



University of Tsukuba



**Graduate School of Science and Technology**  
**Degree Programs in Systems**  
**and Information Engineering**  
**Master's/Doctoral Program in Computer Science**

<https://www.cs.tsukuba.ac.jp/english/>

*Information Mathematics and Modeling*

*Intelligent Software*

*Software Systems*

*Computer Architecture*

*Media Engineering*

*Intelligent Systems*

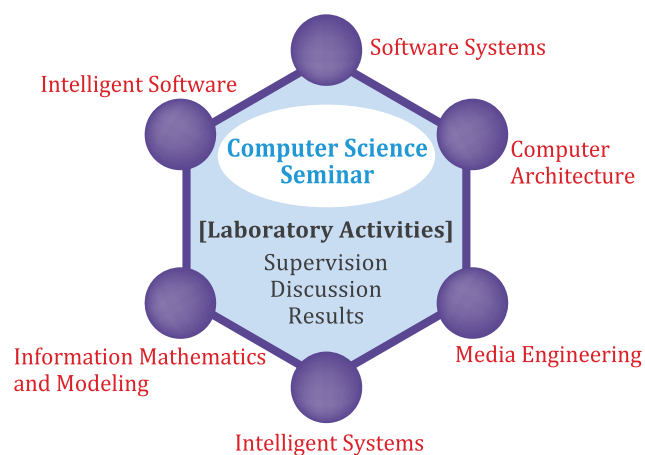
# Master's / Doctoral Program in Computer Science

We offer a wide variety of educational programs, including an English program that allows students to obtain a master's degree in English only, and a program that certifies completion through a practical IT curriculum.

Research fields range from basic technologies such as computers, networks, and security for the generation, processing, and use of "information", to application technologies such as Web applications, user interfaces, voice and image recognition, and high-performance computing.



Degree Programs in Systems and Information Engineering  
Master's / Doctoral Program in Computer Science



## Admission policy

Individuals with basic knowledge in the fields of information and mathematics and with a strong desire to acquire specialized knowledge, technical skills, basic R&D skills, and practical skills in the information and mathematics fields at graduate school.

## Curriculum policy

Our curriculum provides expertise and research ability in information mathematics and modeling, intelligent software, software systems, computer architecture, media engineering, intelligent systems, and a wide range of basic knowledge and ethics in the engineering field. Through research guidance toward master's / doctoral dissertation, we provide education to foster human resources who can find and solve problems from a wide perspective in multiple fields of science and technology.

## Diploma policy

Upon satisfying the requirements for completion of the master's program / doctoral program prescribed in the University of Tsukuba Graduate School and related Regulations, and after submitting a dissertation or a specific research report, a master's / doctoral (engineering) degree will be awarded to those who have been certified by the final examination to have acquired general knowledge and skills as specified in this program.

## Study model

The Information Science Course aims at acquiring advanced technologies in the information field, whereas the Human-centered AI Course aims at acquiring specialized knowledge, skill, activity, and ethic related to the application of AI and information technologies for solving international social issues.

## Achievements evaluation

In order to complete their master's / doctoral program, students are encouraged to study systematically by confirming the achievement status of knowledge and skills (general purpose / dedicated competence) to be acquired. Achievement evaluation results will be treated as part of the final examination conducted along with the dissertation review.

# Education program

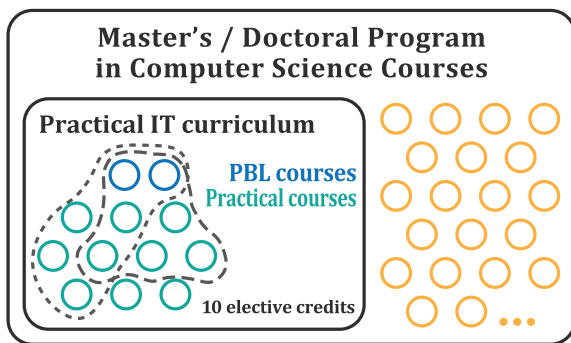
In the Master's / Doctoral Program in Computer Science, we offer a variety of educational programs, including an English program that allows students to obtain a master's degree in English only, and a program that certifies completion through a practical IT curriculum.

## Computer Science English Program

By offering several classes in English, this program allows students to obtain all the credits necessary for the Master Degree. The CSE program aims to foster the development of qualified international researchers.

## Practical IT curriculum

This curriculum aims to develop practical skills in software and system development. It consists of PBL (project-based training) courses solving problems that occur in the real world through group work, as well as practice-oriented courses that supplement them.



## International Joint Master's Program

This program organizes master's dual degree programs with the University of Grenoble-Alpes (France) and the University of Bochum (Germany).

Students attend lectures and do research at the University of Tsukuba and partner schools, with the aim to obtain master's degrees from both the University of Tsukuba and partner schools.

