

Information Architecture

Laboratory	Title
Fujimura	An Approach to solve Vehicle Routing Problem with Stochastic Demand using Safety Stocks by Improved PSO-GA
Fujimura	Maintenance Tools Recognition Based on Deep Learning
Fujimura	Surface Defect Detection based on Fully Convolutional Networks
Fujimura	Electric Logistics Vehicle Routing Problem with Time Windows based on Genetic Algorithm
Fujimura	Short-term Traffic Flow Prediction with Up-and-Downstream Spatial-temporal Relationship based on LSTM
Fujimura	Short-term Power Consumption Prediction based on Deep Learning
Fujimura	A General Product Identification Method for Mass Customization based on Deep Learning
Furuzuki	Monocular Camera Distance Measurement Based on Keypoint Detection
Furuzuki	A Study of Action Recognition Based on Group-of-Picture
Furuzuki	GAN with Reinforcement Learning for Style-Specific Music Generation
Furuzuki	Celestial Spectral Classification Based on Deep Learning Approach
Furuzuki	A Study of Lip Reading Using Deep Neural Networks
Furuzuki	Arbitrary Scale Image Super-Resolution Based on Deep Residual Networks
Iwaihara	Finding Wikipedia article sets that explain bursty edits
Iwaihara	Weakly-supervised neural categorization of Wikipedia articles
Iwaihara	Utilizing Latent Posting Style for Authorship Attribution on Short Texts
Iwaihara	Click-count weighted PageRank algorithm for ranking web articles and quality assessment
Kamata	ADHD Automatic Diagnosis via Fractal Dimension Complexity Map for Structural MRI
Kamata	Data Augmentation for Historical Document Images via Categorical Cascaded Variational Auto-Encoder
Kamata	A Ranking Based Attention Approach for Visual Tracking
Kamata	Edge-guided Hierarchically Nested Network for Real-time Visual Semantic Segmentation
Kamata	Hybrid Feature based Pyramid Structured CNN for Texture Classification
Koyanagi	Study on Secondary Indexing for Efficient HBase Query
Koyanagi	Improving the Process of Packet Matching in Software-defined Networking Switches
Koyanagi	A Method of Networking Policies' Conflict Detection Based-on SDN
Koyanagi	Improvement of Checkpoint Mechanism on Apache Flink
Koyanagi	Improvement of Spark Caching Mechanism
Lepage	Detection of objects in scientific documents: from PDF to LaTeX
Lepage	A study on unsupervised word embedding mapping
Lepage	Generating abstracts for NLP articles: relevant words and how to find them
Matsumaru	Brand Recognition of Partially Visible 500ml Plastic Drinking Bottles in Random Picking Task based on RGB Image

J. Tanaka	Online Virtual Try-On System Based On Personalized Avatar
J. Tanaka	Augmented Reality with Shared Augmented Object and Interaction between HMD and Non-HMD Users
J. Tanaka	Spatial Recognition Based Mixed-reality Shop System Providing Responsive Store Layout
J. Tanaka	Retrieving Episodic Memory in Lifelog System Focusing on Daily Conversation
J. Tanaka	Sliding Gaze: Head Movement and Touch Gesture Based Target Selection Technology
J. Tanaka	Research on Customized and Secure Augmented Reality
J. Tanaka	Spatial Note System: Combining the Advantages of SNS and Traditional Note
J. Tanaka	Personal Health-tracking System Focused on Social Communication to Get Motivation
Tsubokawa	Study on planar light waveguides with strip-loaded slot structure
Tsubokawa	Design of compact integrated polarization beam splitters using slot waveguide structures
Tsubokawa	Bending sensitivity and loss characteristics of the hetero-core fibers with squeezed shapes
Tsubokawa	Study on hetero-core structured refractive index sensor with phonic crystal fibers
Tsubokawa	An optimized scheme for routing, spectrum and core assignment in SDM-EONs
Tsubokawa	A study of modal crosstalk-aware routing and spectrum assignment problem in elastic optical networks with multicore few-mode fibers
Yoshie	An attentive neural network model for extractive summarization of scientific papers
Yoshie	Human action recognition by 3-dimensional CNN model with moving area detection
Yoshie	Bitcoin price prediction using blockchain data based on LSTM
Yoshie	Document representation on unlabeled small corpus using BERT transfer learning and fine-tuning
Yoshie	Generating semantic word association graph for human resource management
Yoshie	Edge guided image outpainting with high fidelity
Yoshie	Dense target image annotation based on deep learning

