

Information Architecture	
Laboratory	Title
Fujimura	Supplier Selection and Order Allocation based on Bi-leveling Programming Model and AHP-Weight Method
Fujimura	An NFT marker based AR manual system providing hand gesture and voice interaction
Fujimura	Pedestrian Detection in Adapting Daytime and Nighttime with Thermal Images Using a Classification Hypernetwork
Fujimura	A convolutional network model for steel surface defect detection based on multiple mechanisms
Fujimura	BASS-Based Uncertain Market Diffusion Model for Short Life Cycle Consumer Electronic Products
Fujimura	Unsupervised Detection of Anomalous Sounds for Machine Condition Monitoring Using Memory Autoencoder
Fujimura	Research on Introducing Customer Management to Vehicle Routing Problem in Cold Chain Background
Fujimura	Many-objective green Flexible Job Shop Scheduling based on improved NSDE-III
Fujimura	Monitoring Restricted Items of Logistics Based on Object Detection
Fujimura	Garbage classification system based on embedded system using deep learning convolutional neural network
Fujimura	House-sharing Recommendation based on Heterogeneous Information Network that solving the Data Sparsity and Cold-start Problems
Fujimura	The impact of uncertain lead time on imported short shelf life packaged foods with stochastic demand
Fujimura	Study of Total Flexible Job-shop Scheduling Problems Considering Worker Load
Furuzuki	Coarse-To-Fine Contour and Mask Collaborative Network for Accurate Biomedical Image Segmentation
Furuzuki	A Study of Action Recognition Based on Representative Frame Selection Method
Furuzuki	Image Based Single-View 3D Reconstruction with Soft-Attention Module
Furuzuki	A Study on Cold Start Problems in Recommender Systems with Meta-Learned Method
Furuzuki	A Study of Improved Building Extraction Network with Multi-scale Feature Fusion Attention Mechanism
Iwaihara	Visualizing Temporal Evolution of Keyphrases and Their Relatedness
Iwaihara	Click Count Prediction by Utilizing Link-Structural Text Embedding and Temporal Attention
Iwaihara	Ensemble of Bag-level BERT and General Entity BERT for Distantly Supervised Relation Extraction
Iwaihara	Supervised Learning of Keyphrase Extraction Utilizing Prior Summarization
Iwaihara	Multimodal Sentiment Analysis Based on BERT Text Encoding
Iwaihara	Integrating RoBERTa fine-tuning and User Writing Styles for Authorship Attribution of Short Texts
Iwaihara	Key Text Extraction for Long Document Classification
Kamata	MRI Brain Tumor Segmentation Using Two-Stage Coarse-to-Fine Network Framework
Kamata	Data Augmentation for Ancient Character Recognition Through MIX-Style Net
Kamata	Pulmonary Nodule Detection for Lung Cancer Using Improved ISODATA and R-CNN
Kamata	Unsupervised Depth Estimation Siamese Network From Stereo Using Matching Cost Fusion
Kamata	Derivative Feature Based Deep Residual Network for Low-Light Image Enhancement
Koyanagi	Load Balancing of MySQL Database Cluster on Kubernetes
Koyanagi	Research on Improved Scheme of Blockchain Consensus Mechanism
Koyanagi	Research on the Task Scheduling Strategy in Apache Storm
Koyanagi	A Lightweight DDoS Attack Detection Method in Software Defined Network
Koyanagi	Research on Attack Path Generation Based on Q-Learning Algorithm
Koyanagi	Research on Job Scheduling Optimization of Hadoop YARN
Koyanagi	Research on Anti-Cheating Technology for Games Based on Blockchain Theory
Koyanagi	Research on Computation Offloading Strategy in wireless powered Multi-Access Edge Computing Based on Deep Reinforcement Learning
Lepage	A first study on a dialogue system for an academic writing aid system