## Government-supported International Students Priority Placement

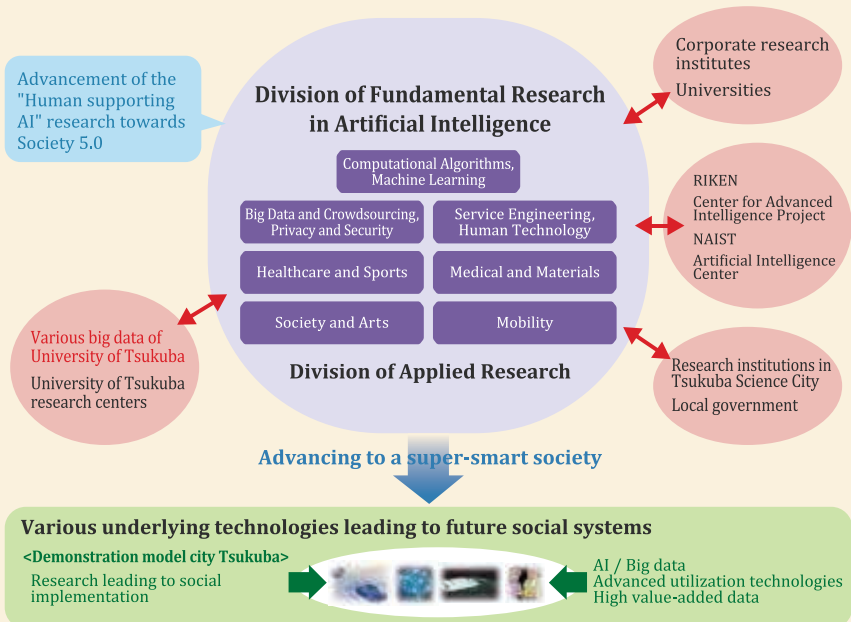
We have been conducting the "International Program for Frontier Informatics" (FY2019-FY2021) and the "International program for human-centered AI society" (FY2022-FY2024) under "Special Program for Priority Assignment of Government-sponsored International Students" by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) adopted.

## Early Completion Doctoral Program

This is a program for working people who have a certain level of research achievements and abilities to complete a standard 3-year doctoral program in one year at the earliest. Based on research achievements accumulated during their work activities, students receive guidance from supervisors to write and complete their doctoral dissertations.


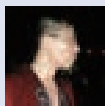
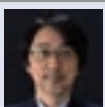
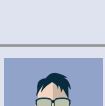
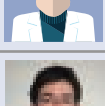
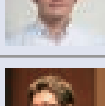
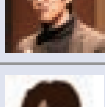
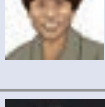
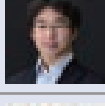

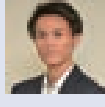

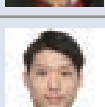
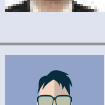
## Center for Artificial Intelligence Research (C-AIR)

The Center for Artificial Intelligence Research was opened in April 2017 to promote advanced research and education on AI. Through the cooperation of numerous faculty members, this center supports and organizes the activities and collaborations between AI research groups from different fields in the University, promoting the interdisciplinarity which is key to the University of Tsukuba's research vision.

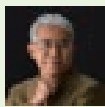
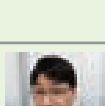
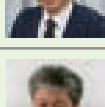
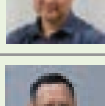

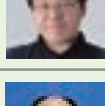
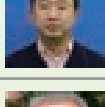
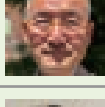
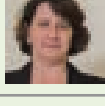



# Faculty members and their research areas

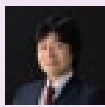



## Information Mathematics and Modeling





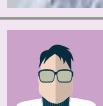

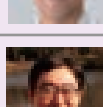
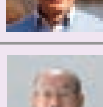


