

Division of Electrical Engineering and Computer Science	Research field	Interface Device	Lab. ID EC06
Laboratory web site	<a href="http://ifdl.jp/">http://ifdl.jp/</a>		
Research subjects			
<p>Recent deveopment of the computers and the ICT technologies realize the drastic advances of our daily life and social systems. They are extending their applciation areas from inside the virtual world to the physical, real world. The technologies related to the extended ICT application areas are also extended from the software technology to the hardware and the physical technologies.</p> <p>In our laboratry, we hold the LSI (large scale integrated circuits) technologies as a tool for system implementation, and aim at realizing the interface device, between man and machine, man and machine, or machine and man. In order to realize the target interface device, we use the possible technologies for implementation, including the specially designed LSIs, as well as the conventional electronic circuit components.</p>			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
<p>1. Setting Target: application systems of interface devices, especially those that deeply related to human interface.</p> <p>2. Choosing Tools: implementaiton technologies, such as PCB design, MCU circuit, LSI design, 3D modeling.</p> <p>3. Evaluation: evaluate the implemented system, especially how worth for human usability.</p>			
Daily life in the laboratory, etc.			
<p>We provide training program for MCU, electronic building, and LSI design. The students' office desk are shuffled twice a year, so the students as to share the knowledges and skills.</p>			
Message or comments by the laboratory faculty staffs			
<p>Let us aim at realizing the actually worth systems and devices for human beings, with having the wide technical and social viewpoints.</p>			
Recent Master theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2021.3	Asym-mekakushi: Development and evaluation of augmented reality system to support face-to-face communication by asymmetric gaze information		
2021.3	Development and Evaluation of Body-Extension Device that Links Color Vision and Body Movement		
2021.3	Display System based on Line-of-Sight Prediction of Saccade		
2020.3	Real-Time Blood Flow Sensor Monitoring System for Internet of Things (IoT)		
2020.3	Educational Material for Embedded Technologies using Gamification		
2020.3	Super-resolution with pseudorandom pixel placement and its evaluation		
2019.9	Text Region Extraction Algorithm with Scene Selection for Automatic Text Translation Device		
2019.3	Evaluation of effect of emotional stimulus on spatio-temporal characteristics of line of sight movements		
2019.3	Contactless Mastication Measurement Algorithm using Kinect for Food Education Material		
2019.3	Development of toolkit device for interactive balloon art and its evaluation		
2018.3	Accuracy Improvement Method on Angular Measurement of Lines using Hough Transform with Pseudorandom Pixel Placement		
2018.3	Development and Evaluation of Multimodal Body-Extension Device using User's Explore Action		
2017.3	Node Position Estimation Method Using Inter-node Distance Information and Its Evaluation		
2017.3	A Method of Eye Area Extraction from Wide Angle Image of Head and Its Evaluation		
2017.3	Central Scotoma Simulator using High Speed Display and Line-of-Sight Measurement System		
2017.3	Design and Evaluation of Vision Chip for High Speed Line-of-Sight Measurement		
2016.3	Pixel Structure for Image Instrumentation and Jaggy Reduction using Pseudorandom Pixel Placement		
2016.3	Prototyping System for Interactive Devices using Block Devices with Power Line Communication		
2015.3	The motion detection algorithm and application to actual image in independent time axis system for each pixel		
2015.3	High speed and high accuracy saccade prediction algorithm		
2015.3	Design and Implementation of Block Device with Power Line Communication		
2014.3	Design and Evaluation of High-Speck Image Sensor for Line-of-Sight Detection Camera with Saccade Tracking Capability		
2014.3	Line-of-Sight Detection Camera with Saccade Tracking Capability and Its Applications for Interaction		
2014.3	Tangible System for Programming Education Using Matrix LED Blocks with Bi-color Pattern Draw and Display Capabilities		
2014.3	User interface of remote control device with user's operation history and pointing operation of target		

2014.3	Interactive Block Device with Function Definition Capability using Visible Light
2014.3	Wireless Indoor Location Estimation Method Using Rotary Type Directional Antenna for an Autonomous Mobile Robot
2014.3	Application of the Imaging System using Pseudorandom Pixel Placement to the Area Measurement and the Display Systems
2014.3	Search of information presentation method in shape perception apparatus based on searching behavior
2013.3	Multi-channel Electromyography Measurement System Using Power Line Communication on Conductive Cloth
2013.3	Flexible display system composed of independent pixels with position detection capability
Recent Doctoral theses in these 3 years (+ more if appropriate)	
year.month	Thesis title (including English translation of Japanese thesis title)
Laboratory mail address	
	<a href="mailto:akita@is.t.kanazawa-u.ac.jp">akita@is.t.kanazawa-u.ac.jp</a>