Lepage	Generation of sentences from corrupted sentences avoiding grammatical errors and plagiarism
Lepage	Machine translation for a less-resourced language: Manipuri (Meiteilon)
Lepage	Triple-GAN and Mask-and-Generate: two approaches for unsupervised text sentiment and style transfer
Lepage	Retrieval of similar sentences formally and semantically covering a sentence
Matsumaru	Training a Robotic Arm Movement with Deep Reinforcement Learning
Matsumaru	Recognition of Chinese Traffic Control Gestures Using RGB video data
Matsumaru	Device-Free Indoor Human Daily Activity Recognition Based on Wireless Networks
Matsumaru	Fast and Incremental Loop Closure Detection Combining Point and Saliency Feature for Real-time Monocular SLAM
Matsumaru	Estimation of Deformation of Flat and Flexible Object Using RGB-D Sensor for Reproduction by Robotic System
J.Tanaka	AR Smart House: Using Customized Interactive 3d Models to Control IoT Devices
J.Tanaka	AR Safety Education Software: Remind the Child and Make the Child Aware of Danger by Interacting With Indoor Items
J.Tanaka	Context-Aware AR Scheduling Assistant Using Personalized Avatars
J.Tanaka	An AR Document Collaboration System Combining Physical and Digital Content With Gesture Interactions
J.Tanaka	ARDiary: A Life Record System With Augmented Content and Physical Interactions
J.Tanaka	Magic Tour: An AR System Combined With Tangile Maps for Sharing Navigation
J.Tanaka	Scene Re-Experience: A New Design to Enhance Remote Communication
J.Tanaka	AR Fitness Coach - Exercise Assistant System for Body-Training Guidance and Motivation
Tsubokawa	An Implementation of FDTD simulation with dynamic display based on GPU parallel computing and CUDA-OpenGL interoperability
Yoshie	Emotion Source Identification in Group Discussion
Yoshie	A GPS-Free Entry and Exit Recognition Method for Smartphone Power Saving
Yoshie	An Imbalanced Node Classification Framework Based on Graph Convolutional Networks
Yoshie	Object Detection by Convolutional Neural Network with Multi-label Branch for Intermediate Supervision
Yoshie	Personalized-node-attention Graph Convolutional Network for Recommendation
Yoshie	A Weakly-Supervised Framework for COVID-19 Lesion Segmentation from Chest CT Image
Yoshie	Multi-layer Adaptive Feature Fusion for Fine-Grained Image Classification
Yoshie	Long and Short-Term Interest Based Attention Recurrent Neural Network Model for Short Video Recommendation
Production Systems	
Laboratory	Title
Inuishi	Study on the front and back side device structures and the layout design of the reverse conducting IGBT
Inuishi	New device structure design on the reverse conducting lateral IGBT on SOI
Inuishi	Improvement of the reverse conducting IGBT by super junction
Inuishi	Structure design on an n channel lateral SOI IGBT with a p top resurf for emitter follower type complimentary IGBT
Inujima	3D Object Detection from Point Cloud of Lidar for Autonomous Driving
Inujima	3D Object Detection Method based on YOLO for Autonomous Driving
Inujima	Point cloud map and localization by segmentation based on lidar
Inujima	Large-Scale Place Recognition Based on Images and 3D Point cloud fused Descriptor for SLAM
Inujima	Stereo Visual SLAM for Delivery Robot Using Point and Line Features
Inujima	Stair Climbing Delivery Robot Design, Strength Analysis and Control
Inujima	A New Loop Closure for Lidar NDT Mapping
Lee	Variable Sampling Region RRT for Emergency Evacuation Navigation in Urban Areas
Lee	Attention-based Bidirectional Long Short-Term Memory for Drowsy Driving Detection