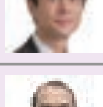
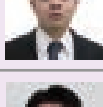
| Faculty   | Detailed Description of Research Field  |
|---|---|
|    | <b>KAWABE Tohru</b><br>Control design: Theory and applied research in Biologically Inspired Technology, Computational Intelligence based Control, Robust Control, etc.  |
|    | <b>KUNO Takahito</b><br>Mathematical optimization: Numerical algorithms for globally solving nonconvex optimization problems.   |
|    | <b>SAKURAI Tetsuya</b><br>Computational Mathematics, Numerical Mathematics for Computers, Parallel Computing Algorithms for supercomputers, Algorithms for Large-scale Data Analysis, Computational Science, Mathematical Software. |
|    | <b>TOKUNAGA Ryuji</b><br>Chaos, fractals and bifurcation theory. Computer amusement oriented elementary technologies.   |
|    | <b>AIHARA Ikkyu</b><br>Mathematical modeling of animal behavior and its applications: Nonlinear dynamics, Field recordings of animal calls, Sensor networks.  |
|    | <b>IMAKURA Akira</b><br>Numerical analysis: Numerical algorithms for solving linear systems and eigenvalue problems.  |
|   | <b>CAI Dong Sheng</b><br>Multimedia using artificial life theory. High performance computing and parallel computing for space simulation. Imaging using chaos and fractals.   |
|  | <b>SANO Yoshio</b><br>Discrete Mathematics, Graph Theory, Combinatorics.  |
|  | <b>HIRATA Yoshito</b><br>Nonlinear time series analysis: theory and its applications.   |
|  | <b>FUTAMURA Yasunori</b><br>Numerical analysis, High performance parallel algorithm, Parallel solver for large-scale linear systems and eigenvalue problems, Parallel numerical software.   |
|  | <b>TOKUDA Keita</b><br>Dynamical systems, Neural networks, Chaos, Machine learning, Learning and memory, Hippocampus, Biomarker, Central nervous system disease.  |
|  | <b>MORIKUNI Keiichi</b><br>Numerical linear algebra, large sparse matrix computations, preconditioning algorithms for Krylov subspace methods, least squares problems, singular linear systems.                                     |
|  | <b>NGUYEN Dai Hai</b><br>Machine Learning, Bioinformatics.  |
|  | <b>BOGDANOVA Anna</b><br>Machine Learning, Distributed Data Analysis, Privacy, Interpretability.  |

## Intelligent Software



| Faculty   | Detailed Description of Research Field   |
|---|--|
|    | <b>OHYA Akihisa</b><br>Intelligent robots and sensing: Mobile robots working in humans' daily life environment, real world sensory information processing, networked robotics, cooperative multiple mobile robots. |
|    | <b>KAMEYAMA Yukiyoshi</b><br>Programming languages and symbolic logic: type system, metaprogramming, programming logic, program verification.  |
|    | <b>SHIZUKI Buntarou</b><br>Human-computer interaction: Visual programming and interaction techniques for end users.  |
|    | <b>MISUE Kazuo</b><br>Information visualization: visual interface, visual analytics, network visualization, graph drawing.   |
|    | <b>UNNO Hiroshi</b><br>Program verification: model checking, type systems, program analysis, automated theorem proving.  |
|    | <b>TAKAHASHI Shin</b><br>User interface software, Ubiquitous computing, Computer-supported cooperative work (CSCW).  |
|   | <b>MIZUTANI Tetsuya</b><br>Program theory and musical informatics: Logical foundation of verification and analysis of realtime intellectual program systems and musical information.                               |
|  | <b>VASILACHE Simona</b><br>Software engineering, software development process, human computer interaction; intercultural communication, global software engineering.   |
|  | <b>KAWAGUCHI Ikkaku</b><br>Human Computer Interaction, Remote Communication Support, Communication Robot.  |
|  | <b>YOROZU Ayanori</b><br>Intelligent robot for human-harmonious collaboration, Task and motion planning, Human and environmental sensing, Field robotics.  |















## Software Systems

| Faculty   | Detailed Description of Research Field  |
|---|---|
|  | <b>AMAGASA Toshiyuki</b><br>Database system, data engineering: XML/RDF Database, social media, and scientific database.                                     |
|  | <b>KATO Kazuhiko</b><br>System software: Distributed system, cloud computing, operating system, cyber-physical system, software security.                   |
|  | <b>KITAGAWA Hiroyuki</b><br>Database systems and data engineering : Information integration, data mining, sleep data analysis, big data, stream processing. |
|  | <b>ABE Hirotake</b><br>System Software, Distributed Systems, Computer Security, Computer Network.   |



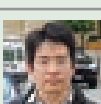





|   |  |
|---|--|
|    | <b>OYAMA Yoshihiro</b><br>Computer security, system software, operating systems, virtualization.   |
|    | <b>OKA Mizuki</b><br>Social Media Analysis, Web Science, Artificial Life.  |
|    | <b>SHIOKAWA Hiroaki</b><br>Database systems and data engineering.  |
|    | <b>SHINJO Yasushi</b><br>Operating systems, distributed systems, virtualization, privacy protection, decentralized social networking services. |
|    | <b>CHEN Hanxiong</b><br>Database system, knowledge-based system, e-education, information retrieval, knowledge discovery and data mining.      |
|    | <b>TSUGAWA Sho</b><br>Network mining, Social network analysis, Computational social science.   |
|   | <b>HASEBE Koji</b><br>Multi-agent systems: Game theory, Mathematical logic, Formal methods, Autonomous distributed systems.                    |
|  | <b>MAEDA Atsushi</b><br>Implementation of programming languages, garbage collection, runtime system, resource management.                      |
|  | <b>MACHIDA Fumio</b><br>System dependability, dependability evaluation, stochastic models, system design optimization.                         |
|  | <b>HAYASE Yasuhiro</b><br>Software Engineering: Program comprehension, software repository mining, software maintenance.                       |
|  | <b>BOU Savong</b><br>Database system, data engineering, scientific database, XML/RDF Database.   |
|  | <b>HORIE Kazumasa</b><br>Machine Learning, Neural Network, Pattern Recognition, Biological Signal Processing.                                  |

