

2024 Guide to Entrance Examinations  
Master's/Doctoral Program  
Department of Systems Innovation  
Graduate School of Engineering, The University of Tokyo

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# 2024 Master's Program

This document contains important information on entrance examinations at the Department of Systems Innovation. It is supplementary to the Guidelines for Applicants to the 2024 Master's Program, provided by the University of Tokyo's Graduate School of Engineering. This document provides details on the examination subjects, schedules, and other related materials.

The entrance examination of our department consists of Document Screening, Examination for Problems Related to Systems Innovation and Oral Examination. Further information will be published on the Department of Systems Innovation website (<http://www.sys.t.u-tokyo.ac.jp>), etc.

## 1 Entrance Examination

### (1) Examination Subjects and Schedules

Date	Examination Subject(s) & Times	Notes
August 28 <sup>th</sup> (Mon) ~ September 1 <sup>st</sup> (Fri)	9:00~19:00 <sup>(1)</sup> - Problems Related to Systems Innovation - Oral Examination	For eligible applicants who pass the document screening <sup>(2)</sup>

#### Footnotes:

<sup>(1)</sup> Examination times may be changed.

<sup>(2)</sup> Only those who have passed the document screening can take the examination.

<sup>(3)</sup> More details on the exam (including information on the exam questions) will be announced on Entrance Examination Information Session on May 19<sup>th</sup> (Fri) and June 3<sup>rd</sup> (Sat), and will be also announced on the department website on or before May 27<sup>th</sup> (Sat). The information of Entrance Examination Information Session is also announced on the department website.

### (2) Examination Procedures

#### a) Document Screening

Screening of applicants for admission will first be conducted by evaluating application documents (more specifically, the Motivation Letter with the Research Proposal and the Answer to the Technical Questions (refer to 2-(2), (3) below) as well as the applicant's academic performances during undergraduate etc.) submitted by the applicant. Applicants will be notified of the results of the document screening by August 24<sup>th</sup> (Thu) via the department website, etc. Subsequently, the examinations will be held only for applicants who successfully pass the document screening. Applicants who do not pass the document screening will not be invited to take the exam.

#### b) English Examination

Official TOEFL PBT or TOEFL iBT (including Home Edition) scores submitted by the applicant will be used to evaluate the applicant's English skills. For more details, refer to the "Notice regarding Foreign-language (English) Examinations in 2024 (Master's Program)" provided by the University of Tokyo's Graduate School of Engineering. The Department of Systems Innovation only accepts official scores from a single test date (Test Date Scores), not "MyBest" Scores. Please refer to 1-(3)-d below.

#### c) Problems Related to Systems Innovation

Applicants will be asked to submit a response to pre-assigned technical questions. An oral examination (online) will be given on the content. Details of the examination method, timetable, and precautions will be notified on the department website by the end of July.

#### d) Oral Examination

Oral examination will be held online. Details, including instructions, timetable, and other notifications, will be published on the department website by August 25<sup>th</sup> (Fri).

### (3) Notes

a) The application fee will NOT be refunded under any circumstances, even for applicants who do not pass the document screening stage.

b) For the online exam, the applicant must use a PC with a camera, microphone, and stable Internet connection.

c) Further notifications on document screening and the exam will be published on the department website, etc.

Details of the exam will also be announced on Entrance Examination Information Session on May 19<sup>th</sup> (Fri) and June 3<sup>rd</sup> (Sat). Information about the session will be announced on the department website.

- d) TOEFL scores must arrive no later than August 9<sup>th</sup> (Wed). Applicants are asked to take the TOEFL test and submit scores as early as possible, as some students fail to meet the deadline every year. Any applicants who are unable to submit the TOEFL scores before the submission deadline owing to unavoidable circumstances have to inform the Department of Systems Innovation about the situation (with a specific explanation of relevant causes) no later than July 28<sup>th</sup> (Fri) (see the department website for the contact information). Based on the circumstances, the TOEFL scores may be accepted after the deadline, or the applicant's English skills may be evaluated in a different manner.
- h) Do not share the URL or password, etc., for the online exams. Do not post any examination materials on the internet. Unless explicitly instructed otherwise by the examiner, taking photographs, capturing screenshots, and/or making audio and video recordings are strictly prohibited during the online exams.

## 2 Required Documents

In addition to the "Entrance Examination Application Documents" listed in Section 6 of the "Guidelines for Applicants to the 2024 Master's Program (provided by the Graduate School of Engineering, The University of Tokyo)", applicants must submit three other documents listed below. Information on submitting the documents will be published on the department website.