Production Systems

Laboratory	Title
Inuishi	Process and Device Structure Design of High Voltage N-Channel LDMOS on Bulk Si
Inuishi	Study on Backside Layout Design of Reverse-Conducting IGBT(RC-IGBT)
Inuishi	Device Structure Design and Thermal Modeling of High Voltage SOI LDMOS
Inuishi	Optimal Structure Design and Analysis of Reverse Conducting IGBT (RC-IGBT)
Inuishi	Super-Junction LDMOS on SOI with Termination Structures for High Voltage Operation
Inujima	Improved Pure Pursuit Path Tracking In Autoware based COMS Autonomous Driving
Inujima	Exploring the properties of mechanics and structure of the water gate
Inujima	Vehicle autonomous driving control with riding comfort realized by combined driver model
Inujima	Raindrop Removal and Object Detection for Autonomous Driving System Based on Generative Adversarial Network
Inujima	An agricultural autonomous working platform based on crawler robot
Inujima	An Obstacle Avoidance System for Autonomous Driving based on Dynamic Trajectory Planning
Inujima	Robust Robot Localization System Based on IMU and Stereo Camera Fusion
Inujima	High Accuracy Positioning and Mapping System with Low-cost GNSS Receiver
Lee	Dynamically Weighted and Simplified Diagonal A* algorithm with LERP Path Smoothing Method
Lee	B-Spline-Decomposition-based Modeling-free Iteration Learning Control Considering Disturbance for Electric Cylinder
Lee	Deep Reinforcement Learning Agent with High Flexible Action and Multiple Reward for Adaptive Isolated Intersection Traffic Signal Control
Lee	Modified PID Neural Network Control for Binary Power Plant
Lee	Path Planning Using Modified GA Considering Penalty Based on Satellite Image Feature Segmentation
Lee	Heap and Safe Corner A* algorithm Combined with Backtracking Task Assignment for Multiple Rescue Robots
Miyake	Enzymatic powered iontophoretic patch for drug delivery into mammal skin
Miyake	Power generation from lactate acid in sweat using enzyme/CNT composite films
Miyake	Wireless-powered electrochromic soft contact lens using PEDOT/Polyurethane composite films
Miyake	Electrochemical control of proton flow at the interface between biotransducer and bionic ion channel lipid bilayer
Murata	Optimizing Dynamic VRP for On-demand bus with Time Window and Uncertain Traveling Time
Murata	Research Delivery Path Planning for Relief Supply with Quickest Transshipment Problem
Murata	Risk Assessment of New Product Development Process with Concurrent Engineering based on Stochastic Net
Murata	The revised title of my master thesis is : PM2.5 Concentration Forecast Method based on Empirical Mode Decomposition and Random Forest.
Murata	Optimizing Site and Size of EV Charging Station for Cost and Service Improvement under Stochastic Traffic flow
Murata	Recommender System based on Bayesian Matrix Factorization by using User Rating Data with Sparsity and User Preference Bias
Murata	Micro Grid Energy Operation Planning under Dynamic Demand with Uncertain Renewable Energy Generation

Ogai	Shared electronic medical records based on blockchain technology
Ogai	Path planning and tracking system for automatic valet parking
Ogai	Obstacle detection and tracking based on laser range finder for autonomous driving system
Ogai	Faster object detection based on Faster-RCNN and Kalman Filter in autonomous driving
Shimizu	Optical technique for noninvasive measurement of blood turbidity using differential principle
Shimizu	Attempt to estimate absorber depth in two-dimensional near-infrared transillumination image
Shimizu	Development of real-time system for near-infrared functional transillumination imaging
Shimizu	Computer simulation of light propagation in human tissue for noninvasive measurement of blood turbidity
E. Tanaka	Establishment of the Relation between Emotion Evaluation and Walking Condition
E. Tanaka	Design of a Wheelchair for Assisting the Elderly to Stand up and Move on Stairs
E. Tanaka	Development of Body Data Recognition System based on Sitting and Standing-up Motion
E. Tanaka	Motion Trajectory Optimization of an Assistive Device While Walking on Stairs
E. Tanaka	Development of Predictive Control Based on Kalman Filter for Kinect-Based Upper-Limb Assistance Device
E. Tanaka	Development of In-Situ Portable Laser Diagnostic System for Gear Surface Damage
Tateno	Development of Activity-based Pedestrian Dead Reckoning Method
Tateno	Development of Drowsiness Detection System Based on Heart Rate Features
Tateno	Improvement of RSSI Measurement Method in Mesh Network for Indoor Positioning System
Tateno	Development of external corrosion predictive model for insulated pipes in petrochemical plants
Tateno	Development of Human Detection System Using Infrared Array Sensor
Tateno	Human detection in the smart house system with mobile platform
Tateno	Real-time Indoor Localization System Based on Improved Machine Learning Algorithm
Tateno	Gestures Recognition System for VR Input Based on Electromyography Signal
Tateno	Development of Pressure Sense Feedback System for Prosthetic Hand Support
Tateno	Improvement of Multilateration Methods Using RSSI for Indoor Positioning System
Tatsumi	Dielectric breakdown characteristics of epoxy-mica tape with nano-filler insulation system