## Computer Architecture






| Faculty   | Detailed Description of Research Field  |
|---|---|
|  | <b>TAKAHASHI Daisuke</b><br>High-performance computing: High-performance numerical algorithms on parallel computers and performance evaluation. |
|  | <b>TATEBE Osamu</b><br>Parallel and distributed system software, data-intensive computing, and high performance computing.                      |




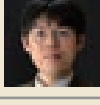
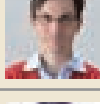
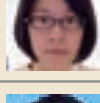

|   |   |
|---|---|
|    | <b>NUKADA Akira</b><br>High Performance Computing, Performance Optimization, GPU Computing.   |
|    | <b>BOKU Taisuke</b><br>Massively parallel and high performance computing systems: Massively parallel computer architecture, cluster computing and its system software, high performance computing system including GPU/FPGA accelerators. |
|    | <b>YASUNAGA Moritoshi</b><br>VLSI engineering: VLSI design and implementation of parallel and distributed systems and evolutionary systems.   |
|    | <b>KIMURA Shigetomo</b><br>Information communication engineering: Process algebra, network protocols and performance evaluation of communication systems.   |
|    | <b>SATO Akira</b><br>Design and operation technology for academic network systems, information systems and computing systems.   |
|    | <b>SHOUNO Kazuhiro</b><br>Analog integrated circuit and circuit theory: Highly linearized CMOS transconductors and complex filters.   |
|    | <b>YAMAGIWA Shinichi</b><br>Algorithms, Software/Hardware and Applications of Embedded System, Data Compression, Distributed System, Computer Architecture and Sports Engineering.  |
|  | <b>YAMAGUCHI Yoshiki</b><br>Reconfigurable architecture, computing, and highly efficient systems with high performance and low-power consumption applied to AI, encryption, IoT, and scientific applications.                             |
|  | <b>TOMIYASU Hiroshi</b><br>Making better use of significantly progressing microprocessors for parallel computer architecture after Age of vector supercomputers and massively parallel computers.   |
|  | <b>KANAZAWA Kenji</b><br>VLSI Engineering, Reconfigurable computing, Accelerator for hard computation problems using reconfigurable LSI.  |
|  | <b>KOBAYASHI Ryohei</b><br>FPGA applications, Reconfigurable Computing System, High-speed RTL Simulation.   |
|  | <b>SANNOMIYA Shuji</b><br>Autonomous, parallel, and distributed processor architecture: Research on data-driven chip-multi-processor based on self-timed elastic pipeline.  |
|  | <b>TADANO Hiroto</b><br>Numerical analysis: Numerical algorithms for large scale linear systems. Parallel computing for eigenvalue problems.  |
|  | <b>Fujita Norihisa</b><br>High Performance Computing, Accelerator, GPU Computing, Reconfigurable Computing, High Performance Interconnection.   |

## Media Engineering







| Faculty   | Detailed Description of Research Field  |
|---|---|
|    | <b>KAMEYAMA Keisuke</b><br>Learning, adaptive information processing, signal / image encoding, and applications to retrieval and restoration.   |
|    | <b>KUDO Hiroyuki</b><br>Image processing and medical imaging: Image and video processing, imaging science, medical imaging (CT,PET,MRI) and computer-aided diagnosis, intelligent image sensing, music and sound processing, mathematics of inverse problems. |
|    | <b>TAKIZAWA Hotaka</b><br>Intelligent image processing: medical image recognition, computer-aided diagnosis, computer vision, 3-D object recognition.   |
|    | <b>MITANI Jun</b><br>CG and CAD: Geometric modeling, Human computer interface, Computational origami.   |
|    | <b>KANAMORI Yoshihiro</b><br>Computer graphics (CG), rendering, deep learning, image editing techniques, CG applications for industry.  |
|    | <b>SUZUKI Taizo</b><br>Multi-perception media processing: Signal processing, image/video processing, compression, perceptual encryption, information hiding, sparse representation, filter banks/wavelets.  |
|   | <b>YAMADA Takeshi</b><br>Speech and acoustic information processing: speech recognition, sound scene understanding, multi-channel signal processing, media quality assessment, and e-learning.  |
|  | <b>ENDO Yuki</b><br>Computer graphics, image synthesis and editing techniques, image recognition, data mining, machine learning, deep learning.   |