### (1) Declaration of Preferred Supervisors

Declare your academic advisor from the website no later than July 5<sup>th</sup> (Wed).

### (2) Motivation Letter with Research Proposal

Applicants must submit a Motivation Letter and Research Proposal. In the letter, applicants should describe (in Japanese or English) their motivation to study at the Department of Systems Innovation along with their reason for choosing the faculty member as their most preferred supervisor in the "Declaration of Preferred Supervisors", and provide a coherent summary of the research project they intend to undertake at the department. Applicants should use the prescribed format for this letter (which can be downloaded from the department website) and submit it as a PDF file. The letter must be prepared electronically. The deadline is planned for mid-July to early August, and will be published on the department website.

### (3) Answers to Technical Questions

Technical questions will be announced to the applicants in late-July or early August. Follow the instructions on the website and answer the questions. Prepare your answers using the format prescribed on the department website. The deadline is planned for early August, and will be published on the department website.

Caution: The submission deadlines and destination are different from those for the "Entrance Examination Application Documents" and the TOEFL scores.

## 3 Others

### (1) Enrollment in October 2023

Successful applicants can enroll in the master's program in October 2023. If you would like detailed information on the requirements, please read section one of the Guidelines for Applicants to the 2024 Master's Program, provided by the Graduate School of Engineering, the University of Tokyo.

### (2) Visa Application

Visa applications cannot be processed until after the applicants have been accepted for admission, and visa processing usually takes more than one month. Thus, it will not be possible to issue visas before enrollment in October. Therefore, foreign applicants who need to apply for a visa should consider enrolling in April.

### (3) Application Schedule B

There is currently no schedule within the Department of Systems Innovation to hold winter entrance examinations (Application Schedule B). This may be subject to change based on the circumstances.

- (4) If you have any further questions, please contact the Office of the Department of Systems Innovation (refer to the cover page of this document for the contact information).

# 2024 Doctoral Program

This document contains important information on entrance examinations at the Department of Systems Innovation, which is supplementary to the Guidelines for Applicants to the 2024 Doctoral Program, provided by the University of Tokyo's Graduate School of Engineering. This document provides details on the examination subjects, schedules, and other related materials.

The entrance examination of our department consists of document screening, Examination for Problems Related to Systems Innovation and Oral Examination. Further information will be published on the Department of Systems Innovation website (<http://www.sys.t.u-tokyo.ac.jp>), etc.

## 1 Primary Examination

### (1) Examination Subjects and Schedules

Date	Examination Subject(s) & Times	Notes
August 28 <sup>th</sup> (Mon) ~ September 1 <sup>st</sup> (Fri)	9:00~19:00 <sup>(1)</sup> - Problems Related to Systems Innovation - Oral Examination	For eligible applicants who pass the document screening <sup>(2)</sup>

#### Footnotes:

<sup>(1)</sup> Examination times may be changed.

<sup>(2)</sup> Only those who have passed the document screening can take the examination.

<sup>(3)</sup> More details on the exam (including information on the exam questions) will be announced on Entrance Examination Information Session on May 19<sup>th</sup> (Fri) and June 3<sup>rd</sup> (Sat), and will be also announced on the department website on or before May 27<sup>th</sup> (Sat). The information of Entrance Examination Information Session is also announced on the department website.

### (2) Examination Procedures

#### a) Document Screening

Screening of applicants for admission will first be conducted by evaluating application documents (more specifically, documents described in 2-(c) or 2-(d) as well as the applicant's academic performances during undergraduate and graduate school) submitted by the applicant. Applicants will be notified of the results of the document screening by August 24<sup>th</sup> (Thu), via the department website, etc. Subsequently, written and oral examinations will be held only for applicants who successfully pass the document screening. Applicants who do not pass the document screening will not be invited to take the exam.

#### b) English Examination

Official TOEFL PBT or TOEFL iBT (including Home Edition) scores submitted by the applicant will be used to evaluate the applicant's English skills. For more details, refer to the "Notice regarding Foreign-language (English) Examinations in 2024 (Doctor's Program)" provided by the University of Tokyo's Graduate School of Engineering. The Department of Systems Innovation only accepts official scores from a single test date (Test Date Scores), not "MyBest" Scores. Applicants who are unable to submit their TOEFL scores before the submission deadline owing to unavoidable circumstances may refer to 1-(3)-d below.

