Information Architecture

Laboratory	Thesis title
Lepage	Reliability of word forms generated in analogical grids
Lepage	Extraction of analogical clusters from word embeddings
Lepage	Solving analogical equations between sequences of characters using context encoder
Lepage	An automatic text elaboration system for L2 learners of Korean
Lepage	Retrieval of most similar example sentences for EBMT
Lepage	Interpretable sense embeddings based on context clustering
Kamata	Metric Learning based on Outlier Sample Elimination for Person Re-Identification
Kamata	Deep Metric Learning with Histogram Based Online Selection Loss
Kamata	Frontal Gait Recognition from Incomplete RGB-D Streams
Kamata	Enhanced 3D Generative Network for Image Reconstruction
Kamata	Infrared Image Colorization by a S-shape Network
Kamata	Deep Neural Networks with Mixture of Experts Layers for Complex Event Recognition from Images
Kamata	Hybrid Connection Network with Feature Attention for Semantic Image Segmentation
Kamata	Character Recognition in Japanese Historical Documents via Adaptive Multi-Region Model
Kamata	Nuclei Segmentation of Cervical Cell Images Using Intermediate Segment Qualifier
Iwaihara	Finding high quality documents through link and click graphs
Iwaihara	Selecting article segment titles based on keyphrase features and semantic relatedness
Iwaihara	Fast identification of topic burst patterns based on temporal clustering
Iwaihara	Characterizing SNS Users' posting activities for prediction of user interests
Iwaihara	Entity Disambiguation Based on Neural Attention Model and Sparse Features
Yoshie	Recovery of vehicle path based on cellular positioning data
Yoshie	Correlated topic model with multi-stage auxiliary information
Yoshie	Mining user similarity based on sentiment analysis using twitter corpus
Yoshie	Image synthesis based on text descriptions using GAN
Yoshie	Single shot multi-box detector for small scale object
Yoshie	Asian face recognition with noise label regularization
Yoshie	Multi-layer intrusion detection system based on time series packet analysis
Yoshie	Atrous Inception Cascaded Network for Real-time Image Segmentation
Yoshie	Cross-field generative adversarial networks for image caption generation
Yoshie	A GAN based autoencoder for disease affected fingerprint recovery
Yoshie	Eye gaze detection using webcam images
Furuzuki	Margin-based Multiple Instance Learning with Auto-encoder
Furuzuki	A Convolutional Auto-encoder Method for Anomaly Detection on System Logs
Furuzuki	Relation Classification using Coarse and Fine-Grained Networks with SDP Supervised Key Words Selection
Furuzuki	A Study of Deep Quasi-linear Kernel Construction Using Semi-supervised Variational Model
Furuzuki	Autoencoder-based Feature Extraction Techniques for Protein Function Prediction
Furuzuki	A Study of Neural Network Based Kernel Learning for Support Vector Machine