## Intelligent Systems

| Faculty   | Detailed Description of Research Field   |
|---|--|
|  | <b>KUNIHIRO Noboru</b><br>Cryptography, Information Security, Quantum Computation, Cryptanalysis, Cryptographic Protocol.  |
|  | <b>SAKAI Ko</b><br>Computational vision: representation of shape, perception of 3D structure, figure-ground segregation, cortical representation, cognitive neuroscience, and psychophysics. |
|  | <b>SAKUMA Jun</b><br>Security and Privacy for Artificial Intelligence: Machine Learning, Artificial Intelligence, Data Privacy, Applied Cryptography.  |
|  | <b>FUKUI Kazuhiro</b><br>Pattern recognition and computer vision: Face recognition, 3D object recognition, human sensing, robot vision.  |
|  | <b>YAMAMOTO Mikio</b><br>Natural Language Processing on the Web using statistical methods: Statistical machine translation and Web documents processing such as sentiment analysis.          |

|  |   |
|--|---|
|   | <b>AKIMOTO Yohei</b><br>Black Box Optimization and its Applications: probabilistic model based optimization, evolutionary computation, hyper-parameter optimization in machine learning, reinforcement learning, application of information geometry to algorithm design. |
|   | <b>IIZUKA Satoshi</b><br>Computer graphics, image processing, image editing, computer vision, machine learning.   |
|   | <b>IGARASHI Yasuhiko</b><br>Machine learning, Multivariate analysis, Sparse modeling, Data-driven science, Measurement informatics, Materials informatics.  |
|   | <b>INUI Takashi</b><br>Natural Language Processing: Information extraction and knowledge acquisition from natural language data, opinion mining, and sentiment analysis.  |
|   | <b>ARANHA Claus</b><br>Research on Evolutionary Computation: Optimization, Program Generation, Procedural Generation, Intelligent Agents and Artificial Life.   |
|   | <b>YE Xiucui</b><br>Feature selection for high dimensional data, Clustering, Machine learning, Data analysis, Classification, Network computing.  |
|  | <b>FUKUCHI Kazuto</b><br>Mathematical statistics and machine learning: statistical inference, statistical learning, fairness and privacy in machine learning, data mining.  |

## Professors of Cooperative Graduate School

| Faculty   | Detailed Description of Research Field   |
|---|--|
|  | <b>KOBAYASHI Takumi</b><br><small>(National Institute of Advanced Industrial Science and Technology)</small><br>Statistical pattern recognition and machine learning : Deep learning, Feature extraction and representation, Image classification, Video classification, Multidimensional sensor data analysis.                          |
|  | <b>SATO Mitsuhsia</b><br><small>(Institute of Physical and Chemical Research (RIKEN))</small><br>High-performance parallel computing systems: Cluster computing, parallel programming systems such as OpenMP and HPF, benchmarking and performance evaluation of parallel computing systems, parallel and distributed computing on Grid. |
|  | <b>SATOH Yutaka</b><br><small>(National Institute of Advanced Industrial Science and Technology)</small><br>Ubiquitous vision, Robot vision, Stereo omnidirectional system (SOS).  |
|  | <b>NAKADA Hidemoto</b><br><small>(National Institute of Advanced Industrial Science and Technology)</small><br>Parallel computing, distributed computing, grid, cloud, machine learning.   |
|  | <b>TANIMURA Yusuke</b><br><small>(National Institute of Advanced Industrial Science and Technology)</small><br>Parallel and distributed storage. Large-scale data processing. Cloud computing. Grid computing. E-science applications.   |
|  | <b>NAKATA Ayako</b><br><small>(National Institute for Materials Science)</small><br>Application of Computational Mathematics and Machine Learning to Materials Science (Quantum chemistry, First-principles simulation).   |

# Courses

## Master's Program

### Common courses:

Master's Seminar in Computer Science  
Master's Research in Computer Science I  
Master's Research in Computer Science II  
Instructional Design  
Data Analysis  
Experiment Design in Computer Sciences  
Program Development on Embedded System  
Services and Data Privacy  
Special Lecture on Social Innovation by ICT  
Internship I  
Internship II  
Human-centered AI A  
Human-centered AI B

### Software Systems:

Programming Environment  
Concurrent Systems  
Data Engineering I  
Data Engineering II  
Advanced Course in Distributed Systems  
Advanced System Programming  
Techniques for Mining Software Repositories

### Intelligent Systems:

Advanced Course in Statistical Language Modeling  
Advanced Course in Computational Linguistics  
Image Recognition and Understanding  
Computational Vision Science  
Special Lecture on Cryptography I  
Special Lecture on Cryptography II

### Information Mathematics and Modeling:

Advanced Nonlinear Systems  
Advanced Course in Computational Algorithms  
Special Lecture on Numerical Simulation  
Systems and Control  
Systems and Optimization  
Basic Computational Biology

### Computer Architecture:

Advanced Parallel Processing Architecture  
Integrated Systems Engineering  
Advanced Course in High Performance Computing  
Advanced Computer Network  
Advanced Circuit Engineering