Note: Applicants who have completed or are expected to complete a master's program (or professional degree program) at the University of Tokyo will be exempt from the English examination (thus, they do not need to submit TOEFL scores).

#### c) Problems Related to Systems Innovation

Applicants will be asked to submit a response to pre-assigned technical questions. An oral examination (online) will be given on the content. Details of the examination method and time, and precautions will be published on the web page of this department by the end of July.

Note: Applicants who have completed or are expected to complete a master's program (or professional degree program) at the Graduate School of Engineering, the Graduate School of Frontier Sciences, the Graduate School of Information Science and the Technology, Graduate School of Interdisciplinary Information Studies in the University of Tokyo do not need to take "Problems Related to Systems Innovation".

#### d) Oral Examination

Oral examination will be held online. Details, including instructions, timetables, and other notifications concerning the online oral exam, will be published on the department website by August 25<sup>th</sup> (Fri).

### (3) Notes

- a) The application fee will NOT be refunded under any circumstances, even for applicants who do not pass the document screening stage.
- b) For the online exam, the applicant must use a PC with a camera, microphone, and stable Internet connection.
- c) Further notifications on the online exam will be published on the department website, etc.. Details of the exam will also be announced on Entrance Examination Information Session on May 19<sup>th</sup> (Fri) and June 3<sup>rd</sup> (Sat). Information about the session will be announced on the department website.
- d) TOEFL scores must arrive no later than August 9<sup>th</sup> (Wed). Applicants are asked to take the TOEFL test and submit scores as early as possible, as some students fail to meet the deadline every year. Any applicants who are unable to submit the TOEFL scores before the submission deadline owing to unavoidable circumstances have to inform the Department of Systems Innovation of the situation (with a specific explanation of relevant causes) no later than July 28<sup>th</sup> (Fri) (see the department website for the contact information). Based on the circumstances, the TOEFL scores may be accepted after the deadline, or the applicant's English skills may be evaluated in a special manner.
- e) Do not share the URL or password, etc., for the online exams. Do not post any examination materials on the Internet. Unless explicitly instructed otherwise by the examiner, taking photographs, capturing screenshots, and/or making audio and video recordings are strictly prohibited during the online exams.

### (4) Oral Examination

- a) Please explain your master's thesis research (or research achievement equivalent to a master's thesis), and your plans for your doctoral research. Your knowledge in your field of specialization, preparedness for doctoral work, and ability to conduct research will be evaluated.
- b) Applicants must make a presentation online (above 1-(4)-a) by screen-sharing their electronic presentation materials (such as PowerPoint, Keynote, PDF, etc.).
- c) Applicants who wish to enroll in October 2023 and who have completed, or are expected to complete a master's (or professional) program by September 30<sup>th</sup>, 2023, do not need to take the secondary oral examination described in Item 3 below. Primary and secondary oral examinations will be combined.

## 2 Required Documents

In addition to the "Entrance Examination Application Documents" listed in section seven of the "Guidelines for Applicants to the Doctoral Program (provided by the Graduate School of Engineering, the University of Tokyo)", applicants must submit the documents listed below by the designated due dates. To prepare these documents, please consult thoroughly with your preferred supervisor.

#### a) All applicants

Declaration of Preferred Supervisors (Submit from the web page.)  
(Submission deadline: July 5<sup>th</sup> (Wed), 2023)

#### b) Answers to technical questions

Technical questions will be notified to the applicants in late-July or early August. Follow the instructions on the website and answer the questions. Prepare your answers using the format prescribed on the department website. The deadline is planned for mid-August, and will be published on the department website.

#### c) Only applicants who pass the document screening

A PDF file of the presentation materials you plan to use in the general oral exam. Although the applicant can use any presentation software in the actual exam, the applicant must submit the presentation materials in PDF format.

(Submission deadline: August 26<sup>th</sup> (Sat), 2023)

#### d) Applicants taking only the primary examinations (primary oral examination)

- 1) Summary of research to date (4 pages, A4 or US Letter; 1 copy)
- 2) Doctoral dissertation plan (1 page, A4 or US Letter; 1 copy)

(Submission deadline: August 4<sup>th</sup> (Fri), 2023)

#### e) Applicants taking the secondary examination (combined primary and secondary oral examinations)

- 1) Summary of research to date and doctoral dissertation plan (6 pages, A4 or US Letter; 1 copy)
- 2) Copy of your master's thesis (or equivalent other document[s] illustrating research achievements) (1 copy)
- 3) List of research achievements (1 copy)

(Submission deadline: August 4<sup>th</sup> (Fri), 2023)

Note 1) The format of the abstract to be submitted conforms to that of the conference proceedings of the academic society to which each applicant belongs.

