

Approach to an elderly dominated society — Introduction of Global Robot Academia —

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Facing an elderly dominated society, Robot Technology (RT) is expected to play an important role in medical, welfare, and life support areas. Waseda University has been designated a Global Centre of Excellence (GCOE) in the field of innovative research on symbiotic technologies between humans and robots in an elderly dominated society. The Global COE Program was initiated by the Ministry of Education, Culture, Sports, Science and Technology (MEXT, Japan). Our GCOE base endeavours to cultivate young, global researchers through the fundamental reform of our doctoral program, practical research process and close cooperation with overseas research institutes.

In our group, we work in close cooperation with medical and welfare institutions since 1970. It is important for robot control to use mechanical properties of human, such as material mechanics, dynamics, thermo dynamics and fluid dynamics. We have developed medical and welfare robots which are controlled using this information, such as soft tissue rigidity, organ thermal conductivity or blood flow rate in tissue. This means, that we transform experimental knowledge of surgeons and caregivers into mechanical quantitative properties. Mechanical engineering is a crucially important area to promote collaboration between medical and engineering fields. In 2009, "monotukuri commons" was established by 12 societies including the Japan Society of Mechanical Engineering (JSME), I believe that, through these proactive activities we can make a healthier society.

