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

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.

Master/Doctor course: Education policy, curriculum, typical activity in the laboratory

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.

Daily life in the laboratory, etc.

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.

Message or comments by the laboratory faculty staffs

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!

Recent Master theses in these 3 years (+ more if appropriate)

year.month	Thesis title (including English translation of Japanese thesis title)
2017.9	Manipulation to Put the Washing on a Hanger by a Robotic Arm
2017.9	Development of a Compact Drilling Robot for In-Pipe Repair
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>