Note 2) The list of research achievements should be categorized by type such as: academic journal publication, review, expository paper, presentation, etc.

Note 3) The submission deadlines and destination are different from those for the “Entrance Examination Application Documents” and the TOEFL scores.

### 3 Secondary Examination

The secondary examination is an oral examination and is administered to those who pass the primary examination (except applicants who meet the conditions described in 1-(4)-c). The examination will be scheduled between late January and mid-February, 2024. Details will be given to the applicants at a later date.

### 4 Others

#### (a) Enrollment in October 2023

Successful applicants can enroll in the master’s program in October 2023. If you would like detailed information on the requirements, please read section one of the Guidelines for Applicants to the 2024 Doctoral Program, provided by the Graduate School of Engineering, the University of Tokyo.

#### (b) Visa Application

Visa applications cannot be processed until after the applicants have been accepted for admission, and visa processing usually takes more than one month. Thus, it will not be possible to issue visas before enrollment in October. Therefore, foreign applicants who need to apply for a visa should consider enrolling in April.

#### (c) Application Schedule B

There is currently no schedule within the Department of Systems Innovation to hold winter entrance examinations (Application Schedule B). This may be subject to change based on the circumstances.

#### (d) If you have any further questions, please contact the Office of the Department of Systems Innovation (refer to the cover page of this document for the contact information).

### Faculty Members and Outlines of their Research (1/3)

Supervisor's No.	Name of Supervisor	Research field
1	Kazuhiro AOYAMA Prof. (Research into Artifacts, Center for Engineering)	System Architecture Design, Product Family and Product Platform Design, Product Lifecycle Management (PLM), Model-Based System Design (MBSD), Project Management. Product Service System (PSS), Service Design, Human Centered Manufacturing System, Industry 4.0, Knowledge Management.
2	Kiyoshi IZUMI Prof.	(1) Financial informatics: Artificial market simulation; Financial text mining; AI application in finance. (2) Engineering based economics: Consumer data analysis; Movement data analysis; Marketing simulation. Those who want to join our laboratory should visit /https://socsim.tu-tokyo.ac.jp/ .
3	Yukio OHSAWA Prof.	(1) Methods for discovering opportunities and risks from commercial, natural, and/or behavioral data, (2) Realizing cognition, thought, and decisions for innovating businesses in designed markets of data where strategies for combining/using/reusing data are communicated and created.
4	Yoji OKABE Prof. (Institute of Industrial Science)	Innovative health diagnostics of advanced composite structures for airplanes, Structural health monitoring, Non-destructive inspection, Fiber-optic ultrasonic sensing systems applicable to high-temperature environments, Internal damage detection using ultrasonic guided waves, Laser-ultrasonic visualization system.
5	Yasuhiro KATO Prof. (Frontier Research Center for Energy and Resources)	Discovery of deep-sea mineral deposits and space resources for rare-earths and base/rare/precious metals, Decoding of global environmental changes and material cycles during the whole history of the Earth, Design of deep-sea and space resource development.
6	Tomoya KAWASAKI Lecturer	Supply chain simulation model, Agent-based simulation, Complex network theory in supply chain and logistics network, Logistics sensing, Transport/logistics bigdata analysis, Global value chain, Technological innovation and logistics systems