Koyanagi	Study on Traffic-Aware Scheduling in Storm
Koyanagi	The SDN Controller Placement Problem in Large Scale Networks
Koyanagi	Improving Backpressure Mechanism on Storm
Koyanagi	Research on Shuffle Operation Optimization for Spark
Koyanagi	Improving the Restoration for Fast Link Failure Recovery in Large SDN
Koyanagi	Secure Cloud Computing Systems for the Internet of Things
Matsumaru	Implementation of Haptic Feedback in 3D Aerial Holographic Image Interface.
Matsumaru	Application of Proximal Policy Optimization method to Robot Manipulator doing Practical and Abstract Task.
Matsumaru	Path Planner & Mobile Robot Motion Framework for SLAM-less Navigation in Outdoor Pedestrian Environments.
Tsubokawa	Study on modal distribution converters with deterministic aperiodic waveguide arrays
Tsubokawa	Bit-error-rate evaluation for multi-core fiber transmissions with the space-coding scheme
Tsubokawa	Design of nano-sized dielectric waveguides with ultrasmall light spot
Tsubokawa	Study on enhancement of the coupling ratio in T-shaped optical splitters
J.Tanaka	Study on recognition of a person and an object using a Web camera
J.Tanaka	Aiding episodic memory in lifelog system focusing on user status
J.Tanaka	GesID: 3D Gesture Authentication by Deep Autoencoder and Incremental Learning
J.Tanaka	Spatial Note System Using Virtual-Agent to Enhance Family Connection
J.Tanaka	Lifelog Sharing System based on Context Matching
J.Tanaka	Augmented Reality Based Actuated Monitor Manipulation from Dual Point of View
J.Tanaka	A virtual shopping system based on room-scale virtual reality
Fujimura	Deep Neural Network Model for Short Term Electricity Consumption Forecasting
Fujimura	Virtual Machine Allocation in Dynamic Cloud Environment using Improved Particle Swarm Optimization
Fujimura	Flight schedule recovery with ant colony optimization
Fujimura	Genetic Algorithm with Effective Search Methods for Flexible Job Shop Problems
Fujimura	Credit card smudges and typographical errors recognition
Fujimura	A hybrid algorithm based on NSGA-II and SA for solving the Multi-Objective Flexible Job-shop Scheduling Problems
Fujimura	One-Dimensional Cutting Stock Problem: Optimize Action of Amount of Usable Leftovers in Stock

Laboratory	Thesis title
Inuishi	Study on structure and process design of planar and trench type IGBT to enhance the conductivity modulation
Inuishi	Study on structure and process design of complementary LIGBT on SOI using high energy ion implantation
Inuishi	Study on structure and process design of guard ring for VDMOS and IGBT
Inuishi	Study on structure and process design of reverse conducting IGBT (RC-IGBT)
Inuishi	Study on structure and process design of complementary LDMOS on SOI using high energy ion implantation
Inujima	Autonomous Path Tracking Control System based on Magnetic Sensor
Inujima	A 6-DoF Localization System based on LiDAR intensity Map and GPS for Autonomous Vehicle
Inujima	Automatic Driving System Based on Model Predictive Control
Inujima	Driver's Status Detection and Pre-warning System Based on Facial Features Points and Gaze Tracking Method
Inujima	Object Detection under Extreme Weather for Autonomous Driving System
Inujima	Research of bridge deterioration diagnosis based on independent component analysis
Inujima	A Q-learning Based Particle swarm Algorithm for Optimal Diesel Engine Control Parameters
Inujima	Collaborative car-following system based on fuzzy control
Miyake	Study on power generation from biofuels with enzyme-coated carbon nanotube fibers
Miyake	Study on organic proton devices and materials
Miyake	Study on wireless power transfer platform between eyeglasses/soft contact lens
Miyake	Study on a protonic biotransducer and its biological application for ionic communication
Miyake	Study on Au nanostraw membrane stamping for direct delivery of molecules into adhesive cells
Miyake	Study on an electrochromic soft contact lens using flexible and stretchable conductive polymers
Shimizu	Development of optical transillumination system for functional imaging of human foot
Shimizu	Depth estimation of absorbing object in turbid medium from optical transillumination image
Shimizu	Simulation on light propagation in inhomogeneous medium for noninvasive blood turbidity measurement
Shimizu	Development of optical system for noninvasive measurement of blood turbidity
Murata	On-demand bus scheduling with service time window based on Genetic Algorithm
Murata	Supply chain risk assessment method based on cause-consequence diagram and MIP optimization
Murata	Robust project scheduling with multi-mode resource constraints under uncertain activity duration
Murata	Market analysis for EV sales forecasting in China based on system dynamics model
Murata	Study on relief supply delivery planning based on capacitated network flow model
Murata	Trend prediction with feature selection based on SVM and Ensemble learning
Murata	Sales forecasting based on SVR with keyword filtering of Web search queries
Ogai	Multi-Detection System based on CNN with Semantic Segmentation
Ogai	Diesel engine NMPC control based on neural network
Ogai	Neural network-based monocular camera distance measurement and autonomous driving application for ULV vehicle
Ogai	Car Collision Warning System Based on Driver Behavior and Environmental Factors
Ogai	Traffic Light Detection for Autonomous Driving System Based on Small Scale Object Recognition
Ogai	Driving behavior monitoring and scoring system in safety and economy based on OBD interface and mobile internet
Ogai	Semantic Segmentation based on RGB and depth information in driving scenes
Ogai	Complicated object detection and bounding box regression based on CNN and optical flow