Integrated Systems

Laboratory	Title
Ikenaga	Temporal Constraints and Block Weighting Judgement Based Mismatch Removal for High Frame Rate and Ultra-Low Delay Matching System
Ikenaga	Body Part Categorization Based Tracking with Correction by Temporal Positions for Volleyball Spike Height Analysis
Ikenaga	Temporally Forward Nonlinear Scale Space with Pixel-Level Pre-Adjustment for High Frame Rate and Ultra-Low Delay A-KAZE Matching System
Ikenaga	Human Body Parts Model Combined Trajectories Feature Based Volleyball Player Receive Reaction Time Detection
Ikenaga	Team Formation Mapping with Sequential Motion and Relative Spatial Features Based Event Evaluation for Automatic Data Volley
Kimura	Majority-Inverter Graph Optimization Using Widened Selection Window
Kimura	Approximate Multiplier Using Reordered 4-2 Compressors with OR-based Error Compensation
Kimura	Weighted Random Forest Training Acceleration on FPGA with Combined Gini and Weight Computation
Kimura	A Parallel FPGA-based Accelerator with Compensating Normalized Quantization Error for Convolutional Neural Networks
Kimura	An FPGA-based Convolutional Neural Network with High Dynamic Resource Utilization Using Partial Reconfiguration
Kimura	Radix-4 Multiplier Based on An Approximate Encoder and Approximate Decoders
Ohsawa	Co-Design of Binary Process-In-Memory ReRAM Array and DNN Model Optimization Algorithm
Ohsawa	High-Density 1T1MTJ Memory with Row-Driven Source Line in Block Shunt Architecture
Ohsawa	A low power MAC core circuit based on 1T1C DRAM and its implementation into a neuromorphic computing system
Ohsawa	Array design of high-density emerging memories making clamped bit-line sense amplifier compatible with dummy cell average read scheme
Ohsawa	Accurate Measurement Scheme for Read Sneak Current in ReRAM Crossbar Array with Data Storage Pattern Dependencies
Ohsawa	Autonomous Refresh of a Hybrid 4TDRAM Applicable to Embedded Memories
Ohsawa	A New Cell Array Design Using MTJ/CMOS Hybrid Circuits with Power-On Data Loading Robustness against Vth Fluctuation
Ohsawa	Array Design of 6T2MTJ STT-MRAM with Source-line-controlled Background Write Scheme
Ohsawa	A Compact Model of Magnetic Tunnel Junctions Usable in De-Facto Standard Circuit Simulators Based on Switching Probability
Shinohara	Small Area and High Output Rate Post Processing Circuit by 7 bit Von Neumann Method
Shinohara	A 7T SRAM PUF with Variable Equalization Signal for Low Power
Shinohara	Improved FDPL for SCA-Resistance and Application to AES S-box Circuit
Shinohara	A Latch-Based True Random Number Generator with Tunable Capacitance for Wide Supply Voltage Range.
Shinohara	Machine Learning Attack Analysis and Implementation of Strong PUF
Shinohara	Mismatch Model Based on Bias Generator Implanted EEPUF for SRAM Physical Unclonable Function Behavior Learning and Masking Refinement
Shinohara	NMOS Hot Carrier Injection Characteristics Analysis and Its Application to SRAM PUF Stability Reinforcement
Shinohara	A SRAM-Based Strong PUF Utilizing Scrambling Scheme
Shinohara	A Transmission Gate Timing Tuning for Wider Supply Voltage Inverter-Based True Random Number Generator
Shinohara	Output Stabilized Inverter-Based TRNG Using Body-Bias Technique

Takahata	Polarization beam splitter based on a one-dimensional grating coupler with reflecting mirror
Takahata	All-optical gate for all types of logical operations based on 3×3 multi-mode interference coupler
Takahata	A compact SOI based polarization beam splitter using subwavelength gratings and hybrid plasmon waveguide
Takahata	Mode size converter on SOI waveguide for improvement of coupling with single mode fiber
Takahata	Evaluation method of crosstalk penalty of multi-channel PAM-4 signal
Takahata	Vertical optical waveguide consisting of ununiform cube cores for multi-layer chip-to-chip interconnection
Watanabe	Fast Symmetrical Routing Algorithm based on Pattern Routing
Watanabe	A Congestion Detection Mechanism and Its Applications for Network on Chip
Watanabe	A Traffic-Robust Routing Algorithm for Network-on-Chip Systems
Watanabe	A Congestion-avoidance Routing Algorithm for NoC with Detection and Propagation Mechanism for Congestion
Watanabe	Research of Fast Simulated Annealing Placement Algorithms for FPGA
Watanabe	A Hotspot-Pattern-Aware Routing Algorithm for Network-on-Chip
Watanabe	Online Task Placement Algorithm for 2D Reconfigurable Device based on Sophisticated MER Data Structure
Yoshimasu	A 28-GHz-band Doherty Power Amplifier IC with An Adaptive Bias Circuit for Auxiliary Path in 56-nm SOI CMOS
Yoshimasu	A 28-GHz High Linearity Sub-harmonic Down-conversion Mixer with Novel Source Injection Technique and Adaptive Bias in 56-nm SOI CMOS
Yoshimasu	A 28-GHz High Gain High Isolation Up-conversion Sub-harmonic Mixer with Derivative Superposition Technique in 56-nm SOI CMOS
Yoshimasu	A Wideband LC-VCO IC with an Inversion-MOS based novel varactor in 40-nm SOI CMOS
Yoshimasu	A 28-GHz Highly Linear Low Noise Amplifier with Transformer Feedback in 40-nm SOI CMOS