

English-based Program												
Department	Research Area	Research Instruction		Application Code		Main Supervisor				Vice Supervisor		
				Master	Doctor							
Department of Computer Science and Communications Engineering	Human Computer Interaction	Research on Computer Vision	Researches on computer vision and related pattern analysis, in both theory and application. Research subjects include basic techniques such as optimization and machine learning; vision technology such as 3D vision, video analysis, and object recognition; and their application in such areas as medical imaging, digital appliances, and computer graphics.	101	151	Professor	Doctor of Philosophy (New York University)	ISHIKAWA, Hiroshi	hfs@waseda.jp			
Department of Computer Science and Communications Engineering	Networking	Research on Intelligent Information Systems	Research on modeling and analysis of intelligent information systems regarding information networking and machine learning. It usually requires knowledge in information theory, probability and statistics. This area of research focuses on devising new techniques and algorithms to evaluate the performance of computer and network systems.	132	182	Professor	Doctor of Philosophy (Hokkaido University)	UCHIDA, Masato	m.uchida@waseda.jp			
Department of Computer Science and Communications Engineering	Advanced Computing Mechanisms	Research on Parallel Knowledge Information Processing	Design and implementation of programming languages. Our main objective is to explore and establish (i) principles of advanced computing for the 21st century that encompass knowledge information processing and parallel/distributed computing, and (ii) programming constructs and methodologies based on those principles. Both theoretical foundations and implementation will be addressed.	104	154	Professor	Doctor of Engineering (The University of Tokyo)	UEDA, Kazunori	ueda@waseda.jp			
Department of Computer Science and Communications Engineering	Advanced Computing Mechanisms	Research on Bioinformatics	Researches on Bioinformatics. This research is conducted with visiting professors from National Institute of Advanced Industrial Science and Technology.	128	178	Professor	Doctor of Engineering (Waseda University)	YAMANA, Hayato	yamana@waseda.jp	Professor Professor Professor Professor	Doctor of Engineering (Waseda University) Doctor of Information Engineering (Kyushu Institute of Technology) Doctor of Philosophy (University of Nevada) Doctor of Agriculture (Kyusyu University)	SHIMIZU, Kana TOMINAGA, Daisuke FUKUI, Kazuhiko ABURATANI, Sachiyo

English-based Program												
Department	Research Area	Research Instruction	Application Code		Main Supervisor	Vice Supervisor						
			Master	Doctor								
Department of Computer Science and Communications Engineering	Advanced Computing Mechanisms	Research on Computer Programming Languages	Research on theory and practice of programming languages. We address various modern programming languages research topics including program verification, program synthesis, and applications to computer security. We also investigate foundational topics such as type systems and automated deduction.	103	153	Professor	Doctor of Philosophy (University of California, Berkeley)	TERAUCHI, Tachio	terauchi@waseda.jp			
Department of Computer Science and Communications Engineering	Advanced Software	Research on Software Development Engineering	The research concerning various kinds of software development technologies including requirement analysis techniques, design techniques and so on.	106	-	Professor	Doctor of Engineering (Waseda University)	FUKAZAWA, Yoshiaki	fukazawa@waseda.jp			
Department of Computer Science and Communications Engineering	Advanced Software	Research on Intelligent Software	Research concerning the design and analysis of sophisticated (distributed) AI problem-solving and control architectures for both single- and multiple-agent systems, such as coordination, cooperation, emergence of social behaviors, machine learning in multi-agent systems, distributed autonomous task/resource allocations, and multi-agent simulations.	108	158	Professor	Doctor of Engineering (Waseda University)	SUGAWARA, Toshiharu	sugawara@waseda.jp			
Department of Computer Science and Communications Engineering	Advanced Software	Research on Reliable Software Engineering	The overall goal is to investigate software engineering techniques and body of knowledge for developing a variety of software efficiently with high quality, especially about software architecture, modelling, design, reuse, and quality assurance including metrics, testing and formal verification.	109	159	Professor	Doctor of Information and Computer Science (Waseda University)	WASHIZAKI, Hironori	washizaki@waseda.jp			
Department of Computer Science and Communications Engineering	Advanced Software	Research on Computational Biology	Algorithm design and implementation for biological data analysis based on data-mining, machine learning, statistics, etc. The research topics include but not limited to high-throughput genome sequencing data analysis and privacy preserving data mining for genomic data.	130	180	Professor	Doctor of Engineering (Waseda University)	SHIMIZU, Kana	shimizu.kana@waseda.jp			
Department of Computer Science and Communications Engineering	Advanced Software	Research on Autonomous Agent System	Software systems embedded in the real world are exposed to various and uncertain changes occurred in the environment. We deal with engineering techniques to develop autonomous agent-based software that be able to adapt and/or evolve flexibly in response to the changes. Our research topics include self-adaptive systems that be able to change the software itself in response to the changes monitored at runtime, automated software evolution that updates software systems at runtime, Models@runtime that is a set of techniques to enable the self-adaptation and/or automated software evolution by utilizing models at runtime, and automatic program repair that automatically identifies and fixes program faults causing failures.	133	-	Professor	Doctor of Engineering (Waseda University)	HONIDEN, Shinichi	honiden@nii.ac.jp			