Lee	Auto-Splitting Method using Improved Gap Statistics with k-means for Faster Path Planning in Large Map
Lee	Drowsy Driving Detection using Gated Recurrent Unit based on bidirectional Recurrent Neural Network
Miyake	Molecular extraction and injection in living cells by pressure-controlled Au nanotube ducts

Miyake	Wireless, stretchable contact lens sensors for intraocular pressure monitoring
Miyake	Direct reprogramming of fibroblast cells using protein delivery through metallic nanotubes
Miyake	Electrochemical control of neuron transmitters at the biodevice/cell interface
Miyake	High efficient magnetic nanoparticle delivery into adhesive cells with magnetic field
Miyake	Cellular transport enhancement using microtubule motors through gold nanotubes
Miyake	Direct power generation from alcohol using enzyme/CNT composite fabrics
Miyake	H ⁺ -mediated control of cell functions with nanoneedle arrays
Ogai	Confidence-based Reinforcement Learning for Lane Change Behavior Policy
Ogai	Safe decision policy making for autonomous driving in intersection scenario using reinforcement learning
Ogai	Traffic signal detection and separation with yolov3
Ogai	Auto brake pulling control using linear actuator for ULV
Ogai	A path planning method for autonomous driving based on improved A-star algorithm
E.Tanaka	Kinect-based 3D human motion acquisition and evaluation system for remote rehabilitation and exercise
E.Tanaka	Development of a safe and compact lower limb device for motion guidance and assistance using stepper motor
E.Tanaka	Three-dimensional condition map integrated physical and mental state recognition for controlling the walking assistance device
E.Tanaka	Design of a bifunctional walking assistance exoskeleton without electricity power
Tateno	Study on Positioning Methods by Constructing Probability Distribution Map based on RSSI
Tateno	Sign Language Recognition System based on Hand Coordinate Detection by Motion Capture
Tatsumi	Partial discharge characteristics on epoxy-based nanocomposite under different experimental environments.
Tatsumi	Improvement of the reliability of interconnection in solar cells by using nickel micro-plating bonding (NMPB).
Tatsumi	The reliability of thick Ag wire wedge bonded on Al pad for power device

Integrated Systems

Laboratory	Title
Ikehashi	Design of A Microseismometer with Ultra-Small Resonance Frequency Enabled by Multi-Step Electrical Tuning
Ikehashi	A MEMS capacitance varying charge pump
Ikehashi	A Differential Pressure Monitoring System using Absolute Pressure Sensors with Colored-noise Kalman Filter
Ikenaga	Image Assistance and Bone-Length Stability based 3D Pose Estimation from Monocular Camera
Ikenaga	Directional DCT-Correlation with Monotonous Estimation for High Frame-rate and Ultra-low Delay Sub-pixel Location Detection
Ikenaga	Time-dependent Composite Frame-rate based CNN using Hybrid FPGA/GPU Configuration for Real-time Small Object Detection
Ikenaga	Critically Compressed Quantized CNN based High Frame Rate and Ultra-Low Delay Fruit External Defect Detection
Ikenaga	Multi-scale Ball Motion Feature Based Self-correcting Approximation Model for Monocular 3D Volleyball Trajectory Estimation
Ikenaga	Vote Address Selection and Timely Initialization for High Frame Rate and Ultra-low Delay Hough Transform
Kakitsuka	Surface-Illuminated Photodiodes Employing Space-Traveling Electrons for Terahertz Applications
Kakitsuka	Wire-Like Active Region Membrane Lasers on Silicon for Chip-to-Chip Optical Interconnect
Kakitsuka	Dual-Bias-Voltage Space-Traveling Carrier Photodiodes for Terahertz-Wave Generation Systems