7	Tomoya KAWABATA Prof.	Optimization of future supply system of hydrogen and research of the reliability of transportation and storage of LH2, Nano-scale microstructural design for economic rationality based on fracture mechanisms using front-line technology, Optimum arrangement of material in building and civil engineering fields against huge earthquakes
8	Taro KANNO Assoc. Prof.	Cognitive Systems Engineering (Human-Centered Systems Design & Management): Team Cognition, Organizational Simulation, Cognitive Data Analysis, Human Factors in Medical, Nursing, ATC, and Emergency Response. Sociotechnical Systems Resilience.
9	Daisuke KITAZAWA Prof. (Institute of Industrial Science)	Marine food production system, renewable energy utilization system and marine ecosystem preservation. Ocean space utilization. Environmental impact assessment. Interactions between the natural environment, marine organisms, and marine structures. Marine ecosystem model. Experiments on flexible structures and behavior of animals in water tank.
10	Takashi GODA Assoc. Prof.	Numerical algorithms (e.g., Monte Carlo, quasi-Monte Carlo and multilevel Monte Carlo methods): from theory to engineering applications, Machine learning, Uncertainty quantification, Global sensitivity analysis, Decision making, Value of information analysis, Other related applied mathematics and statistics
11	Seiichi KOSHIZUKA Prof.	Particle method for fluid dynamics (accuracy, speed, multi-phase, surface tension), useful simulation for human beings (industrial application, collaboration with companies, mixing tank, infiltration of rain water, droplet behavior), physics-based computer graphics (visualization, real-time, position-based), credibility of simulation (V&V)
12	Hajime KOBAYASHI Assoc. Prof. (Frontier Research Center for Energy and Resources)	Researches on frontier biotechnologies for energy and resources: CO2 conversion & utilization (conversion of CO2 into valuable products by biological inorganic hybrid systems), bio-monitoring of subsurface environments (DNA-based monitoring of fluid flows, new bio-tracer technologies), improvement of geological characteristics by using bio-particles.
13	Ryuichi SHIBASAKI Assoc. Prof. (Resilience Engineering Research Center)	Global logistics network modelling and policy simulation: international, intermodal container cargo simulation, logistics analysis/modelling using the large-scale vessel movement database, and sequential modelling of international trade and logistics. Model applications to many kinds of logistics projects mainly planned for developing countries of the world
14	Kazuya SHIBATA Assoc. Prof.	Investigation of Phenomena and Optimization of Design by Numerical Simulation, Development of New Systems Using Physics-Based Simulation, Numerical Analysis of Fluid Force Acting on Ships and Offshore Structures, Tsunami Simulation in Coastal Areas, Engineering of Disaster Prevention and Mitigation, Development of Evaluation Method for Safety, Particle Methods.
15	Kazuki SHIBANUMA Assoc. Prof.	Structural integrity to achieve sustainable society: Investigation on fracture mechanics of materials and structures, Development of prediction method of aging degradations and maintenance theory, Innovative physical modeling to integrate multiscale
16	Takashi SHIMADA Assoc. Prof.	Statistical Physics and nonlinear science on biological, ecological, social and economic systems. Namely, ①Theoretical study of universal aspects, such as robustness, of open and evolving systems ②Simulation study of collective phenomena in biological, social, economic systems ③Data analysis of the dynamics of real complex systems.
17	Katsuyuki SUZUKI Prof.	Structural mechanics, computational mechanics and optimal design of multi-disciplinary systems, Topology and shape optimization, Analysis and Design of Ship structure and ocean structures, Wind Assisted Ship. (Supervise with Prof. Yonekura).