English-based Program												
Department	Research Area	Research Instruction	Application Code		Main Supervisor	Vice Supervisor						
			Master	Doctor								
Department of Computer Science and Communications Engineering	Information Systems Architecture	Research on Distributed Systems	Distributed Operating Systems, Distributed Embedded Systems, Information Appliances, Mobile Computing, Ubiquitous Computing, Distributed Multimedia Processing, Software Design Issues for Large-Scaled Distributed Systems.	110	160	Professor	Doctor of Engineering (Keio University)	NAKAJIMA, Tatsuo	tatsuo@waseda.jp			
Department of Computer Science and Communications Engineering	Information Systems Architecture	Research on Advanced Computing Systems	Supercomputer, Multicore processor, Low power technology, Advanced parallel/distributed architecture, Parallelizing compiler, Multicore API, Multiprocessor scheduling algorithm, Parallel multimedia processing, Multicore application for consumer electronics and car.	111	161	Professor	Doctor of Engineering (Waseda University)	KASAHARA, Hironori	kasahara@waseda.jp			
Department of Computer Science and Communications Engineering	Information Systems Architecture	Research on Parallel and Distributed Architecture	Researches on Information Retrieval, Data Mining, Parallelizing Compiler (Speculative Execution) and Parallel & Distributed Computing.	112	162	Professor	Doctor of Engineering (Waseda University)	YAMANA, Hayato	yamana@waseda.jp			
Department of Computer Science and Communications Engineering	Information Systems Architecture	Research on Advanced Processor Architecture	Organizations of advanced microprocessors like multicores, collaboration between processors and software, and advanced applications for advanced microprocessors	113	163	Professor	Doctor of Engineering (Waseda University)	KIMURA, Keiji	keiji@waseda.jp			
Department of Computer Science and Communications Engineering	Human Computer Interaction	Research on Information Access	Research on information retrieval and access, natural language processing, and human computer interaction.	129	179	Professor	Doctor of Engineering (Waseda University)	SAKAI, Tetsuya	tetsuya@waseda.jp			

