Division of E	Electrical Engineering and	Research	Computer Science	Lab. ID	
	mputer Science	field		EC22	
Passagrab subjects					
Reth the cloud computing of Google and Microsoft and the embedded software such as home information					
Both the cloud computing of Google and Microsoft and the embedded software such as home information appliances and automobiles are social infrastructures. We study software technologies about cloud computings and embedded software. Typical research subjects are as follows: (1)Software model checking for verifying embedded systems, (2)Analysis and design of cloud computing based on aspect-oriented and objec-toriented software, (3)Artificial intelligence such as deep learning implemented on cloud computing, (4)Foundation of computer software such as programming language, operating systems, distributed systems.					
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory					
Master course: The first grade students take seminars such as cloud computing, deep learning and model checking. At the beginning of the second grade, the students decide their practical subject for the Master thesis and look for a job. Also master course students will present their study in domestic and international conferences. Doctor students are encouraged to go for outer activities, participating research workshops/meetings, international conferences.					
Daily life in the laboratory, etc.					
Personal working desk with a personal computer is available for every student. Also the PC cluster machine can be used for cloud computing. All relevant students of undergraduate, Master, Doctor researchers share the laboratory rooms, and everyday free discussion on computer software such as mathematical logic and programming language are strongly encouraged. Many laboratory activities are organized like, welcome party for new comers, excursion, summer workshop, etc.					
Message or	comments by the laborato	rv faculty sta	affs		
We think stu	idents should study softwa	re technolog	v revolutionizing the world for school days. Our labo	oratov gives	
an opportun	ity to study advanced soft	ware technol	ogies such as cloud computing and embedded softw	are. The	
student thin	ks by oneself and should le	earn.			
Recent Mast	ter theses in these 3 years	s (+ more if a	nnronriate)		
vear month	Thesis title (including Eng	lish translatio	on of Japanese thesis title)		
2021.9	SAFPN: Self Adapted Fea	ature Pyramic	Networks for Object Detection		
2021.0	Intrinsic Motivation as a (	Guide for Go-	Explore in Deep Reinforcement Learning		
2021.9	Convolutional Neural Net Classification	nvolutional Neural Network with Genetic Algorithm and Population Based Training for Text			
2021.3	The Improvement of FPN	network for	small target detection		
2021.3	Generalizing IoT Device's	s Client Appli	cation and making deploy efficient with Virtual Mach	nine	
0001.0	Automatic Generating As	sembly Progr	am including execution time into SMT-LIB2 for Mod	el Checking	
2021.3	of Real-Time Properties				
2021.3	Theory and Evaluation of Stepwise EM Algorithms	Heterogeneo	ous Mixture Learning based on Incremental EM Algor	ithms and	
2021.3	Proposal of Weighted Tre	e-LSTM with	TF-IDF and Its Experimental Evaluation		
2020.3	SMT-Based Bounded Mo	del Checking	of Embedded Assembly Programs		
2020.3	Software Model Checking on Lazy Abstraction and	; for Verifying Refinement	Real-time Properties of Embedded Assembly Prog	<sup>r</sup> ams Based	
2020.3	A Scalable Actor Progran	nming Mecha	nism Based on Key-Value Message Aggregation		
2020.3	Discriminator Soft Actor	Critic with Sp	barse Rewards		
2020.3	Development of Online He Variational Bayes	eterogeneous	Mixture Learning Algorithm Using Stepwise EM Bas	sed on	
2019.3	Practical evaluation of on	lline heteroge	neous mixture learning		
2019.3	Deductive Verification of prover Z3	eductive Verification of real-time safety properties for embedded assembly program using theorem rover Z3			
2019.3	Proposal and Practical Ev	roposal and Practical Evaluation of Integrated Model of ICM and NEC in Deep Reinforcement earning			
2019.3	Machine translation consi	dering conte	ext information based on Encoder_Decoder model		
2018.3	Theory and experimental	evaluation of	online heterogeneous mixture machine learning		
0010.0	Model checking of embed	ded assembly	/ program using R¥real-time temporal logic RTCTL		

2018.3	Performance evaluation method of Hadoop application by extracting features using the execution			
2018.3	Verifying the equality of GPU program and CPU program using symbolic execution			
2018.3	Verification of the effectiveness of generating supervised data using 3–DCG			
2018.3	Proposal and experimental evaluation of 2-D rotation image recognition model based on Convolution Neural Network			
2017.3	Parallel symbolic execution by compressing states using control flow graph			
2017.3	Studies on Data-Driven Control of Nonlinear and/or Time-Variant Mechanical Systems			
2017.3	Compression and reconstruction of method call context for program execution histories			
2017.3	A generation model of sentence representation by convolutional neural network for English-Japanes machine translation			
2017.3	Automation of the load distribution of actors using sharing states			
2017.3	Model checking of embedded assembly program using CEGAR			
2016.3	Implementation of Parallel Distributed Graph Clustering Algorithm on Apache Spark with Node Partition and Aggregation in Large-Scale Graphs			
2016.3	Integration of Supervised and Unsupervised Learning for Deep Neural Network			
2016.3	Model checking of embedded assembly program by simulation using undefined values			
2016.3	Unigrams weighting methods in sentiment analysis for short text messages			
2015.3	Software model checking of embedded assembly codes based on symbolic execution			
2015.3	SMT-based model cheking of embedded assembly codes by Interrupt transition reduction			
2015.3	CEGAR-based model cheking of linear hybrid automata			
2015.3	Trace reconstruction technique of Hadoop YARN using profiling and program analysis			
2015.3	Scalable distributed online machine learning by decision trees based on actor model			
2014.3	Hanoi:performance analysis of Hadoop using trace logs of plural layers			
2014.3	SMT-based bounded model cheking of embedded assembly codes			
2014.3	Specification and model checking of embedded CISC assembly codes using temporal logic			
2014.3	Symbolic model checking of embedded CISC assembly codes using NuSMV			
2013.9	Theory and implementation of DLHA and dynamic hybrid CEGAR			
2013.3	Detection of bugs in mobile applications by static program analysis using runtime logs			
2013.3	Implementation of Probabilistic timed CEGAR verifier using Java			
2013.3	Dynamic hybrid CEGAR verifier			
2013.3	Theory of Probabilistic timed CEGAR verifier			
2013.3	Specification and verification of Dynamic reconfigurable system			
2012.9	Specification and Verification of CPU-DRP cooperating system properties using monitor automata by HyTech			
Recent Doct	coral theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)			
2021.3	Formal Verification of Real-Time Properties for Embedded Assembly Program Using Model Checking			
2017.3	Dynamic Linear Hybrid Automata and Their Applications to Formal Verification of Dynamic Reconfigurable Embedded Systems			
2016.3 Method of Inferring Source Code Locations Corresponding to Mobile Applications Run-time Logs				
Laboratory r	nail address Satoshi Yamane <syamane *at*="" kanazawa-u.ac.jp=""></syamane>			