### Faculty Members and Outlines of their Research (2/3)

Supervisor's No.	Name of Supervisor	Research field
18	Jun TAKAHASHI Prof.	Advanced CFRP technologies for realizing a low-carbon society (e.g. ultralight-weight vehicles, ultra-large floating offshore wind turbines, etc.), innovative simulation technologies for new services (e.g. digital multi-quality assurance using Monte Carlo methods), LCA, recycling (Supervise with Lecturer Yi Wan)
19	Yutaro TAKAYA Assoc. Prof.	Waste management and recycling; Utilization method of intractable wastes; Mineral processing and hydrometallurgical process of the deep-sea mineral resources; Carbon fixation with concrete sludge, slag, and silicate
20	Kenji TANAKA Assoc. Prof. (Department of Technology Management for Innovation)	(1) Systems Design for Transportation, Distribution, Energy, and Other Network Services, (2) Data analysis, Simulation, Forecasting, Risk evaluation for Systems Design.
21	Takeshi TSUJI Prof.	Develop geophysical exploration and monitoring methods for carbon-neutral projects (e.g., CO2 storage) and for energy development (e.g., methane hydrate). Monitor earthquake faults and volcanoes. Explore the moon and Mars. Modeling of subsurface dynamic behaviors using digital rock physics. Monitor human activities and traffic patterns using machine learning and seismometers.
22	Chiharu TOKORO Prof.	Advanced separation technology/process and environmental purification technology/process to achieve sustainable resource circulation, and social system/policy proposal for them.
23	Gjergj DODBIBA Assoc. Prof.	(1) Resources processing for materials recovery and recycling; (2) Synthesis of adsorbent for wastewater treatment; (3) Environmental impact assessment;
24	Fujio TORIUMI Prof.	Computational Social Science (Social Data Analysis, Agent-based Simulation) and AI for Society. Topics: Social Media, News Media, Web Services, Transportation Data Methods: Complex Networks, Machine Learning, NLP, Agent-based Simulation and Game Theory.
25	Akihiro NAKAO Prof.	DX (Digital Transformation) through next-generation cyber infrastructure (5G / Beyond 5G). Large-capacity, low-latency, multi-connection. Low power consumption and improved safety and reliability. Autonomy by machine learning / AI-based failure prediction / automatic repair. Expandability to space / ocean. Resolving regional issues and creating new value.
26	Kentarō NAKAMURA Assoc. Prof.	(1) Efficient methods for exploring deep-sea mineral resources, (2) Analytical methods for simple and precise determination of rare metals, (3) Formation processes and geological background of metal resources, (4) Evolution of Earth's surface environment and life.
27	Kimihiro HASHIBA Assoc. Prof.	Innovation in resource engineering: sophisticated mining system (advancement of mining machinery, rapid excavation, deep sea mining), risk reduction in resource development, long-term usage of underground structures (rock property, long-term behavior), and geomechanical modeling/simulation.
28	Teruaki HAYASHI Lecturer	(1) System Design and Dynamics of the Data Ecosystem: Data ecosystem, Cross-disciplinary data exchange and collaboration, Data market simulation, Creative communication, Complex networks. (2) Support Technology for Data Origination from Unobserved Events: Data design, Knowledge structuring, Unexplored data, Collective intelligence, Human interface.
29	Katsunori FUKUI Prof.	Systems Innovation Engineering of Resources Exploration and Development for Safe and Secure Society (Deep Sea Mining, Preservation of the Environment), Geospace Engineering, Rock Mechanics and Engineering (mechanical modeling/simulation), Mining Machinery.
30	Hideki FUJII Assoc. Prof.	R&D of social system simulation using multi-agent systems or cellular automata, etc., and virtual social experiments (especially microscopic car-traffic or crowd simulation). Simulation-based decision support for social systems in the real world.
31	Hideaki MIYAMOTO Prof.	(1) Space resources based on planetary geology; (2) Planetary explorations (incl. Asteroid missions, MMX Mars satellite sample-return mission, LUPEX lunar mission, and TSUKIMI lunar mission) and planetary data analysis; (3) Instrument development; (4) EPO activities at a museum as a part of consensus building.
32	Shinsuke MURAKAMI Prof. (Department of Technology Management for Innovation)	Mineral Economics & Industrial Ecology (MFA/MSA): Sustainable Resource Use, Design and Evaluation of Social Systems for the implementation of Circular Economy (Business Models, Consumer Behavioral Changes and Legislation Framework), Environmental Impact Assessment of mining, Minerals Market Analysis. Both data analysis and simulation will be used as analytical tools.
33	Kazutaka YASUKAWA Assoc. Prof. (Frontier Research Center for Energy and Resources)	(1) Characterization of seafloor mineral resources based on chemical analyses, (2) Elucidating genesis of seafloor mineral resources by multivariate statistical techniques, (3) Clarification of Earth system's responses to climate changes based on statistical and modeling approaches. Targeting resources and environmental issues by understanding the Earth system.



### Faculty Members and Outlines of their Research (3/3)

Supervisor's No.	Name of Supervisor	Research field
34	Tomonori YAMADA Assoc. Prof.	Computational Mechanics Simulation for Safe Society, High Performance Computing on Cutting Edge Supercomputers (FUGAKU etc.), Large-scale Simulation and Machine Learning, Multiphysics Simulation.
35	Kazuo YONEKURA Lecturer	Data-driven design for industrial systems using machine learning. Industrial application of machine learning considering explanation to users and society. Design optimization of structures, fluids, etc. based on mathematical programming. (Supervise with Prof. K. Suzuki)
36	Masataka WATANABE Assoc. Prof.	Unraveling the neural mechanism of consciousness through the establishment of machine consciousness. Firstly, as for the machine, we will develop a large-scale spiking neural network that mimics the functions and dynamics of a mammalian brain through learning, and secondly, mutually connect it to a biological brain for validating its consciousness.
37	Yi WAN Lecturer	Advanced composite materials for future society (self-driving EV, extra-large wind turbine, etc.), comprehensive researches of advanced composite materials (combining material mechanics with novel techniques), study of variation (prediction and control of property-variation of advanced composite materials). (Supervise with Prof. Jun Takahashi)