

Division of Mechanical Science and Engineering	Research field	Robotics and Mechatronics	Lab. ID
			MS32
Laboratory web site	http://as.ms.t.kanazawa-u.ac.jp		
Research subjects			
<p>We are widely studying various robotic and mechatronic systems and automation. Robotics and Mechatronics technology becomes close to our life. A theme in this laboratory is "Producing various movements of various machine." Our major interests are human friendly robot, smart sensing system, indoor navigation, new welfare system, and industrial application. We cope with each project after considering which is suitable for its purpose, general robot or highly specialized machine. Moreover, we think a great deal of not only theory and simulation but also demonstration by making prototype to show our original idea.</p>			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
<p>Each student is assigned to one research project and he/she conducts it individually under supervisors. Since our projects relate deeply to each other, students discuss about them frequently. We have a laboratory meeting every week and each student reports research progress and problems. The students research in flexible time without core time. Academic conference presentation is recommended at least once in two years for a master course student and once every year for a PhD course student. PhD course students should also submit journal papers.</p>			
Daily life in the laboratory, etc.			
<p>Each student has a space for desk work and experiment. Students spend time like a family in our laboratory. We have some events including a welcome party, summer party, year-end party, and farewell party. A research time is left up to each student. However, it's necessary to report progress of research activities once in two weeks. After graduating, students generally work at manufacturers of automobile, electric machinery, construction machinery and heavy machinery.</p>			
Message or comments by the laboratory faculty staffs			
<p>You need "motivation" and "patience" to proceed your research project. After a lot of reconsideration, trial and error, I believe you surely get nice outcomes. Robotics and mechatronics are synthetic technology including mechanics, electronics, computer, etc. Enjoy research with us together to realize revolutionary ideas!</p>			
Recent Master theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2017.3	Study on Hydraulic Driving System for Robots		
2017.3	Handwriting Input Device Wearable on the Back of Hand		
2017.3	Automatic Cutting Machine for the Block of Piled Gold Leaves and Papers		
2017.3	Development of Assistive Robot for Power Line Maintenance		
2017.3	Study on power assist mechanism for lumbar motion		
2016.3	Design of Hydraulic Robot for In-pipe Repair		
2016.3	Development of Sheet Covering Device for Truck		
2016.3	Contact Detection of Obstacles for Large Trailer		
2016.3	Dynamic Manipulation of Unknown String by Robot Arm		
2016.3	3 Dimensional Environment Recognition Using Depth Map and the Application		
2015.3	Reducer Using Bearings		
2015.3	3D Obstacle Detection Using Laser Range Finder for A Powered Wheelchair		
2015.3	Energy-saving Drive of Robot Arm by Variable Tension Mechanism		
2015.3	Automation of Cutting Piled Gold Leaves and Papers		
2015.3	Design of a control system of a hybrid system		
2015.3	Study of power assist system using the worm reducer		
2015.3	Recession path generation of a trailer using the repeated direct kinematics		
2015.3	Robot handling using 3D point cloud		
2014.3	Localization by Reflective Marks and A Camera with Infrared LEDs		

2014.3	Automatic Hook Crane
2014.3	Misalignment Detection of Crane Container
2014.3	Compact and Multifunctional Hydraulic System for Robots
2014.3	Evaluation of the servo performance when using a FV convert for velocity detection
2014.3	Control of the position and the posture of the object grasped by multi-fingered robot hand
2013.3	Hydraulic Drive Drilling Robot with 4-DOF Tool for In-pipe Repair
2013.3	Position Recording System Using Ultrasonic Beacons
2013.3	Dynamic Manipulation of A Rope with Unknown Parameters by A Robot Manipulator
2013.3	Obstacle Detection System for A Powered Wheelchair
2013.3	Localization System for A In-pipe Mobile Robot
2013.3	Building of walking movement by the repeated direct kinematics
2013.3	Development of a robot crane using tension control of a rope
2013.3	Study of tele-operation by a robot
2012.9	Recession path generation of a trailer using the repeated direct kinematics
Recent Doctoral theses in these 3 years (+ more if appropriate)	
year.month	Thesis title (including English translation of Japanese thesis title)
2016.3	Detection of Human by Thermopile Infrared Sensors
2015.3	Handwriting Input Device Using Scratch Sound
Laboratory mail address	Hiroaki Seki <hseki *at* se.kanazawa-u.ac.jp> Tokuo Tsuji <tokuo-tsuji *at* se.kanazawa-u.ac.jp> Masatoshi Hikizu <hikizu *at* se.kanazawa-u.ac.jp>