English-based Program												
Department	Research Area	Research Instruction	Application Code		Main Supervisor	Vice Supervisor						
			Master	Doctor								
Department of Computer Science and Communications Engineering	Networking	Research on Cryptographic Protocols	Research on designing cryptographic protocols that mathematically controls which information to disclose and which not using cryptography. Thus area of research serves to achieve secure, fair and privacy enhancing systems to be used in social systems, avoiding concentration of power.	135	185	Professor	Doctor of Engineering (Kyoto University)	SAKO, Kazue	kazuesako@oni.waseda.jp			
Department of Computer Science and Communications Engineering	Information Systems	Research on Design and Analysis Systems	To create advanced computers, information communication systems, etc., SoC (System on a Chip) design, network systems, CAD (Computer-Aided Design) algorithms for hardware/software codesign, and processing systems for medical data have been studied.	114	164	Professor	Doctor of Engineering (Waseda University)	YANAGISAWA, Masao	myanagi@waseda.jp	Professor	Doctor of Engineering (Waseda University)	TOGAWA, Nozomu
Department of Computer Science and Communications Engineering	Information Systems	Research on Information System Design	We focus on the reseach topic on hardware/software design on advanced image processings and network processings. Especially, we study SoC (System-on-a-Chip) architecture design, processor design, hardware/software co-design, and their computer-aided design	115	165	Professor	Doctor of Engineering (Waseda University)	TOGAWA, Nozomu	ntogawa@waseda.jp			
Department of Computer Science and Communications Engineering	Communication Network	Research on Wireless Communication Network	Researches on wireless system technologies from link level to system level that contribute to enhancing wireless communication networks. Especially focusing on modulation and demodulation, error control coding, multiplexing, and resource allocation for realizing high-speed, high-capacity, and high reliability in wireless communication networks.	117	167	Professor	Doctor of Engineering (Waseda University)	MAEHARA, Fumiaki	fumiaki_m@waseda.jp			
Department of Computer Science and Communications Engineering	Communication Network	Research on Networked Systems	The target of this research is large-scale networked systems such as the Internet. We aim to solve the fundamental problems of the systems. In order to establish the goal, we use the various approaches: monitoring, statistical analysis and modeling, controlling, and forecasting. Our research interests include but not limited to the following topics: deep understanding of the Internet through the statistical approaches, developing fast and scalable network monitoring algorithms, network security, modeling of temporal-spatial behaviour of mobile devices.	118	168	Professor	Doctor of Information and Computer Science (Waseda University)	MORI, Tatsuya	tmori@waseda.jp			
Department of Computer Science and Communications Engineering	Communication Network	Research on Distributed Computing Systems	The followings are the areas covered by this research: 1. Data network replacing the Internet. More specifically, Information Centric Networking and its IoT application and 2. Performance and configuration of distributed processing systems.	120	170	Professor	Doctor of Philosophy (University of Illinois)	NAKAZATO, Hidenori	nakazato@waseda.jp			

English-based Program												
Department	Research Area	Research Instruction		Application Code		Main Supervisor				Vice Supervisor		
				Master	Doctor							
Department of Computer Science and Communications Engineering	Communication Network	Research on Wireless Access Scheme	We study on wireless access schemes for various kinds of telecommunications, such as, wireless communication, body area communication, ultrasonic communication, optical mobile communication, airborne communication, stratospheric communication, small satellite communication, UAV network system, so on.	I21	I71	Professor	Doctor of Engineering (Tohoku University)	SHIMAMOTO, Shigeru	shima@waseda.jp			
Department of Computer Science and Communications Engineering	Communication Network	Research on Wireless Network Systems	We study on wireless network systems including hardware configuration, communication link design, signal processing and wireless networking. We perform research to meet the increasing communication performance demand, with focus on optical wireless communication and smart grid system design.	I07	-	Professor	Doctor of Engineering (Tohoku University)	SHIMAMOTO, Shigeru	shima@waseda.jp	Associate Professor	Doctor of Global Information and Communication (Waseda University)	LIU, Jiang
Department of Computer Science and Communications Engineering	Communication Network	Research on Information Security	We conduct research on information security and privacy technologies. The research will target various objects that range from the lower to the upper layers; e.g., including hardware, sensors, communications, networks, operating systems, systems, web, software, acoustic signals, characters, human, and human perception. We will combine the various domain knowledge and security frameworks.	I34	I84	Professor	Doctor of Information and Computer Science (Waseda University)	MORI, Tatsuya	tmori@waseda.jp			