### Project Practice:

Project Practice Workshop  
Initiative Project I  
Initiative Project II

### Intelligent Software:

Advanced Course in Programming Languages  
Advanced Course in Program Theory  
Intelligent Sensory Information Processing  
Special Topics in Computer Human Interaction I  
Special Topics in Computer Human Interaction II  
Principles of Software Engineering  
Topics in Computer Ethics  
Advanced Course on Cryptography

### Media Engineering:

Advanced Course in Signal and Image Processing I  
Advanced Course in Signal and Image Processing II  
Advanced Course in Signal and Image Processing III  
Advanced Course in Speech Media Engineering  
Advanced Course in Computer Graphics  
Adaptive Media Processing

### Special Lectures on Selected Topics:

Topics in Computational Science I

## Computer Science English Program

### Common Courses:

Master's Seminar in Computer Science  
Master's Research in Computer Science I  
Master's Research in Computer Science II

### Elective Courses:

Advanced Course in Computational Algorithms  
Special Lecture on Numerical Simulation  
Basic Computational Biology  
Principles of Software Engineering  
Topics in Computer Ethics  
Programming Environment  
Data Engineering I  
Advanced Course in High Performance Computing  
Adaptive Media Processing  
Experiment Design in Computer Sciences  
Topics in Computational Science I  
Human-centered AI A  
Human-centered AI B

### Campus-wide Courses for Graduate Students:

Computational Science Literacy  
High Performance Parallel Computing Technology for Computational Sciences

## Practical IT Curriculum

### Common courses:

Project Practice Workshop  
Initiative Project I  
Special Lecture on Social Innovation in ICT  
Internship I  
Advanced Course in Cyber Risk  
Principles of Software Engineering  
Topics in Computer Ethics  
Techniques for Mining Software Repositories  
Program Development on Embedded System  
Services and Data Privacy  
Special Lecture on Cryptography I  
Special Lecture on Cryptography II

## Doctoral Program

### Common courses:

Doctoral Research in Computer Science  
Doctoral Computer Science Seminar A  
Doctoral Computer Science Seminar B  
Research Internship I  
Research Internship II  
Interdisciplinary Laboratory Internship I  
Interdisciplinary Laboratory Internship II  
AI Applied Research Internship

# Prospects after graduation

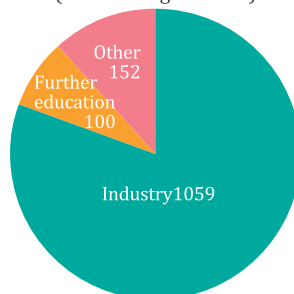
Students who have completed a major in computer science are expected to play a central role in today's information society. Approximately 80% of the students who completed the master's program in computer science and obtained a master's degree are employed by various companies, and about 10% of the students have advanced to the doctoral program. Students who have completed the doctoral program and obtained a Ph.D. work in corporate R & D departments, universities or national institutes. In some cases, they continue their research as postdoctoral fellows.

## Major employers of master's course graduates

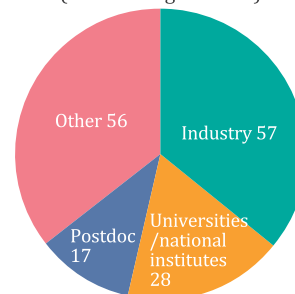
### ■ 2021

Yahoo Japan Corporation / Renesas Electronics Corporation / Fujitsu Limited / NEC Corporation / NS Solutions Corporation / SoftBank Corporation / Accenture PLC / LINE Corporation / Nintendo Co., Ltd. / SQUARE ENIX Co., Ltd. / CyberAgent, Inc. / OPTiM Corporation / NTT DATA Corporation / GREE, Inc.

Master's course (2012-2021)  
(number of graduates)



Doctoral course (2012-2021)  
(number of graduates)



## Major employers of doctoral course graduates

### ■ 2021

Institute of Physical and Chemical Research  
National Institute for Materials Science  
NEC Corporation  
Rakuten Group, Inc.  
The University of Electro-Communications

# Financial support

As financial support, various scholarships, exemption from admission and tuition fees, exemption from repayment of scholarships, and employment of teaching assistants are available.

In recent years, University of Tsukuba has enhanced its support for doctoral students in particular. For all students enrolled in the doctoral course, half of the entrance and tuition fees are supported for three years through the employment of research assistants. For students with excellent academic records, full tuition fees are supported for three years.

University of Tsukuba has been selected by MEXT for the "University Fellowship Program for the Creation of Innovation in Science and Technology", and JST for the "Support for Pioneering Research Initiated by the Next Generation". As a result of this program, in addition to the existing support as a JSPS Postdoctoral Fellow, the university provides financial support (living expenses and research expenses) to outstanding doctoral students.

# Admission information

In our program, the following entrance examinations are conducted for applicants for master's program and doctoral program, respectively.

