55            | 19 : 25<br>19 : 55<br>21 : 25            | 16 : 25                       |
| The Moon Beach Museum Resort            | 2  | 2 | 9:00            | 8:00  | 8:15       |                               |                               |                                          |                               |
| Hotel Monterey Okinawa Spa & Resort     | 3  | 3 | 9:05            | 8:05  | 8:20       |                               |                               |                                          |                               |
| Kafuu Resort Fuchaku CONDO-HOTEL        | 4  | 4 | 9:10            | 8:10  | 8:25       |                               |                               |                                          |                               |
| Sheraton Okinawa Sunmarina Resort       | 5  | 5 | 9:15            | 8:15  | 8:30       |                               |                               |                                          |                               |
| OIST                                    |    |   | 9:25            | 8:25  | 8:40       |                               |                               |                                          |                               |
| B) Rizzan Sea-Park                      |    |   |                 |       |            |                               |                               |                                          |                               |
| Rizzan Sea-Park Hotel Tancha-Bay        | 6  | 1 | 9:00            | 8:00  | 8:15       | 17 : 30<br>18 : 00<br>19 : 00 | 19 : 30<br>19 : 55<br>20 : 20 | 19 : 30<br>19 : 55<br>21 : 30<br>21 : 55 | 16 : 30<br>16 : 55<br>17 : 20 |
| OIST                                    |    |   | 9:10            | 8:10  | 8:25       |                               |                               |                                          |                               |
| Rizzan Sea-Park Hotel Tancha-Bay        | 6  | 2 | 9:35            | 8:35  | 8:40       |                               |                               |                                          |                               |
| OIST                                    |    |   | 9:45            | 8:45  | 8:50       |                               |                               |                                          |                               |
| C) North                                |    |   |                 |       |            |                               |                               |                                          |                               |
| ANA InterContinental Manza Beach Resort | 7  | 1 | 8:55            | 7:55  | 8:10       | 17 : 20<br>18 : 50            | 19 : 20<br>19 : 50            | 19 : 20<br>21 : 20<br>21 : 50            | 16:20                         |
| Manza Beach Mae local bus stop          | 8  | 2 | 9:00            | 8:00  | 8:15       |                               |                               |                                          |                               |
| OIST Seaside House                      | 9  | 3 | 9:20            | 8:20  | 8:35       |                               |                               |                                          |                               |
| OIST                                    |    |   | 9:25            | 8:25  | 8:40       |                               |                               |                                          |                               |
| D) Hyatt                                |    |   |                 |       |            |                               |                               |                                          |                               |
| Hyatt Regency Seragaki Island Okinawa   | 10 |   | 9:10            | 8:10  | 8:25       | 17 : 20                       | 19 : 20                       | 19 : 20                                  | 16:20                         |
| OIST                                    |    |   | 9:30            | 8:30  | 8:45       | 18 : 50                       | 19 : 50                       | 21 : 20                                  |                               |

Schedule may be shifted depending on traffic and demand.