English-based Program												
Department	Research Area	Research Instruction		Application Code		Main Supervisor				Vice Supervisor		
				Master	Doctor							
Department of Computer Science and Communications Engineering	Media Content	Research on Perceptual Computing	We design a human-friendly man-machine interface by installing human perceptual ability such as auditory and eyesight functions on computers.	124	174	Professor	Doctor of Engineering (Waseda University)	KOBAYASHI, Tetsunori	koba@waseda.jp	Professor	Doctor of Engineering (Waseda University)	HAYASHI, Yoshihiko
Department of Computer Science and Communications Engineering	Media Content	Research on Image Information	Researches on image coding, image processing, multimedia networking and their application systems. Examples are motion picture coding, computer vision, three-dimensional image processing, internet video, wireless video, sensor networks and multimedia communication systems.	125	175	Professor	Doctor of Engineering (The University of Tokyo)	KATTO, Jiro	katto@waseda.jp			
Department of Computer Science and Communications Engineering	Media Content	Research on Audio-visual Information Processing	We conduct research on user-driven video representation in the field of audiovisual information processing. In this research, we deal with video and audio processing and video coding using deep learning. We will investigate techniques that can extend the degree of freedom of the user's understanding of information and transformation processing.	126	176	Professor	Doctor of Engineering (Hokkaido University)	WATANABE, Hiroshi	hiroshi.watanabe@waseda.jp			
Department of Computer Science and Communications Engineering	Media Content	Research on Multimedia Information Distribution System	We study about multimedia information distribution systems from various aspects including the topics of but not limited to multimedia information distribution, metadata representation, metadata processing, metadata distribution, bio-signal processing for emotion understanding, content retrieval, content recommendation, multimedia data processing, multimedia data recognition, multimedia data classification, big data analysis, user context analysis.	127	177	Professor	Doctor of Engineering (Waseda University)	KAMEYAMA, Wataru	wataru@waseda.jp			
Department of Computer Science and Communications Engineering	Media Content	Research on Media Intelligence	We study acoustic and speech processing, image processing, human behavior processing, pattern recognition, and machine learning to seek for effective ways to use media information and understand human functions and behavioral principle.	131	181	Professor	Doctor of Engineering (Waseda University)	OGAWA, Tetsuji	ogawa.tetsuji@waseda.jp			

English-based Program												
Department	Research Area	Research Instruction		Application Code		Main Supervisor				Vice Supervisor		
				Master	Doctor							
Department of Computer Science and Communications Engineering	Media Content	Research on Optimization and Learning for Systems	We are dedicated to optimization and learning theory and algorithm and its applications, which appear in various technical fields, for example, machine learning, statistical learning and signal processing. Our focus includes optimization and learning algorithms, optimization and learning models, and those practical applications. We investigate them with respect to empirical numerical evaluation and theoretical analysis. We also particularly address non-linear and non-convex optimization and structured learning constrained with non-linear structure.	136	186	Professor	Doctor of Engineering (Waseda University)	KASAI, Hiroyuki	hiroyuki.kasai@waseda.jp			
Department of Computer Science and Communications Engineering	Media Content	Research on Natural Language Processing	We study and develop artificial intelligence systems that can understand language like humans. In particular, by combining findings and technologies of computer science and linguistics, we work on world knowledge acquisition/utilization and text analysis/understanding. Furthermore, we aim at elucidating the mechanisms by which humans understand language and developing systems which incorporate such mechanisms.	137	187	Professor	Doctor of Informatics (Kyoto University)	KAWAHARA, Daisuke	dkw@waseda.jp			
Department of Computer Science and Communications Engineering	Human Computer Interaction	Research on Computer Graphics	We research on both practical applications and theoretical foundations of computer graphics, with a particular focus visuals, optimization, and machine learning. Research topics include, but are not limited to, reinforcement learning for game development, differential rendering, video restoration, design optimization, and non-photorealistic rendering	138	188	Associate Professor	Doctor of Philosophy (Polytechnic University of Catalonia)	SIMO-SERRA, Edgar	ess@waseda.jp			