Tatsumi	Research on insulation properties of polymer nanocomposites using bisphenol F type epoxy resin
Tatsumi	Study on optimum plating conditions and joining reliability of interconnections formed by Ni micro plating using nickel sulfamate plating bath
E.Tanaka	Motion Planning Optimization of a Standing-up Assistance Device Based on Elderly Motions
E.Tanaka	Real-time Emotion Recognition System with Multiple Physiological Signals by Deep Neural Networks
E.Tanaka	Posture Compensated Zero-Moment Point Control Method of the Walking Assistance Apparatus
E.Tanaka	Development of Wearable Fall Protector based on Self-Folding Origami Structure
E.Tanaka	Laser Diagnostic Technology to Evaluate Gear Surface Conditions
Lee	Active Suspenpension LQG Control of Flexible Railway Vehicle
Lee	Multiply-Connected BP Neural Network for Thermal Fusion Bonding Control of Panel
Lee	Drowsy Driving Detection Using Bio-signals and Vehicle Data based on Neural Network
Tateno	Smart House System via Channel State Information Based on MIMO compatible Wi-Fi
Tateno	Indoor Position Localization System Based on Fingerprint by using Interpolation Method
Tateno	Driver Drowsiness Monitoring System Based on Respiration Rate and Stress Indicator
Tateno	Improvement of position estimation method in indoor localization system using statistical access point selection with RSSI
Tateno	Traffic lane line classification system based on monocular vision
Tateno	Physical activity state estimation in tridimensional space employing Inertial Measure Unit
Tateno	Development of Walking postures estimation system for Walking training