## Examination for Master's Program applicants

We carry out three examinations: recommended entrance examination (July), general entrance examination (August), and general entrance examination (January to February). In addition, at the same time as the general entrance examination, we also carry out special selection of working individuals. In the entrance examination for the Master's / Doctoral Program in Computer Science, in order to make it easier for external applicants and working individuals to take the examination, oral examinations are emphasized. In the recommendation entrance examination, those who have been recommended by their affiliated university etc. are required to take the oral examination only, which assesses their knowledge in their specialized field and their aspirations. In the general entrance examination, an additional oral examination of basic subjects is required, and English proficiency is evaluated by TOEIC, TOEFL or IELTS scores (there is no written examination).

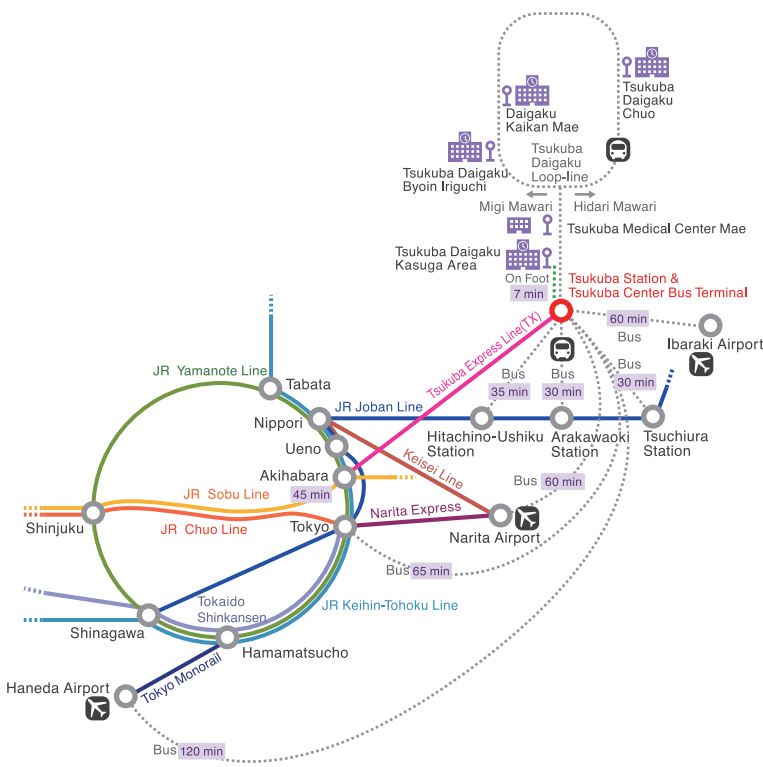
## More information regarding admission

The information above is subject to change. For the latest information on entrance examinations, please check the Master's/Doctoral Program in Computer Science website (<https://www.cs.tsukuba.ac.jp/english/>) and application guidelines.

## Examination for Doctoral Program applicants

We carry out two examinations: a general entrance examination in August (enrollment in April) and a general entrance examination in January to February (enrollment in April or October). In the doctoral course, we actively promote the acceptance of working individuals; at the same time as conducting general entrance examinations, we also conduct special selections for working individuals. In each of the entrance examinations, in addition to oral examinations which evaluate previous research, as well as post-admission research plans and motivation, English proficiency is assessed by conducting part of the oral examination in English. Moreover, those who have passed the special selection for working individuals can apply for "early completion doctoral program for working individuals", based on their work/education experience etc., and they can obtain a doctoral degree in a minimum of one year.

As a special arrangement for those living overseas, we also carry out two exams in July (enrollment in October) and January to February (enrollment in April or October). Screening and selection are based on the submitted application documents and an oral examination with an online conference system.



## Access

### Tsukuba Express

It will take 45 minutes by the rapid service from Akihabara Station to Tsukuba Station. Take a local bus bound for “Tsukuba Daigaku Chuo” or “Tsukuba Daigaku Loop-line Migi Mawari” from Tsukuba Station to Daisan Area Mae. It will take about 10 minutes.

### JR Joban Line

It will take around 60 minutes from Tokyo or Ueno Station to Hitachino Ushiku, Arakawaoki or Tsuchiura Station. Take a local bus bound for “Tsukuba Daigaku Chuo” from these stations to Daisan Area Mae. It will take 30-35 minutes. In case of the bus for “Tsukuba Center”, please transfer at “Tsukuba Center” bus terminal to a bus bound for “Tsukuba Daigaku Chuo” or “Tsukuba Daigaku Loop-line Migi Mawari”. It will take around 10 minutes.

