■ 公募情報

Subject No.	2024R-25
Job Title	Research Assistant
Department	Quantum ICT Collaboration Center
Work Contents (Research theme)	Research on fundamental aspects and applications of quantum information and communications technologies
Detail of Work Contents	To carry out research, selecting one or more themes in the following list of eight themes. (1) Research on quantum-classical hybrid information processing using quantum computers, and semiconductor annealers and so on, including algorithms, programming, simulation methods, applications to network optimization etc.). (2) Research on quantum measurement and controls, including quantum measurement theory and its experimental verification, quantum feedback control, quantum error mitigation and so on. It may include development of detectors and control tools, or improvement of peripheral technologies such as optoelectronics. (3) Theoretical study on quantum communication including quantum repeaters. (4) Research on quantum cryptography and/or physical layer cryptography. Eithertheoretical or experimental study is acceptable. (5) Research on networks combining quantum-classical hybrid information processing, quantum cryptography, and quantum communication, including conceptual design/architecture, network control, assistance for testbed experiments, etc. (6) Free space optical communication, optical measurement, optical sensing (primarily conceptual design/architecture and development of component technologies). (7) Feasibility study or research on quantum information theory, including continuous-time quantum error correction, quantum machine learning, quantum circuit theory, tensor networks, etc. (8) Research and development of programs and tools for human resource training, and assistance of exercise and information exchange activities in NICT Quantum Camp. Research assistant is supposed to serve as a member of Young Researcher Challenge Laboratory, which consists of other research assistants who work on the above themes, and advisors of NICT and from other organizations. The Article 15(2) of the Act on the activation of Science, Technology and Innovation will be applied to this work content.
Application requirement	Students who have a duty to devote themselves, such as a Research Fellowship for Young Scientist of the Japan Society for the Promotion, cannot apply. Students who have a duty to devote themselves, such as a Research Fellowship for Young Scientist of the Japan Society for the Promotion, cannot apply. Have a track record of activity or be able to submit a research and development concept in one of the subjects indicated in the abstract of the research theme. The applicant should be able to communicate smoothly with collaborators inside and outside the laboratory, and engage in research in cooperation and collaboration with them. If you have received a grant that requires you to devote yourself to research, or if you have plans for short-term study abroad or an internship at a company, please indicate so in your resume (the frequency and timing of your work as a Research Assistant will be discussed with you). [Welcome requirements] Expertise or training experience in quantum mechanics, quantum computing, quantum communications, quantum cryptography, modern cryptography, quantum relay, quantum measurement, quantum sensing, quantum measurement standards, optical space communications, optical sensing, network control, or network architecture. Interest in the convergence of these topics. Ability to work with programming languages such as Python, C, Java, etc. Applicants should be able to prepare and submit an explanatory document (1-2 pages of A4 size) on their activities and achievements or an explanatory document (2-3 pages of A4 size) on their research and development concept for the selected research theme.
Recruiting (Number of people)	7
Contract period	hiring date 〜 March 31,2025 N.B. Contract will not be renewed.
Salary (basic salary)	1,400JPY 〜 2,010／hour The daily wage for undergraduate students is 1,400 yen per hour for undergraduate students, 1,720 yen per hour for first semester doctoral students, and 2,010 yen per hour for second semester doctoral students. However, as a basic salary is compliant with government employees' wages, it shall be changed when a basic salary is changed after labor union and the like of NICT agreed under a revision to the government employees' wages.
Work Place	Headquarters (Koganei-shi, Tokyo)
Working frequency	4days/week, 4hours/day

Department name and work place including work contents (research theme) and detail of work contents might change according to organizational change, etc.
Scope of change in work and workplace : No changes are expected in general.