Kakitsuka	Directly Modulated Distributed Reflector Lasers Using Detuned-Loading Effect for Extended Optical Fiber Transmission Reach
Kimura	Energy-Efficient Approximate Floating-Point Multiplier Based on Radix-8 Booth Encoding
Kimura	Ensemble Reduction on Random Forest by Logical Minimization
Kimura	Hybrid Methods Composed of Multiple Annealing and Classical Algorithm to Prime Factorization Problem
Kimura	Configurable Approximate Multiplier Using Self-Recovery Approximate 4-2 Compressors
Kimura	SAT-based Exact Synthesis of XOR-Majority Graphs
Ohsawa	Weight Scaling of ReRAM Crossbar Array for Neural Networks to Increase the Robustness against Hardware Variabilities
Ohsawa	Evaluation of Radiation-Induced Soft Error in Bi-Stable Memories Based on N-Curve
Ohsawa	Impact of Dummy Cell Averaging in Clamped Bit-Line Sense Amplifier on High Density Memory Chip Yield
Ohsawa	A Two-Step Training of Binary ReRAM Array Based on Hardware Measurement to Recover Accuracy Degradation due to Statistical Variabilities
Ohsawa	A New Training Method of Large-scale ReRAM Crossbar Arrays to Compensate Accuracy Degradation by Parasitic Wire Resistance
Ohsawa	A DRAM Based Inference Machine Using Analog Activation and Pulse-Width-Controlled Weight
Shinohara	An 8T Hybrid SRAM True Random Number Generator Using Hot-carrier Injection for Mismatch Compensation
Shinohara	A 7T SRAM Physical Unclonable Function with Negative Bias Temperature Instability for Stability Enhancement
Shinohara	Margin Test for Hot Carrier Injection Stabilized Hybrid SRAM PUF Using a Bias Generator
Shinohara	Probability Multiplier in Stochastic Computing and Application to Extended Naive Bayesian Inference
Shinohara	A SRAM Strong PUF with Hot Carrier Injection Burn-in and Redundancy
Shinohara	A Latch-Based True Random Number Generator with Adaptive VSS Bias Tuning for Robust Operation
Shinohara	A Modeling Attack Resilient Strong PUF with High Throughput and Low Energy
Shinohara	An Extended Naive Bayesian Network and Stochastic Number Generator for Bayesian Processor
Shinohara	Decorrelation and Debiasing Post-Processing Circuits for TRNG
Takahata	Laser Cleaning Analysis with an Ablation Model for Rust Removal on Steel Surface.
Takahata	High Repetition-Rate Passively Mode-Locked Fiber Laser at 2- μ m Band
Takahata	Multifunctional All-Optical Logic Gate Based on 3 \times 3 Multi-Mode Interference Coupler
Takahata	Performance Analysis on Millimeter-Wave Radio-over-Fiber System using Self-Heterodyne Detection.
Takahata	Design of a Compact Silicon Mach-Zehnder Interferometer Based on Kagome Valley-hall Photonic Crystal
Takahata	Design of a Slow-Light Silicon Optical Buffer Based on Valley Photonic Crystal
Yoshimasu	A 28-GHz High Efficiency Stacked-FET Power Amplifier with Novel Adaptive Load Circuit in 45-nm CMOS SOI
Yoshimasu	A 14-GHz-Band Low Phase-Noise LC-VCO IC with Harmonic Tuned LC Tank in 45-nm CMOS SOI
Yoshimasu	A 38-GHz-Band 4-stacked FET Power Amplifier with Novel Phase Linearizer in 32-nm CMOS SOI
Yoshimasu	A High Conversion Gain Down-Conversion Mixer with a Self-biased Transconductance Stage in 45-nm CMOS SOI for UWB Applications
Yoshimasu	A 14-GHz-Band Low Power LC-VCO with Self-Bias Source-Follower Feedback in 45-nm CMOS SOI
Yoshimasu	A 24-GHz-Band High Linearity Low Noise Amplifier IC with Adaptive Bias in 45-nm CMOS SOI
Yoshimasu	A Low Power Low Noise Amplifier with Noise Cancellation in 45-nm CMOS SOI for UWB Applications
Yoshimasu	A 28-GHz-Band Up-conversion Mixer with Novel Folded Sub-harmonic Structure in 45-nm CMOS SOI