Integrated Systems

Laboratory	Thesis title
Yoshimasu	A 15-GHz Band Low Power Class-C LC-VCO in 40-nm SOI CMOS Technology
Yoshimasu	A 28-GHz band low power high reverse isolation LNA in 56-nm SOI CMOS
Yoshimasu	A 28-GHz High-Linearity, High-Efficiency Power Amplifier with Adaptive Bias in 56nm SOI CMOS
Yoshimasu	20-GHz Transformer-based High Tuning Range VCO in 40-nm SOI CMOS
Yoshimasu	A 28-GHz Band Low Power High Gain Telescopic Up-conversion Sub-harmonic Mixer IC in 56-nm SOI CMOS
Yoshimasu	A 28-GHz High Linearity Sub-harmonic Passive Down-conversion mixer with novel source injection Technique in 56-nm SOI CMOS
Yoshimura	Multiple Voltage Scheduling for Dynamic and Leakage Power Co-optimization in High Level Synthesis
Yoshimura	TSV Assignment of Thermal and Wirelength Optimization for 3D-IC
Yoshimura	Port Assignment for Interconnection Reduction in High-Level Synthesis based on Tabu Search
Yoshimura	Economical Smart Home Scheduling by Cuckoo Search Optimization via Levy Flight
Yoshimura	A Heuristic Optimization Algorithm for Power Scheduling in Smart Homes
Yoshimura	Data Dependency Aware Scheduling Based on Mobility Graph for Partial Reconfigurable Systems
Shinohara	A New Latch-based True Random Number Generator with Process Variation Tolerance
Shinohara	A Supply Voltage Range Improved Inverter-based True Random Number Generator in 130nm Process
Shinohara	Compensation of Temperature Induced Flipping-Bits in CMOS SRAM PUF by NMOS Body-Bias
Shinohara	Throughput Improvement and Design of Von Neumann Post-Processing Circuit for TRNG
Shinohara	A 7T SRAM Physical Unclonable Function with High Reproducibility in 130nm CMOS
Shinohara	A Four-Phase Dual-Rail Pre-Charge Logic for Power Analysis Resistance
Shinohara	Improvement of Bit Error Rate of EEPUF with Bias Generator and Masking
Shinohara	NBTI Aging for SRAM PUF Stability Enhancement and Its recovery after Aging
Ikenaga	Adaptive-Partial Template Update with Center-Shifting Recovery for High Frame Rate and Ultra-Low Delay Deformation Matching System
Ikenaga	Point-to-Camera Search Based Partition and Visible Camera Counting Based Fusion for Hardware-Oriented Parallel Bundle Adjustment
Ikenaga	Color Weighted Spatial and HSV-Sobel Alternated Temporal Observation for 60fps 3D Tracking of Twelve Volleyball Players on GPU
Ikenaga	Search-Free Linear Projection and Temporal Local Matching for High Frame Rate and Ultra-Low Delay SLAM System
Ikenaga	3D Ball Motion and Relative Position Feature Based Start Scene Detection for 60fps Volleyball Game Analysis on GPU
Ikenaga	Team Formation and Abrupt Pose Features Based Qualitative Action Recognition for Volleyball Game Analysis
Watanabe	Optimal Placement of Through Silicon Vias in 3D Network-on-Chip by Evolutionary Algorithm
Watanabe	High Performance 2D Network on Chip by Congestion Control
Watanabe	Efficient Simulated Annealing-based Placement Algorithm for FPGA
Watanabe	Deterministic Strategies to Improve the Performance of Adaptive Routing Algorithm for NoC
Watanabe	A Local-Congestion Managed Routing Algorithm for Network-on-Chip
Watanabe	A Novel Communication-aware Algorithm for Online Task Placement on FPGAs
Watanabe	Research on Fault Tolerant Routing Algorithm for 3D NoCs
Watanabe	A Low-Power and Performance-Aware FPGA Architecture based on Dynamically Controlled Power Gating
Baba	A Proposal of Sentence Level Modeling for Sentiment Analysis Based on CNN and LSTM
Baba	An FPGA-Based CNN Accelerator for Handwritten Digit Recognition
Baba	Face Recognition Based on Signed (+/-) Convolutional Neural Networks
Baba	Semi-supervised Learning Based on Generative Adversarial Nets for lmproving Face Recognition Accuracy
Baba	Obiect Recognition Based on Convolutional Neural Network Using Transfer Learning

Kimura	Hardware-Oriented Design of Quantized Neural Network Using Fixed-Point Batch Normalization
Kimura	Topology Optimization Based on Subtree Re-Construction for Low-Power Three Dimensional Gated Clock Tree Synthesis
Kimura	A High-Speed and Low-Power Approximate Multiplier Based on Radix-4 Partial Product Generation
Kimura	Multiplier Packing Based on Custom Floating Point with Shared Exponent for Convolutional Neural Networks on FPGA
Kimura	Obstacle-aware TSV Arrangement and Buffer Insertion in 3D Clock Tree Synthesis
Kimura	Binarized Residual Neural Network Training and Its Hardware Acceleration
Kimura	Energy-Efficient and High Performance Approximate Multiplier using Compressors Based on Input Reordering
Takahata	Compact multi-channel optical transmitter with flip-chip interconnection for over 400 Gbit/s.
Takahata	Study on crosstalk penalty of high-speed muti-channel optical transmitter.
Takahata	Research on crosstalk between electroabsorption modulators in high-speed muti-channel optical transmitter.
Takahata	Vertical optical waveguide with advanced cube cores for multi-layer chip-to-chip interconnection.
Takahata	Evaluation method of crosstalk penalty based on SNR analysis for multi-channel high-speed signals.
Takahata	High density optical waveguides with multi-layer structure for chip-to-chip interconnection over 1 Tbit/s
Takahata	Low crosstalk transmission lines for high-speed multi-channel optical transmitter.