### Highway Bus

It will take around 75 minutes from Tokyo Station Yaesu South Exit to “Daigaku Kaikan Mae” by bus bound for “Tsukuba Daigaku” and 10 minutes walking. In case of the bus for “Tsukuba Center”, please transfer at “Tsukuba Center” bus terminal to a bus bound for “Tsukuba Daigaku Chuo” or “Tsukuba Daigaku Loop-line Migi Mawari”. It will take around 10 minutes.

### By Car

Driving directions from Joban Highway → Exit “Sakura-Tsuchiura” IC → Proceed to Tsukuba (Turn left) → Turn right at Sasagi Intersection → Follow “Higashi Odori” Avenue → Turn left at the signal “Tsukuba Daigaku Chuo Iriguchi” (About 8km)

### By Air

#### From Narita Airport

By Bus: Take a bus bound for “Tsukuba Center”. It will take around 60 minutes. See above from Tsukuba Center bus terminal.

By Train: Take Keisei Line for Ueno Station. It will take around 45 minutes by Skyliner Airport Express. See above from Ueno Station.

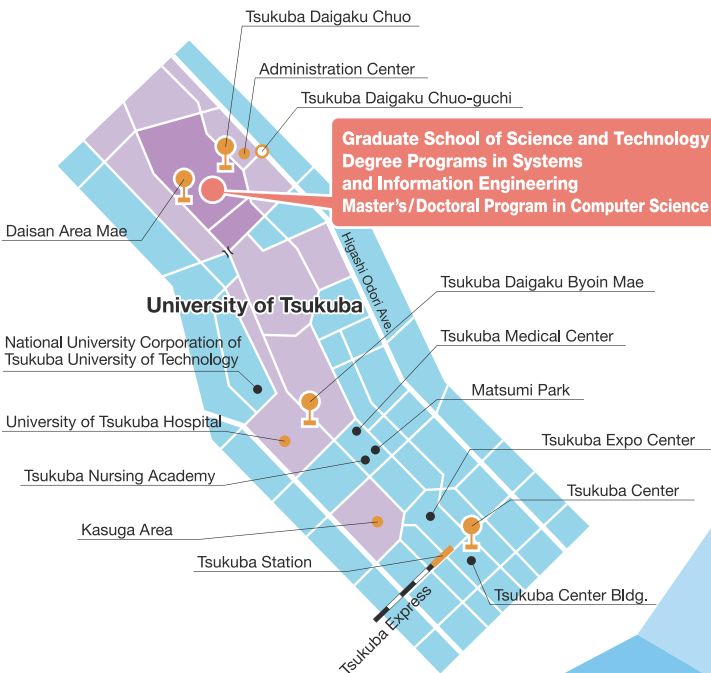
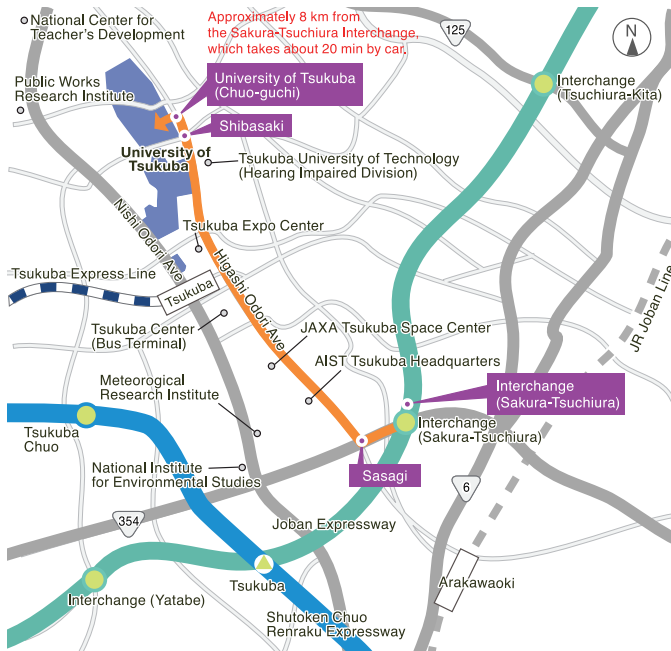
#### From Haneda Airport

By Bus: Take a bus bound for “Tsukuba Center”. It will take around 120 minutes. See above from “Tsukuba Center” bus terminal.

By Train: Take monorail to JR Hamamatsucho Station, or Keikyū Line to JR Shinagawa Station. It will take 20-23 minutes. Use JR Yamanote Line to Tokyo, Akihabara or Ueno Station. See above from these stations.

#### From Ibaraki Airport

Take a bus bound for “Tsukuba Center”. It will take around 60 minutes. See above from “Tsukuba Center” bus terminal.



## Contact

**address** Room 3F900, Building F, Third area, University of Tsukuba, Tennodai 1-1-1, Tsukuba, Ibaraki 305-8573, Japan

**tel** +81-(29)-853-5530

**fax** +81-(29)-853-5206

**e-mail** inquiry@cs.tsukuba.ac.jp