

# 修士論文題目一覧/List of Master's Thesis

2025年3月修了生/March 2025 Graduates

## 情報アーキテクチャ分野/Information Architecture

研究室/Laboratory	論文タイトル/Title
藤村 Fujimura	Genetic Algorithms For The RCPSP With Storing Populations As Minimum Spanning Tree
	An improvement on NSGA-II for bi-objective single-stage job scheduling with a probabilistic approach
	作業者の残業時間と納期を考慮した生産スケジューリングモデルの構築と評価 Construction and Evaluation of a Production Scheduling Model Considering Operator Overtime and Delivery Deadlines
古月 Furuzuki	A Study of Sequential Recommendation with Subsequence Extraction Improved by Contrastive Learning
	A Study of 3D Occupancy Estimation via Dual Cross-attention Interaction
	A Study of Wi-Fi based Multi-User Activity Recognition by Cross-modal Supervision
	Power Quality Disturbances Classification Based on CNN Combining Knowledge Distillation and Incremental Learning
	Attention-based Heterogeneous Knowledge Distillation Strategy for Vision Transformers and CNNs
	Underwater Image Enhancement by Diffusion Transformer with Guidance
岩井原 Iwaihara	Mapping Wikipedia Categories and lists to DBpedia Classes by utilizing LLMs and Hierarchy Information
	Semi-Automatic Generation of Math Word Problems for Finding Reasoning Errors in Large Language Models
	RAG Pipeline for Ontology-guided LLM-based Knowledge Graph Extraction
	Table Annotation Utilizing Large Language Model and Knowledge Graph
鎌田 Kamata	マルチモーダル歩容認証のためのシルエット・スケルトンモデルの特徴融合 Feature Fusion of Silhouette-Skeleton Model for Multi-Modal Gait Recognition
	ハイパースペクトル画像超解像のためのスペクトル・グルーピング・トランスフォーマー Spectral Grouping Transformer for Hyperspectral Image Super-Resolution
	Multiscan Partitioning Visual Mamba for Breast Cancer Image Segmentation
亀岡 Kameoka	Colorimetric and Non-invasive Detection of Alcohol Concentration Based on Sweat
	Development of a High-Sensitivity Biosensor for Continuous Monitoring of Proteins in Sweat
	A lightweight, easy-to-manufacture pH sensor based on Zinc Oxide and Laser-induced Graphene
	Multi-walled carbon nanotube based biosensor for uric acid detection in human sweat
	Static hand gesture recognition for smartwatch based on vibration response signal
ルパージュ Lepage	Data augmentation for Manipuri-English neural machine translation
松丸 Matsumaru	Spatial-temporal Transformer with Kolmogorov-Arnold Network for Skeleton-Based Hand Gesture Recognition スケルトンベースのハンドジェスチャ認識のためのコルモゴロフ・アーノルドネットワークを用いた時空間トランスフォーマー
	Bidirectional Planning for Autonomous Driving Framework with Large Language Model 大規模言語モデルを備えた自動運転フレームワークのための双方向計画

伍 Wu	Intelligent Impersonation Method on Radio Frequency Fingerprint for Automotive mmWave Radars
	Learning Channel Selection with Passive-RIS for Efficient Topology Optimization in 5G-IoT
	Exponential Differential Privacy and Semantic Analysis Empowered Non-Numeric Locations Protection for Android
吉江 Yoshie	視覚情報と音声情報を活用した大規模視覚言語モデルによる動画キャプション強化 Harnessing Visual and Vocal Cues to Enhance Video Captioning by Vision-Language Models
	FlowBench: A Benchmark for Fine-Grained Visual and Temporal Dynamics Understanding in Video Language Models
	Multi-attribute guided Thermal Face Image Translation based on Diffusion Model
	オブジェクトトラッキングを用いたカメラ-LiDARの空間的・時間的キャリブレーション Camera-LiDAR Spatio-Temporal Calibration by Object Tracking
	Improving Neural Style Transfer via Semantic Segmentation and Geometric Preservation Techniques
	Prediction of Escherichia coli Resistance from Limited MALDI-TOF MS Data

## 生産システム分野/Production Systems

研究室/Laboratory	論文タイトル/Title
荒川 Arakawa	Development and Application of Surrogate Optimization Driven by PCA-RBFN
	Multi-Objective PSO Driven by DEA
橋本 Hashimoto	大浴場清掃業務効率化のための自動床洗浄ロボット開発に向けた基礎研究 Fundamental research on the development of an automatic floor-cleaning robot to improve cleaning efficiency of public baths
	Multi-robot system for cooperative object transport using a centralized large language model
	宿泊業の業務効率化のためのセンサ技術を活用した在庫管理システム Inventory management system utilizing sensor technology to improve operational efficiency in the lodging industry
	Motion generation for stair ascending and descending of a quadruped-wheeled robot
三宅 Miyake	パリティ時間対称性を基盤とする無線給電レンズの開発 Development of Improved Parity-Time Symmetry Wireless Power Transfer System on Contact Lenses
	ナノ注射器による細胞内物質輸送システムの開発 Development of a nano-injector intracellular material transport system.
	Electrical control of ion flow through conductive polymer coated nanotubes membranes and its application to intracellular delivery
高橋 Takahashi	異なる種類の光増感剤の放射線増感性能に関する研究 Study on the radiosensitizing performance of different types of photosensitizers
	Research on cross-resistance of lung cancer cell lines between drug resistance and radiation resistance
	Investigating the metabolic mechanisms of radiodynamic therapy in glioma cells by subcellular localization and ROS production
	Resistance to X-Ray in Platinum-Based Drug-Resistant HCT-116 Cells
田中 Tanaka	Real-Time Motion Monitoring and Mixed Control Strategy in a Compact Walking Assist Robot
	ベルト機構を用いたパッシブ式ヒューマンアシスト器具の開発 Development of Passive Human Assist Devices using Belt Mechanism
	肩・肘関節の角度に応じて自重補償する腕上げ動作補助装置の開発 Development of an arm-raising assist device with angle-dependent weight compensation for shoulder and elbow joints

## 集積システム分野/Integrated Systems

研究室/Laboratory	論文タイトル/Title
池橋 Ikehashi	Design of a pantograph based MEMS ring resonator
池永 Ikenaga	Geometric Edge and Surface Differentiation with Semi-Sparse Matching for Transparent Object Pose Estimation
碓塚 Kakitsuka	Membrane Semiconductor Optical Amplifier Integrated Electro-Absorption Modulator on Silicon for 50G Passive Optical Network Systems
木村 Kimura	Approximate Multiplier Combining OR-based Compressors with Only Sum or Carry Output for Error Compensation
牧野 Makino	拡散モデルに基づく音声強調の複数マイク化に関する研究 Multi-microphone Speech Enhancement Based on Diffusion Model
	フルランク空間共分散分析の観測モデル精密化に関する研究 Accurate Observation Model for Full-rank Spatial Covariance Analysis
高畑 Takahata	Compact thin-film lithium niobate microring resonator-loaded Mach-Zehnder modulator
山崎 Yamasaki	2D Magnetic shield design based on data-driven topology design
	データ駆動型トポロジーデザインに基づくパターンフィルターの設計 Distributed-Element Filter Design Based on Data-driven Topology Design
	Parametric optimization method for electromagnetic interference filters